SOLID WASTE
APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
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LETTER OF APPROVAL
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Ratified Plan Update 2024-2038 SOLID WASTE MANAGEMENT PLAN

Solid Waste Authority of Central Ohio

April 9, 2024

PREPARED BY:

RRS recycle.com

COMMISSIONED BY:

SWACO
FROM WASTE TO RESOURCES

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GLOSSARY

Access – For purposes of this document, access is associated with the availability of waste reduction and recycling services to waste generation within a solid waste management district. In most cases, access is used as the presence or absence of waste reduction and/or recycling opportunities, and as a component of measuring compliance with Goal 1 of the 2009 State Solid Waste Management Plan (2009 State Plan).

Annual District Report – This is a report that Ohio Administrative Code Rule 3745-27-90, requires each solid waste management district to submit to Ohio EPA by June 1 each year. Ohio EPA prescribes the form. Information in the report shall be based on the previous calendar year. This report will evaluate the solid waste management district's implementation of the strategies, programs, and activities listed in the implementation schedule of its approved solid waste management plan and the progress made toward the waste reduction and recycling requirements established in paragraphs (E)(1) and (E)(2) of this rule.

Annual District Report Review Form – A document published by Ohio EPA. The document combines the data reported by a solid waste management district in its annual district report, data reported to Ohio EPA by owners/operators of solid waste facilities in their facility annual reports, and data from adjacent states regarding imports of waste from Ohio. The document provides disposal, recycling, and generation data. Ohio EPA publishes a separate form for each of the 52 solid waste management districts.

Board of County Commissioners – Consists of the County Commissioners for a single county solid waste management district. The Board of County Commissioners is responsible for implementing the solid waste management district's solid waste management plan (as prepared by the policy committee and ratified by political jurisdictions).

Board of Directors – Consists of the county commissioners from all of the counties that comprise a joint solid waste management district. The board of directors is responsible for implementing the solid waste management district's solid waste management plan (as prepared by the policy committee and ratified by political jurisdictions).

Board of Trustees – The governing body for a regional solid waste management authority. The board of trustees consists of the same members as a policy committee. The board of trustees performs all of the functions assigned to a policy committee and board of county commissioners/board of directors for a solid waste management district. Thus, the board of trustees is responsible for preparing, ratifying, and implementing the solid waste management plan.

Broker/Recycling Broker – A business that accepts recyclable materials from collection or processing activities, may or may not pay a fee for the materials, and finds an end-user or another processor to purchase the materials. A broker can also be a processor of recyclable materials that also finds end-users for the processed materials.

Captive Landfill Facility refers to a privately-owned industrial or residual solid waste landfill that is used to dispose of solid waste generated exclusively by the owner of the landfill facility.

Clean Materials Recovery Facility (MRF) – A facility where source separated, recyclables are processed.

Commingled – Single stream (also known as "fully commingled" or "single-sort") recycling refers to a system in which all paper fibers, cardboard, plastics, metals, and other containers are mixed for collection.

Commercial Solid Waste refers to solid waste generated at non-residential buildings, non-industrial businesses, and institutions. This category includes businesses such as shopping centers, retail stores, grocery stores, theaters, gas stations, business offices, hotels, restaurants, and similar service establishments. Institutions include government and non-profit offices, schools, prisons, churches, parks, and similar organizations.

Composting – As defined in Ohio Administrative Code Rule 3745-27-01(C)(3), the process of biological decomposition of solid wastes under controlled conditions resulting in compost. Controlled conditions include but are not limited to grinding, shredding, piling, physical turning, aerating, adding moisture, or other processing of solid wastes.

Composting Facility – As defined in Ohio Administrative Code Rule 3745-27-01(C)(4), a site, location, tract of land, installation, or building used for composting of solid waste in accordance with Chapter 3734 of the Revised Code and rules adopted thereunder.

There are four types of regulated compost facilities:

- Class I Compost Facilities - These facilities can be used to compost the greatest variety of solid wastes including mixed solid waste (glass, food, plastics, pesticides, household cleaners, etc.), food waste, yard waste and other industrial wastes. Class I facilities must have a permit, license and financial assurance.

- Class II Compost Facilities - These facilities can be used to compost only source-separated yard waste, food scraps, animal wastes, specified agricultural wastes, authorized bulking agents and additives, and other alternative materials. Alternative materials (feed stocks, bulking agents and additives) may be used in the compost process only if prior approval is obtained from the Director. Except in limited circumstances, Class II facilities must have a license, financial assurance and registration.

- Class III Compost Facilities - These facilities can be used to compost only source-separated yard waste, animal wastes, specified agricultural wastes, authorized bulking agents and additives. Class III facilities must be registered with Ohio EPA.

- Class IV Compost Facilities - These facilities can be used to compost only source-separated yard waste, authorized bulking agents, and the following additives: urea and bacteria or fungal inoculum. Class IV facilities must be registered with Ohio EPA.

Construction and Demolition Debris (C&DD) is defined in Ohio Administrative Code Rule 3745-400-01(F) as those materials resulting from the alteration, construction, destruction, rehabilitation, or repair of any manmade physical structure, including, without limitation, houses, buildings, industrial or commercial facilities, or roadways.

"Construction and demolition debris" does not include materials identified or listed as solid wastes, infectious wastes, or hazardous wastes pursuant to Chapter 3734. of the Revised Code and rules adopted under it; or materials from mining operations, nontoxic fly ash, spent nontoxic foundry sand, and slag; or reinforced or non-reinforced concrete, asphalt, building or paving brick, or building or paving stone that is stored for a period of less than two years for recycling into a usable construction material.

Current approved plan – Used when referring to a solid waste management district's effective solid waste plan. The current approved plan is the solid waste management plan being updated using this format.

Curbside Recycling Program – A type of recycling opportunity through which source-separated, residential recyclables are collected at the place of residence. Curbside collection typically involves collecting recyclables in designated containers or in "blue bags" that are collected with regular trash and separated from the trash later. Curbside recycling programs are divided into two categories - "Subscription" and "Non-Subscription" services.

Daily Processing Capacity – This should be the amount of materials or waste, which can be processed during a normal operating day for a facility or activity. If the facility normally operates eight hours per day, the daily processing capacity would be based upon eight hours. If the facility normally operates ten hours per day, the daily processing capacity should be based upon ten hours.

Designated Solid Waste Facility – Those solid waste facilities designated in the initial or amended plan or as are designated pursuant to Ohio Revised Code Sections 343.013, 343.014, or 343.015.

Direct Haul – Waste that is transported from the point of collection to a landfill facility (i.e. the waste is not delivered to a transfer facility).

Dirty Materials Recovery Facility (Dirty MRF) (also known as a mixed solid waste materials recovery facility) – A type of facility where the owner/operator of the facility recovers recyclables from mixed solid waste. Residents are not required to separate recyclable materials from trash because the separation is done at the MRF.

District – The term used in examples in this document to indicate that the text is for a specific solid waste management district (instead of SWMD which is used to refer to solid waste management districts in general).

Diversion – The term used in this document when referring to waste that is reused, recycled, or reduced instead of being disposed in a landfill. Ohio's waste reduction and recycling rates measure diversion from landfills, not just recycling and reuse. So, volume reduction due to composting or incinerating waste is included in the reduction and recycling rate.

Drop-Off Recycling – Refers to a type of recycling opportunity that serves as a collection location for recyclable materials. Drop-off recycling locations are typically used by the residential population but may also be used by businesses and institutions. People who use drop-offs voluntarily transport recyclable materials to the host site.

A drop-off site typically consists of trailers, roll-off containers, or other types of collection containers where people place their recyclable materials. Drop-offs can be manned or unmanned, can collect recyclables as single or multiple streams, can be available on public or private property, can be available to the general public or serve a specific population, and can be provided by public entities, private companies, non-profit organizations or other providers. The drop-off does not have to be provided by the SWMD to be considered part of the recycling infrastructure.

A drop-off is categorized by the number of hours the drop-off is available for use and the population of the jurisdiction in which the drop-off is located. Accordingly, drop-offs are defined as being located in either urban or rural areas and as being available either full-time or part-time.

- An urban area is a political jurisdiction with a residential population of 5,000 or more.
- A rural area is a political jurisdiction with a residential population of less than 5,000.
- Full-time refers to a drop-off that available for at least 40 hours per week.
- Part-time refers to drop-off that is available for use less than 40 hours per week but is available at a regularly-scheduled time at least once a month.

There are four potential types of drop-offs:

- An urban, full-time drop-off is located in a political jurisdiction with a residential population of 5,000 or more and is available at least 40 hours per week.
- A rural, full-time drop-off is located in a political jurisdiction with a residential population of less than 5,000 and is available at least 40 hours per week.
- An urban, part-time drop-off is located in a political jurisdiction with a residential population of 5,000 or more and is available for use less than 40 hours per week but is available at a regularly-scheduled time at least once a month.
- A part-time, rural drop-off is located in a political jurisdiction with a residential population of less than 5,000 and is available for use less than 40 hours per week but is available at a regularly scheduled time at least once a month.

To be creditable recycling opportunity for achieving Goal 1, a drop-off must meet the criteria for one of the four types of drop-offs above and the general criteria below:

1. The drop-off must collect at least five of the materials designated as highly amendable to recycling in the 2009 State Plan. Those materials are listed in the following table:

Materials Designated to Demonstrate Compliance with Goal #1

Residential Sector	Commercial Sector
Corrugated cardboard	Corrugated cardboard
Newspaper	Office paper
Mixed paper	Mixed paper
Glass containers	Glass containers
Steel containers	Steel containers
Aluminum containers	Plastic containers
Plastic containers	Wood pallets and packaging
	Food waste

2. The drop-off is available to the public and the public can easily find and access the site.
3. The drop-off meets the following minimum standards (unless the SWMD can demonstrate that smaller capacity is adequate):
   - Rural drop-offs must provide a minimum of six cubic yards of capacity, and
   - Urban drop-offs must provide a minimum of 10 cubic yards of capacity.
4. There are signs that are adequate to, at a minimum:
   - Direct the public to the site or provide the location of the site,
   - List the materials that are accepted, and
   - Provide days and hours of operation (particularly important if the site is available less than 24 hours per day, seven days per week).
5. The drop-off meets the demand of the population for use of the drop-off site (e.g., provides collection containers with adequate capacity to handle the use of the site, is serviced frequently enough given the use of the site, etc.).

Dual stream collection – A recycling system in which fiber (paper and cardboard) is collected in one receptacle and all containers (glass, plastic, metal) are collected in another receptacle.

Electronic Waste or e-waste – Refers to discarded end-of-life and obsolete electrical devices or their parts. Televisions, computers, and cell phones are all common examples of electronic waste.

Excluded Waste (Exempt Waste) – Refers to those wastes that the definition of solid waste [see Ohio Administrative Code Rule 3745-27-01(S)(23)] specifically calls out (i.e. excludes) as not being solid waste. These wastes include slag, uncontaminated earth, non-toxic fly ash, spent, non-toxic foundry sand, material from mining, and construction and demolition debris. Please note that non-toxic fly ash and non-toxic foundry sand and spent foundry sand determined to be non-toxic in accordance with Ohio EPA Division of Surface Water Policy 0400.007.

Facility Data Report – A report published by Ohio EPA annually. The report summarizes data reported to Ohio EPA by owners/operators of solid waste landfills and transfer facilities in facility annual reports.

Fee Exempt Waste – refers to those wastes that Ohio Revised Code Section 3734.57 specifically excludes from being subject to solid waste fees. The fee exempt wastes are listed in ORC Section 3734.57 paragraphs (D)(1) through (D)(7).

Ferrous Metals – Metals that contain iron. Examples include steel, stainless steel, cast Iron, and wrought iron.

Flue Gas Desulfurization (FGD) Waste – Waste generated as a result removing sulfur dioxide (SO2) from combustion gases generated at coal-fired power plants. As used in this document, the term usually refers to waste generated by wet scrubbers that remove sulfur dioxide (SO2) emissions using lime.

Generation - This term refers to the amount (weight, volume, or percentage of the overall waste stream) of materials and products as they enter the waste stream and before materials recovery, composting, or combustion takes place.

Generation Fee – A fee established pursuant to Ohio Revised Code Section 3734.573 (A) and assessed on each ton of solid waste generated within the District.

Household Hazardous Waste (HHW) – refers to hazardous waste that is generated in households. Ohio's regulations define household as including all of the following:

1. Single and multiple unit residences
2. Hotels and motels
3. Bunkhouses
4. Ranger stations
5. Crew Quarters
6. Dormitories
7. Campgrounds
8. Picnic grounds
9. Day-use recreation areas

In Ohio, hazardous waste generated at a household is not regulated under the hazardous waste regulations. Thus, homeowners can dispose of HHW in their garbage.

Materials used in the home/apartment such as cleaners, paints, solvents, pesticides, used oil, batteries, and other automotive products that potentially can cause injuries to refuse workers, damage to equipment, and/or harm to the environment if disposed in the solid waste stream. HHW typically exhibits one or more characteristics of hazardous wastes but is exempted from regulation as a hazardous waste because of generation by households.

Incineration – The controlled process by which solid wastes are burned and changed into gases and ash.

Industrial Solid Waste – is defined in OAC Rule 3745-29-01 as a type of solid waste generated by manufacturing or industrial operations and includes, but is not limited to, solid waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and food-related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay and concrete products; textile manufacturing; and transportation equipment.

Materials Recovery Facility (MRF) – A type of facility used for separating, sorting, or processing waste in order to segregate materials with value (e.g. aluminum, glass, plastics) from trash. The type of processing conducted at a MRF can range widely from buildings in which recyclables are sorted primarily by hand to mechanical facilities that recover recyclables from mixed solid waste. There are two types of MRFs – clean MRFs and dirty MRFs. See the definitions of those terms.

Municipal Solid Waste (also referred to as Residential/Commercial Waste) – is defined in Ohio Administrative Code Rule 3745-27-01(M)(5) as a type of solid waste generated from community, commercial, and agricultural operations, including, but not limited to, the following:

(1) Solid waste generated by community operations, i.e. wastes derived from households (including single and multiple household residences, hotels, motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).
(2) Solid waste generated by commercial operations (including stores, offices, restaurants, warehouses, and other non- manufacturing activities).
(3) Solid waste generated from agricultural operations (including single-family and commercial farms, greenhouses, and nurseries).
(4) Sludge from municipal, commercial or industrial wastewater treatment plants, water treatment plants, and air pollution control facilities that is co-disposed with wastes specified in 1, 2, 3, and 5 in a sanitary landfill facility.
(5) Fly and bottom ashes generated from the incineration of municipal solid waste provided the fly ash and bottom ash are not regulated as hazardous wastes.

Non-ferrous – Metals that do not contain iron. Non-ferrous metals include aluminum, brass, copper, nickel, tin, lead, and zinc, as well as precious metals like gold and silver. Non-ferrous metals exhibit properties such as low weight, higher conductivity non-magnetic and resistance to corrosion.

Non-Subscription Curbside Recycling Program – Refers to a type of curbside recycling program that is available to residents automatically within a defined area. To qualify as a non-subscription curbside recycling program for purposes of achieving Goal 1 of the 2009 State Plan, the curbside recycling service must meet all of the following criteria:

All residents living in at least single-family homes within a jurisdiction (i.e. a city, village, or township) receive the service;
Homeowners don't decide whether they receive curbside recycling – they receive the service whether they want it or not;
Homeowners may or may not be billed for the service;
A homeowner can choose not to participate in the curbside service but cannot opt out of paying for the service.
To be a creditable for purposes of achieving Goal 1, the curbside service must also:
be available on a regular basis, at least once every two weeks;

collect at least five of the materials designated at highly amendable to recycling in the 2009 State Plan. Those materials are listed in the following table:

Materials Designated to Demonstrate Compliance with Goal #1

Residential Sector	Commercial Sector
Corrugated cardboard	Corrugated cardboard
Newspaper	Office paper
Mixed paper	Mixed paper
Glass containers	Glass containers
Steel containers	Steel containers
Aluminum containers	Plastic containers
Plastic containers	Wood pallets and packaging
	Food waste

North American Industrial Classification System (NAICS) - - NAICS was developed and adopted in 1997 to replace the Standard Industrial Classification (SIC) system. The NAICS is the standard used to classify business establishments in the United States, Canada, and Mexico to facilitate collecting, analyzing, and publishing data related to the business economy.

Ohio Administrative Code (OAC) – The compilation of rules governing the actions of all state agencies. The OAC is based upon authorities granted in the Ohio Revised Code.

Ohio Revised Code (ORC) – Contains all current statutes of the Ohio General Assembly consolidated into provisions, titles, chapters and sections.

Open dumping – Depositing solid waste into a body of water or onto the ground at a site that is not licensed as a solid waste facility under section 3734.05 of the Ohio Revised Code. For the purpose of a solid waste management plan, open dumps are considered as areas off the road or adjacent to the road or right-of-way on where solid waste is dumped. Road right-of-ways with occasional litter or debris are not considered to be open dumps.

Other Waste – This term, refers to materials disposed in sanitary landfills, which were not classified as solid wastes. In this document, the term "exempt wastes" is used to refer to these materials disposed in sanitary landfills, which are not classified as solid wastes.

Participation Rate – As defined by the National Recycling Coalition, a participation rate is the number of households that separate out materials for recycling, divided by the total number of households serviced by the recycling program at least once over an established time period or number of collection events. In the case of a curbside recycling program, the participation rate is commonly measured by tracking whether a particular household (by address), sets out materials during the time period examined. In contrast, the set-out rate is defined as a count of the "set-outs" on the observed collection day, as a percent of the total number of households or entities serviced.

Pay-As-You-Throw (PAYT) – (see definition for Volume-Based Billing)

Plan – A term used to refer to a solid waste management district's solid waste management plan.

PPD – The acronym for pounds per person per day.

Policy committee – The group that is responsible for preparing and ratifying a solid waste management plan for a solid waste management district. As prescribed in Ohio Revised Code Section 3734.54(B), a policy committee consists of the following members, one from each of the counties in the solid waste management district:

- The president of the board of county commissioners or his designee
- The chief executive officer (or his designee) of the municipal corporation with the largest population in the county
- A member representing townships
- The health commissioner (or his designee) of the health district with the largest territory within the county
- A member representing industrial, commercial, or institutional generators
- A member representing the general interest of citizens
- One member representing the public

If there is an even number of counties in the solid waste management district, then the policy committee must have an additional member representing the public.

The policy committee for a single county solid waste management district has seven members. The policy committee for a four-county solid waste management has 29 members (seven per county plus one additional public representative.

Processing Capacity – For purposes of this document, processing capacity refers to the design capacity of the facility (or the maximum amount of materials which could be processed), and not the actual amount of materials processed during a given time period.

Quarterly Fee Report – The report solid waste management districts submit to Ohio EPA to account for revenues and expenditures during the previous three months. A solid waste management districts submits four reports annually using a form prescribed by Ohio EPA (see Ohio Revised Code Section 3734.575).

Recycling - The systematic collection, sorting, decontaminating and returning of waste materials to commerce as commodities for use or exchange. Recycling also means to use, reuse or reclaim a material. It does not include incineration.

Reference Year – The calendar year selected by the policy committee/board of trustees as the year for collecting data that will serve as baseline data for a solid waste management plan.

The reference year is usually the calendar year prior to the calendar year the policy committee is required to begin updating a solid waste management plan. For example, if the policy committee is required to begin preparing its update in 2015, then the policy committee would select 2014 as the reference year.

Regional Solid Waste Management Authority - One of two structures a county/counties can form for purposes of complying with Ohio Revised Code Section 3734.52. The other structure is a solid waste management district.

A regional solid waste management authority is governed by one group – the board of trustees.

Residential Solid Wastes – Solid wastes generated at residential dwellings, such as single-family homes, apartment complexes, condominiums, mobile homes. Domiciles such as nursing homes, campgrounds, and other types of group quarters and institutions are considered to generate commercial waste.

Residential/Commercial Solid Waste – Refers to the combination of waste generated by the residential and commercial sectors. Residential/commercial solid waste is the same as municipal solid waste.

Reuse –Taking an object or material that would otherwise be disposed and using it for its original purpose or a different purpose, without converting the object or material. "Reuse" does not include using an object or material as fill. Reuse differs from recycling which is the breaking down of the material into raw materials which are used to make a new item.

Resource Recovery – This term refers to the conversion of solid waste into energy, or some material, which can be used to create energy at any stage before ultimate disposal. As used in this document, resource recovery does not include the recovery of materials through mechanical and advanced technology methods.

Salvage dealer/motor vehicle salvage dealer –Any person whose primary business is selling recovered motor vehicle parts.

Scrap dealer - The owner or operator of a business that purchases or receives scrap metal for the purpose of sorting, grading, and shipping metals to third parties for direct or indirect melting into new products.

Set-out Rate – The National Recycling Coalition defines a set-out rate as the number of households that set out materials on their assigned collection day, divided by the total number of households served. A set-out rate is a measurement commonly used in assessing curbside collection programs.

Single Stream Recycling – Refers to a recycling system in which all recyclable materials are collected in one container (i.e. commingled) instead of separated into individual commodities (such as newspaper, corrugated cardboard, plastics, glass, etc.).

Solid Waste Management District, SWMD, or District – One of two structures a county/counties can form for purposes of complying with Ohio Revised Code Section 3734.52. The other structure is a regional solid waste management authority.

A solid waste management district is a county which has established a resolution, or joint counties which have entered into an agreement for the purposes of preparing, adopting, submitting, and implementing a solid waste management plan for the county or joint counties and for the purposes of providing for, or causing to be provided for, the safe and sanitary management of solid waste within all of the incorporated and unincorporated territory of the county or joint counties and in compliance with Chapters 343 and 3734 of the Revised Code.

A solid waste management district is governed by two groups – a policy committee and a board of county commissioners/board of directors.

Solid Waste – Unwanted residual solid or semi-solid materials resulting from industrial, commercial, agricultural, and community operations, but 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, non-toxic foundry sand, slag, and other substances that are not harmful to public health. It 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.

Source Reduction – Any effort to reduce, at the source, the quantity of waste generated, toxic chemical use, or any release to the environment. Source reduction in generation of commercial or industrial wastes could result from process modifications, improvement in feedstock purity, better operating and management practices, and

increases in the efficiency of machinery. It includes reducing the amount of materials entering the waste stream by voluntary or mandatory programs to eliminate the initial generation of waste.

Source separated recyclables - Materials that have been separated from trash at either the point of generation or the point of collection for the purpose of recycling the materials.

Standard Industrial Classification (SIC) Codes – Refers to the system established by the U.S. government to classify business establishment. A SIC code consists of a four-digit numerical code that the government assigned to a business establishment to identify the primary business of the establishment. In 1997, the SIC system was replaced with the NAICS system. Standard Industrial Classification used to categorize industries, institutions, and businesses according to the product manufactured or services offered.

State Solid Waste Management Plan (also referred to as State Plan) – Ohio Revised Code Section 3750 requires the Ohio Environmental Protection Agency with the advice of the solid waste management advisory council, to prepare the state solid waste management plan. The law prescribes eight purposes for the state plan. The main purpose of the state plan is to reduce Ohio's reliance on using solid waste landfill facilities to manage solid waste. To do this, the state plan establishes the waste reduction and recycling goals for both the State and Ohio's 52 solid waste management districts (SWMDs).

Subscription Curbside Recycling Program – Refers to a type of curbside recycling service through which residents must take a voluntary action to sign up for and agree to pay for the service. To qualify as a subscription curbside recycling program for purposes of achieving Goal 1 of the 2009 State Plan, the curbside recycling service must meet all of the following criteria:

- The service is offered to all residents living in at least single-family homes within the jurisdiction (i.e. a city, village, or township);
- Homeowner's decide whether to receive curbside recycling service. The only homeowners that have the ability to use a curbside program are those that contact a service provider to sign-up for the curbside program.
- The only homeowners that can participate in the service are those that pay for the service.
- The curbside recycling service must be available on a regular basis, at least once every two weeks.

The program must collect at least five of the materials designated as highly amendable to recycling in the 2009 State Plan. Those materials are listed in the table below:

Materials Designated to Demonstrate Compliance with Goal #1

Residential Sector	Commercial Sector
Corrugated cardboard	Corrugated cardboard
Newspaper	Office paper
Mixed paper	Mixed paper
Glass containers	Glass containers
Steel containers	Steel containers
Aluminum containers	Plastic containers
Plastic containers	Wood pallets and packaging
	Food waste

SWMD – The acronym for Solid Waste Management District.

TPD – The acronym for Tons Per Day.

TPY – The acronym for Tons Per Year.

Transfer Station/Transfer Facility – A facility, which receives deliveries of solid waste by local collection vehicles and provides for transfer to larger vehicles, which deliver wastes more economically to resource recovery or landfill facilities. As defined in Ohio Administrative Code Rule 3745-27-01(T)(28), 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 are generated off the premises of the facility from vehicles or containers into other vehicles or containers for transportation to a solid waste disposal facility. The term does not include any facility that consists solely of portable containers that have an aggregate volume of fifty cubic yard or less nor any facility where legitimate recycling activities are conducted. The term does not include any facility that accepts scrap tires other than scrap tires which are accepted incidental to a mixed solid waste shipment.

Volume-Based Billing – A trash collection service where the amount a household pays for trash collection depends on the amount of trash the household disposes. The more waste the household throws away, the more the household pays for trash service. Volume-based billing treats trash collection like a utility, such as electricity or natural gas.

Volume Reduction – Activities such as incineration, which reduce the volume of waste to be disposed.

Waste Generation – This term refers to the amount (weight, volume, or percentage of the overall waste stream) of materials and products as they enter the waste stream and before materials recovery, composting, or combustion takes place.

Section i. Solid Waste Management District Information

A. DISTRICT INFORMATION

Table i-1. Solid Waste Management District Information

	Solid Waste Authority of Central Ohio
Member Counties	Franklin
Coordinator's Name (main contact)	Joe Lombardi
Job Title	Executive Director
Street Address	4239 London Groveport Road
City, State, Zip Code	Grove City, OH 43123
Phone	614-871-5100
Fax	614-871-5103
E-mail address	joe.lombardi@swaco.org
Webpage	swaco.org
SWMD Name	Solid Waste Authority of Central Ohio

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

Name	Solid Waste Authority of Central Ohio
Commissioner Kevin Boyce Chelsea Barnett Designee for Commissioner Kevin Boyce	County Commissioners
Kathy Owens	Municipal Corporations
Ron Grossman	Townships
Jeff Gibbs	Health District
Randy Sokol	Generators
Susan Tilgner	Citizens
Patrick King	Public
Pending Appointment	Municipal Corporations
Ken Wilson	County Commissioners

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

	Solid Waste Authority of Central Ohio
Name	Patrick King, Chair
Street Address	4239 London-Groveport Rd.
City, State, Zip Code	Grove City, OH, 43123
Phone	614-871-5100
Fax	614-871-5103
E-mail address	boardsecretary@swaco.org

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

Commissioner Name	County	Chairperson/President
N/A		

The board of trustees is the governing Board for SWACO.

B. TECHNICAL ADVISORY COMMITTEE

The District did not establish a technical advisory committee (TAC) for the preparation of this Plan Update.

C. PLAN PREPARED BY

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Chapter 1: Introduction

Thank you for taking the time to read the Solid Waste Management Plan Update ("Plan") for the Solid Waste Authority of Central Ohio (SWACO). This Plan is a regulatory document overseen by the Ohio Environmental Protection Agency and serves as a roadmap for Franklin County to reduce its reliance on landfills and to manage the solid waste generated in the county. 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 SWACO 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.

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

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.

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 (throughout the Plan, SWACO may be referred to as "SWACO", the "Authority," or the "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 Board 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. SWACO is on a five-year plan update schedule.

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, 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.

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 many other activities to reduce the generation and disposal of solid waste within the District, which will described later in this document.

Strategic Planning

In 2015, SWACO's Board took several significant actions, including engaging in a strategic planning process to set forth and support a new direction for SWACO. This process resulted in Vision and Mission statements and Guiding Principles, all of which are periodically evaluated and updated.

The Board approved a new vision, mission and set of guiding principles for the organization for 2021 - 2032, which are outlined in Figure 1-1.

Figure 1-1. SWACO's Vision, Mission, and Guiding Principles (2021-2032)

Using the Vision, Mission, and Guiding Principles as a foundation, SWACO also periodically establishes Strategic Goals which are used to focus and prioritize activities, as well as provide a basis for measuring progress and success towards meeting our goals.

As evidenced by the results of the ongoing strategic planning process, SWACO is constantly evolving as an organization, 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 solid waste management plan is the *2020 Solid Waste Management Plan* (2020 State Plan). The 2020 State Plan established ten goals as follows as outlined in Figure 1-2.

Figure 1-2. SWMD State Plan Goals

Goal 1	• The SWMD shall provide its residents and commercial businesses with access to opportunities to recycle solid waste. At a minimum, the SWMD must provide access to recycling opportunities to 80% of its residential population in each county and ensure that commercial generators have access to adequate recycling opportunities.
Goal 2	• The SWMD shall reduce and recycle at least 25 percent of the solid waste generated by the residential/commercial sector.
Goal 3	• The SWMD shall provide the following required programs: a Web site; a comprehensive resource guide; an inventory of available infrastructure; and a speaker or presenter.
Goal 4	• The SWMD shall provide education, outreach, marketing and technical assistance regarding reduction, recycling, composting, reuse and other alternative waste management methods to identified target audiences using best practices.
Goal 5	• The SWMD shall incorporate a strategic initiative for the industrial sector into its solid waste management plan.
Goal 6	• The SWMD shall provide strategies for managing scrap tires, yard waste, lead-acid batteries, household hazardous waste and obsolete/end-of-life electronic devices.
Goal 7	• The SWMD shall explore how to incorporate economic incentives into source reduction and recycling programs.
Goal 8	• The SWMD will use U.S. EPA's Waste Reduction Model (WARM) (or an equivalent model) to evaluate the impact of recycling programs on reducing greenhouse gas emissions.
Goal 9	• The SWMD has the option of providing programs to develop markets for recyclable materials and the use of recycled-content materials.
Goal 10	• The SWMD shall report annually to Ohio EPA regarding implementation of the SWMD's solid waste management plan.

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

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

A SWMD's solid waste management plan must provide programs to meet up to eight of the goals. Goal 9 (market development) is an optional goal. Goal 10 requires submitting annual reports to Ohio EPA, and no demonstration of achieving that goal is needed for the solid waste management plan.

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

Chapter 2: District Profile

This chapter provides context for SWACO's solid waste management plan by providing an overview of general characteristics of SWACO. Characteristics discussed in this chapter include:

- The communities and political jurisdictions within SWACO;
- SWACO's population in the reference year and throughout the planning period;
- The available infrastructure for managing waste and recyclable materials within SWACO;
- The commercial businesses and institutional entities located within SWACO;
- The industrial businesses located within SWACO;
- Any other characteristics that affect waste management within or provide challenges.

Understanding these characteristics helps the Board of Trustees make decisions about the types of programs that will most effectively address the needs of residents, businesses, and other waste generators within SWACO's jurisdiction. As an example, population distribution, density, and change affect the types of recycling opportunities that make sense for a particular community and for SWACO. In addition, the make-up of the commercial and industrial sectors within SWACO influences the types of wastes generated and the types of programs SWACO provides to assist those sectors with their recycling and waste reduction efforts.

Unique circumstances such as hosting several higher education institutions or a rapidly growing residential, commercial, and industrial base present opportunities and challenges in providing effective waste reduction and recycling programs. The Board takes these characteristics in mind when developing its overall waste management strategy.

A. PROFILE OF POLITICAL JURISDICTIONS

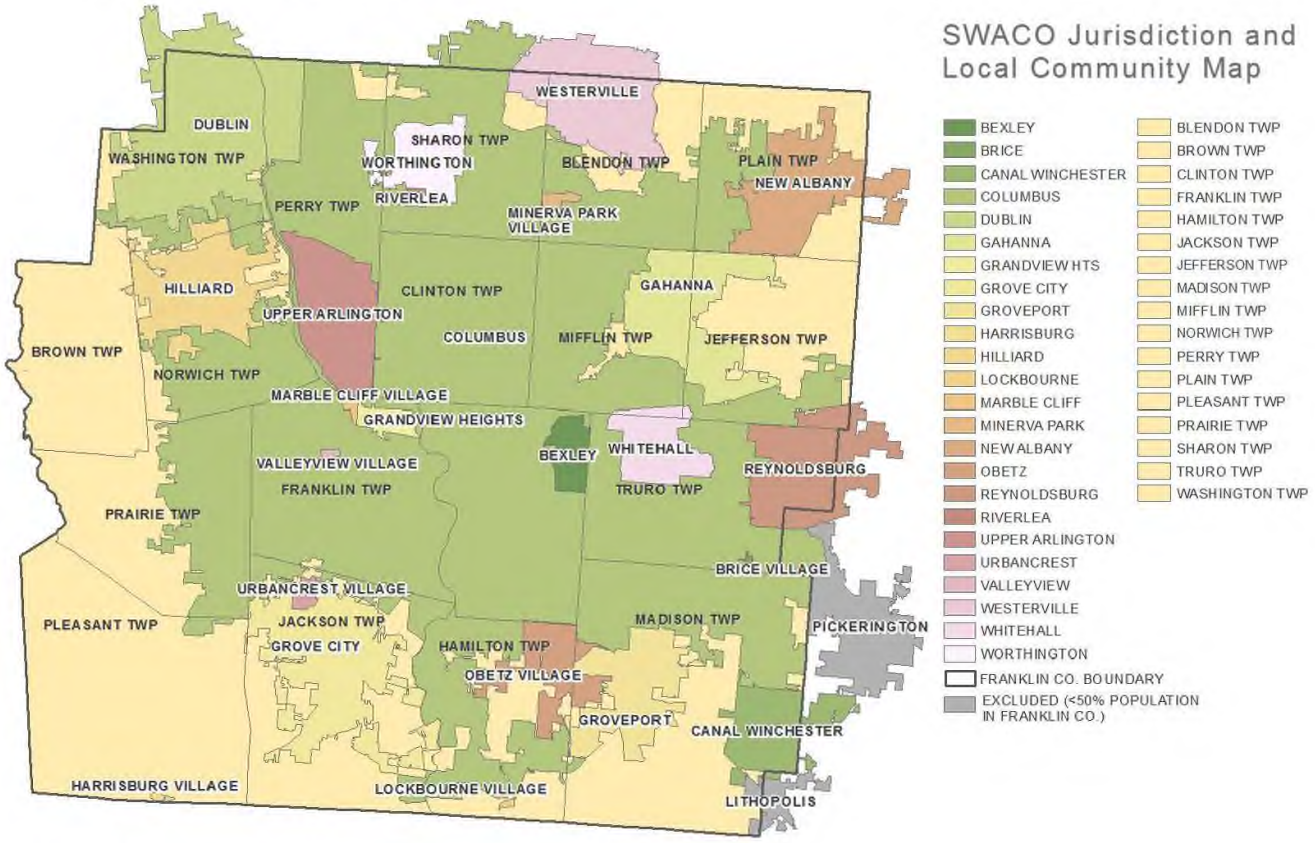
Counties in the Solid Waste Management District

SWACO's District is mainly comprised of Franklin County, Ohio. SWACO's jurisdiction, in accordance with Ohio law, includes all 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. 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 as described in Figure 2-1.

County Overview

The 2022 Franklin County Data Center sponsored by the Franklin County Commissioners reports that Franklin County, named for the American statesman, scientist, and inventor Benjamin Franklin, was established on April 30, 1803. The Franklin County Commissioners manage an annual budget of more than $1 billion. The capital city Columbus offers a variety of beautiful neighborhoods and is home to 19 Metro Parks with more than 200 miles of trails. It has a critically acclaimed food scene and top-ranked attractions like the Columbus Zoo and its neighboring water park. Major attractions include The Ohio State University, COSI, Columbus Museum of Art, and interesting regions like the Short North Arts District and German Village. The County is home to 16 municipalities, 16 Townships, and 9 Villages.

Figure 2-1 District Communities Map



Source: swaco.org

B. POPULATION

Reference Year Population – Franklin County

The population of Franklin County as of July 1, 2021, was estimated to be 1,326,780. The community populations added or subtracted to the Franklin County total in order to obtain the total District population for the reference year (2021) are shown in Table C-1a. Each of these estimates is based on MORPC publication "MORPC Population Estimates" published April 19, 2022. 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 yearend total District population of 1,383,836. Further details can be found in Appendix C: Population Data.

Table C-1a District Population includes Reference Year Population Adjustments

Community	Franklin
Before Adjustment	1,326,780
Additions	
City of Canal Winchester	1,987
City of Columbus	25,959
City of Dublin	8,605
City of New Albany	46
City of Reynoldsburg	11,311
City of Westerville	9,291
Subtractions	
Village of Lithopolis	49
City of Pickerington	94
After Adjustment	1,383,836

Source: " MORPC Population Estimates" prepared by MORPC, Central Ohio Population Resource Hub, April 19, 2022

Franklin County is the most populated county in the state of Ohio followed by Cuyahoga County, with a population of 1,249,387 people, and Hamilton County, with a population of 826,139. Most of its land area is taken up by its county seat, Columbus, the state capital and most populous city in Ohio. Franklin County is home to one of the largest universities in the United States, Ohio State University, which has approximately 62,000 students on its main Columbus campus.

Table C-1b Total Reference Year Population

Total Reference Year Population	
Unadjusted Population	*Adjusted Population*
1,326,780	1,383,836

Source: MORPC Projection Mid-Ohio Regional Planning Commissions Population Estimates Web 10Dec2022

Political Subdivisions:

There are 41 political subdivisions in Franklin County. The City of Columbus occupies most of the area in square miles and represents 66% of the total population, while other cities represent an additional 27% of the population. Townships represent 7% of the population and villages represent less than 1% of the total population, as illustrated Figure 2-2.

Table 2-1 shows the largest community in the county and the size of the community relative to the total population of the county. The largest community in Franklin County accounts for 66% of the SWACO's population.

Table 2-1 Population Distribution in the Reference Year

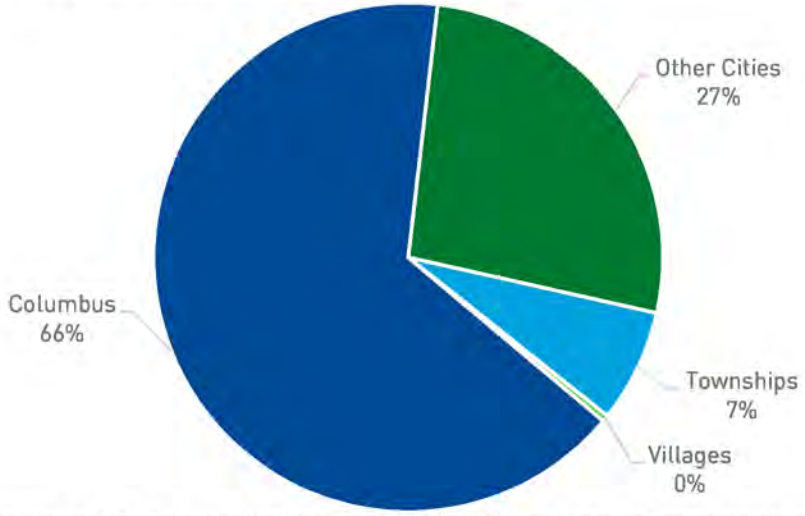
County		Largest Policial Jurisdiction		
Name	Population	Community Name	Population	Percent of Total County Population
Franklin	1,383,836	Columbus	909,686	65.7%

Table 2-2 shows distribution of the population in cities, villages, and townships and the distribution of the population in incorporated versus unincorporated areas. Population between villages and unincorporated townships is almost equally divided.

Table 2-2 Population Distribution

County	Percent of Population in Cities	Percent of Population in Villages	Percent of Population in Unincorporated Township
Franklin	93%	<1%	7%

Figure 2-2 District Political Subdivision Profile

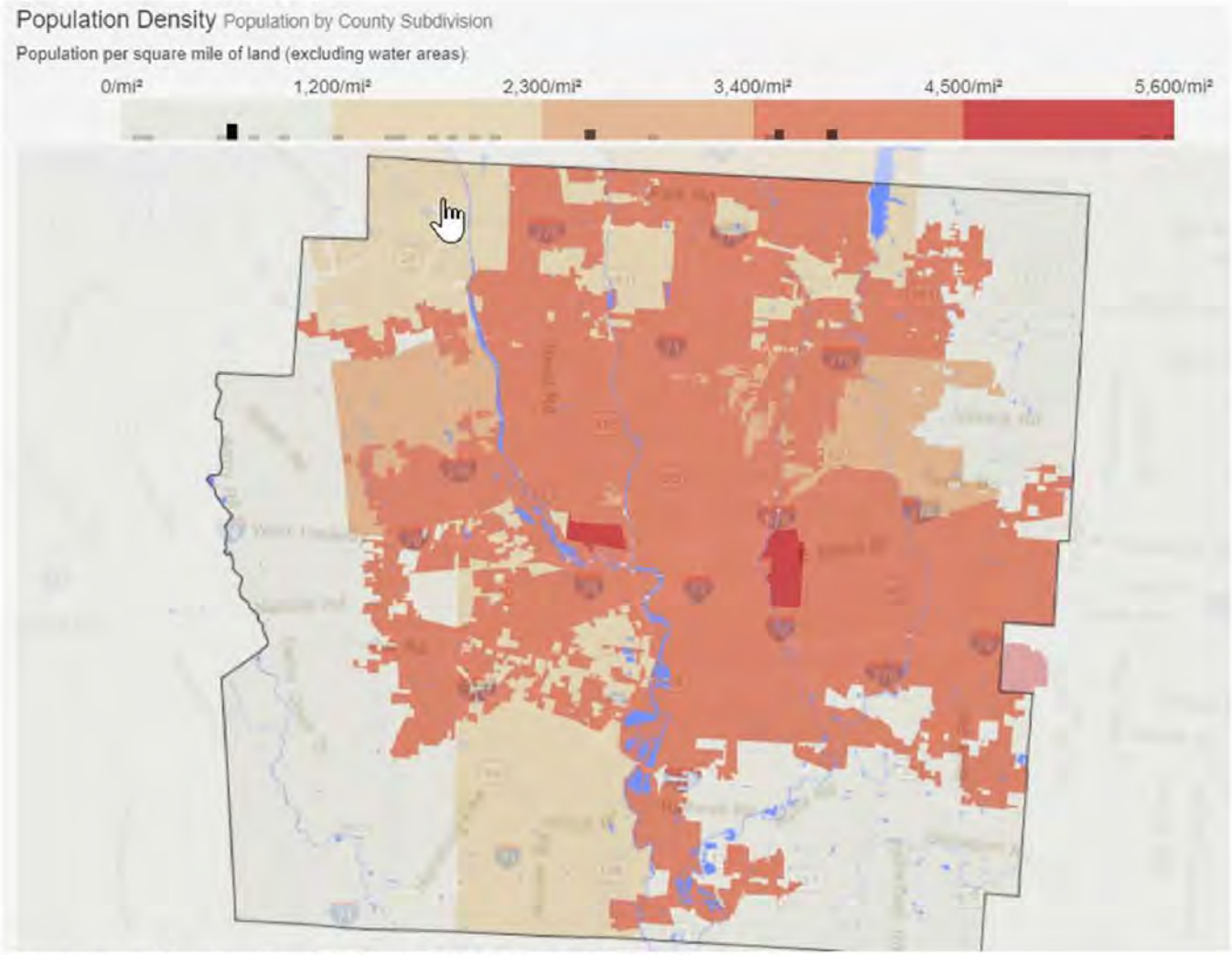


Source: MORPC Projection Mid-Ohio Regional Planning Commissions Population Estimates Web 10Dec2022

Population Density – Franklin County

Franklin County illustrates a typical population density distribution as shown in Figure 2-3. The next two largest Ohio Counties, Cuyahoga County and Hamilton have similar population distributions with the hub cities being the highest densities and surrounding suburbs having less density in concentric circles. Columbus is a large sprawling city that occupies 60% of the county by land mass. The density is therefore slightly less at 3.837/sq. mi. than the inner ring area of Grandview Heights and Bexley that have densities of approx. 5,500/sq. mi. As expected, the outer townships of Plain, Brown, Madison, and Pleasant have the least density of 1,800/sq. mi.

Figure 2-3 Population Density



Source: Statistical Population Density by County Subdivision Statistical Atlas 13Dec2022

Population Change

As illustrated in Figure C-1, SWACO expects a consistent population increase of 20.2% during the planning period or an average of 1.01% per year (12,771 persons). These calculations are partially based on the MORPC publication of Mid-Ohio Regional Planning Commissions County Growth Projections.

This model accounts for both long-term stable trends over time (such as declining birth rates), as well as cyclical but irregular short-term changes in growth (such as changing immigration policies or a pandemic). In developing the growth projections, MORPC also uses data from key industry partners such as the Building Industry Association (BIA) and the Columbus Board of Realtors.

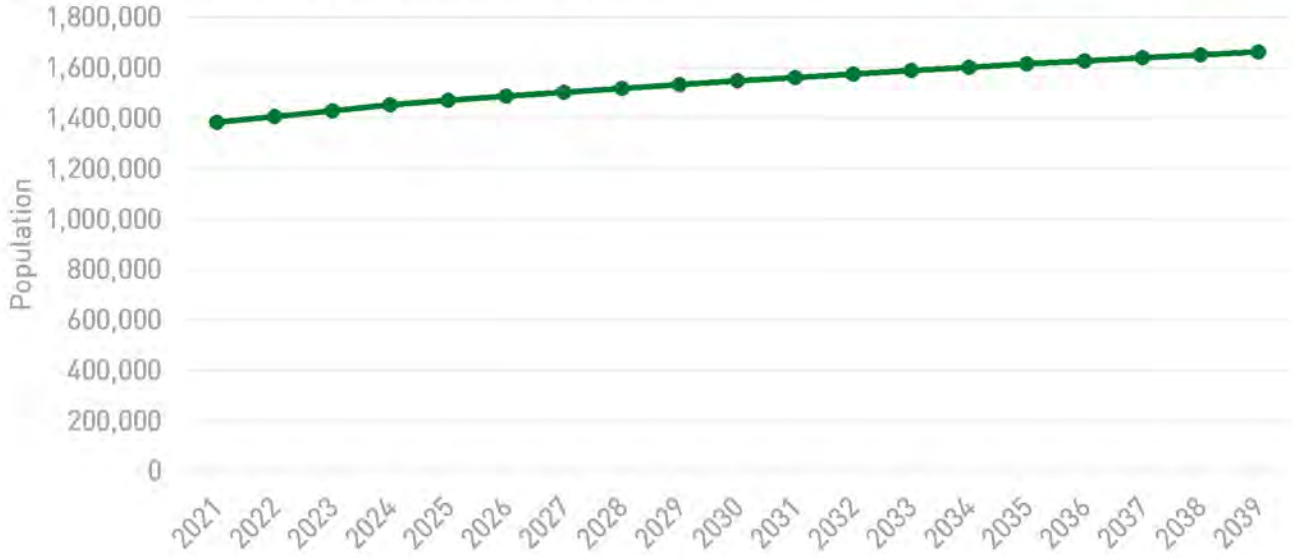
Table C-1 and Figure C-2 depict the historical and projected population for SWACO demonstrating a consistent population increase. SWACO's jurisdiction is anticipated to grow 20.2% during the planning period or an average of 1.01% per year (12,771 persons).

Table C-1: Population Projections

Year	Franklin County ODSA Projection	Franklin County MORPC Projection
2021	1,383,836	1,383,836
2022	1,385,188	1,406,721
2023	1,386,541	1,429,607
2024	1,387,893	1,452,492
2025	1,385,388	1,471,521
2026	1,394,588	1,486,834
2027	1,403,788	1,502,148
2028	1,412,988	1,517,461
2029	1,422,188	1,532,774
2030	1,431,388	1,548,088
2031	1,440,204	1,561,579
2032	1,449,020	1,575,070
2033	1,457,836	1,588,561
2034	1,466,652	1,602,052
2035	1,475,468	1,615,543
2036	1,484,288	1,627,428
2037	1,493,108	1,639,313
2038	1,501,928	1,651,199
2039	1,510,748	1,663,084

Source: ODSA Projection: Ohio Development Services Agency, "Population Projections: County Totals" April 2018.
MORPC Projection: Mid-Ohio Regional Planning Commissions Population Estimates" Web. 15 July 2022

Figure C-2 Historical and Projected Population Projections



Franklin County is projected to be one of the fastest growing counties in the Mid-Ohio Region as defined by MORPC as shown in Table 2-3. Note that Franklin County's 20% growth rate is second only to Delaware and Union. Union County's growth is directed influenced by the North American Honda Manufacturing facility and the related component manufacturing in and around the Marysville area.

Table 2-3 SWACO Detailed Regional Population Projections

County	2021	2025	2030	2035	2040	2021 - 2040
Franklin	1,383,836	1,471,521	1,548,088	1,615,543	1,663,084	20%
Delaware	211,050	227,234	241,709	254,655	266,234	26%
Licking	177,622	184,287	190,913	197,501	204,051	15%
Fairfield	159,980	167,264	173,169	177,956	181,836	14%
Ross	77,566	77,872	78,049	78,152	78,211	1%
Marion	64,754	64,740	64,740	64,740	64,740	0%
Knox	61,999	62,852	63,483	63,950	64,296	4%
Union	60,415	65,570	69,596	72,741	75,197	24%
Pickaway	58,652	60,047	61,476	62,938	64,435	10%
Logan	45,364	45,357	45,351	45,347	45,344	0%
Madison	44,938	46,127	47,295	48,442	49,568	10%
Perry	36,084	36,140	36,166	36,179	36,185	0%
Morrow	35,018	35,052	35,073	35,087	35,097	0%
Fayette	28,954	29,014	29,017	29,017	29,017	0%
Hocking	28,433	28,484	28,509	28,520	28,525	0%

Source: "MORPC Central Ohio Resource Hub" prepared by MORPC 2020

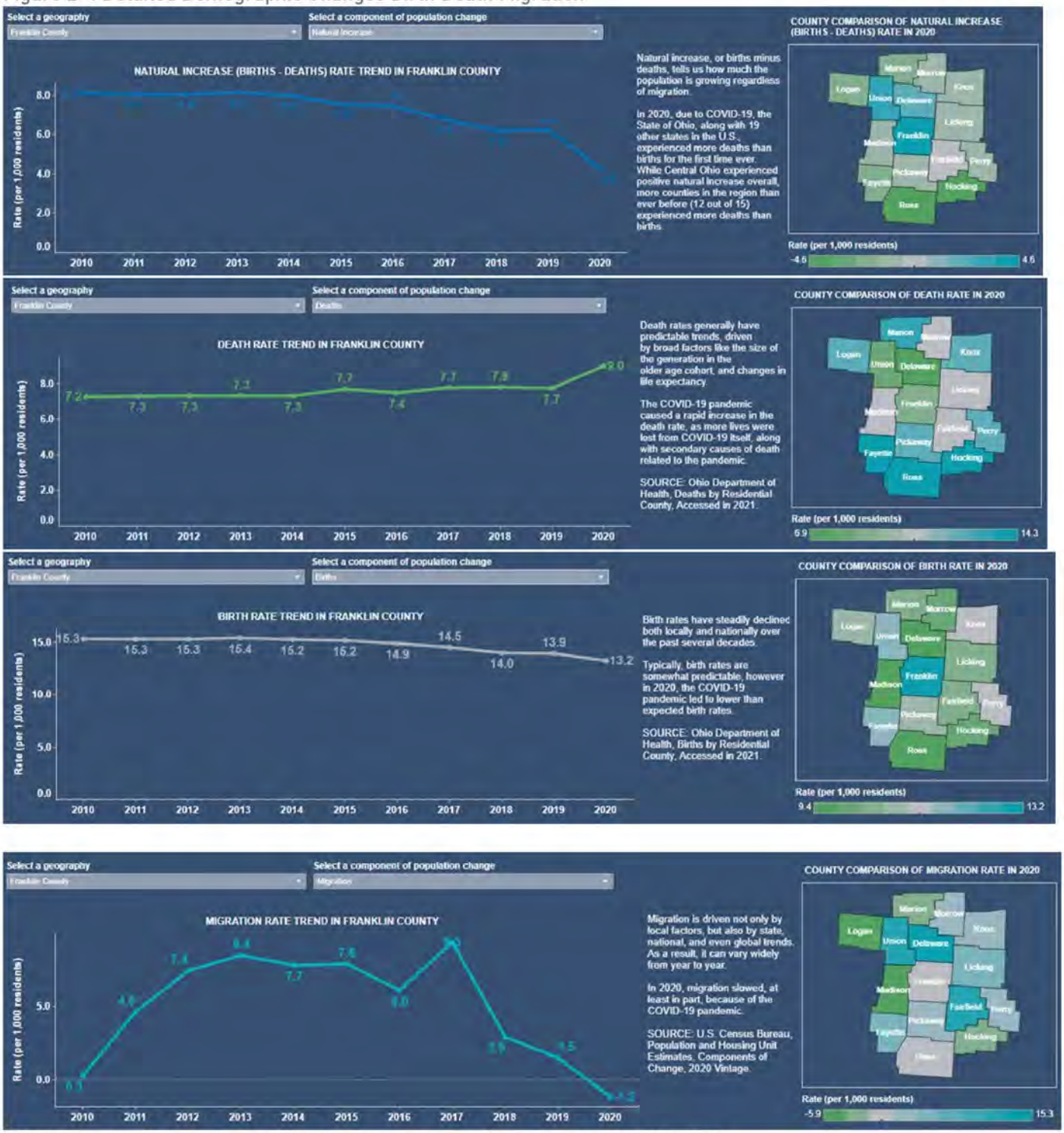
Demographic Trends

According to the MORPC Growth Projections report, the 2010s were the first-ever decade when as much growth came from migration as from births. In the 2010s, half of our migration was from residents moving here from overseas. The report further states that Central Ohio is expected to grow because of the strength of the region's economic development, an innovative corporate culture, access to relatively affordable housing, ease of commute, attractive downtown, and strong suburban communities.

Figure 2-4 Detailed Demographic Changes Birth Death Migration illustrates that the natural increase (births minus deaths) has been steadily declining. Growth is expected to occur by attracting people to Central Ohio with urban revitalization. Much of this migration growth is expected to be younger residents and only 20% of growth is expected to come from baby boomers aging into older adulthood. The overlapping preferences for development style and unit types among these groups are reflected in the rising demand for multifamily development. From 2010 to 2019, 58% of all new units built were multifamily, compared with 42% single family.

Some recent data may be unnaturally impacted by the 2018 recession and the COVID-19 pandemic. Some trends are not expected to be representative of future growth. Note for instance that a strong migration rate was interrupted in 2018 from a recession and further depressed in 2020 due to the pandemic. Despite some challenges with the recent trend data, MORPC predicts that the Central Ohio region will experience continued strong growth and will continue to make up an increasingly large share of both the states and the nation's populations.

Figure 2-4 Detailed Demographic Changes Birth Death Migration



MORPC Projection: Mid-Ohio Regional Planning Commissions Population Estimates Web 10Dec2022

Table 2-4 and 2-5 below further indicate the trend towards growth related to younger residents. Note that the growth rate of and only 20% of growth is expected to come from baby boomers aging into older adulthood. Although the population of baby boomers is expected to increase by 36%, this group only represents 12% of the total population. Other demographic growth trends mirror the anticipated 20% overall growth rate.

Table 2-4 SWACO Detailed Population Projections: Detailed Demographic Trends

Category	2021	2025	2030	2035	2040	2021 - 2040
Detailed Demographic Trends						
Group Quarters Population	30,863	32,853	34,606	36,150	37,510	22%
Household Population	1,383,836	1,471,521	1,548,088	1,475,468	1,663,084	20%
Households	539,024	573,771	604,383	631,352	655,112	22%
Housing Units	585,709	623,466	656,730	686,034	711,852	22%
Industrial Employment	143,141	149,682	155,564	161,742	168,484	18%
Labor Force	737,159	773,460	806,822	841,487	878,238	19%
Office Employment	355,583	371,833	386,445	401,791	418,540	18%
Other Employment	138,197	144,513	150,192	156,156	162,665	18%
Population Ages 18 - 64	869,230	906,052	943,676	986,961	1,032,657	19%
Population Ages 65 & older	164,218	193,169	213,268	221,802	223,118	36%
Population Ages under 18	314,755	335,891	354,735	370,372	382,787	22%
Retail Goods Employment	59,816	62,549	65,007	67,589	70,406	18%
Retail Services Employment	115,855	121,149	125,910	130,910	136,367	18%
Total Employment	812,592	849,725	883,118	918,188	956,462	18%
Workers	690,235	724,109	755,121	787,326	821,505	19%

Source: "MORPC Central Ohio Resource Hub" prepared by MORPC 2020

Table 2-5 Detailed Regional Population Projections: Housing Units Growth Profile

County	2021	2025	2030	2035	2040	2021 - 2040
Housing Units Growth Profile						
Franklin	585,709	623,466	656,730	686,034	711,852	22%
Delaware	82,681	88,125	93,739	98,759	103,250	25%
Licking	73,448	75,682	78,404	81,109	83,799	14%
Fairfield	63,558	66,120	68,454	70,346	71,881	13%
Ross	32,306	32,427	32,501	32,544	32,568	1%
Marion	27,365	27,360	27,360	27,360	27,360	0%
Knox	26,157	26,482	26,748	26,945	27,091	4%
Logan	23,385	23,382	23,379	23,377	23,375	0%
Union	23,408	25,202	26,749	27,958	28,902	23%
Pickaway	22,521	22,946	23,492	24,051	24,623	9%
Madison	16,522	16,878	17,306	17,725	18,137	10%
Perry	15,273	15,296	15,308	15,313	15,316	0%
Morrow	14,261	14,274	14,283	14,288	14,292	0%
Hocking	13,358	13,382	13,393	13,399	13,401	0%
Fayette	12,818	12,844	12,846	12,846	12,846	0%

Source: "MORPC Central Ohio Resource Hub" prepared by MORPC 2020

Implications for Solid Waste Management

The amount of solid waste generated is usually closely related to population. SWACO can assume that the waste generation denominator will increase over 20% during the planning period, thereby increasing the need for aggressive reduction strategies to accomplish the Authority's recycling, reduction, and reuse goals particularly with food waste, business waste, and hard to manage waste.

SWACO has defined plans to accommodate the population and business growth in the Appendices. Financial

details are provided in Appendix 9 – Financial Analysis, and programming is defined in Appendix 7, Diversion Analysis. The residential, commercial, and industrial sectors are further defined in Appendices 1 to 3.

C. PROFILE OF COMMERCIAL AND INSTITUTIONAL SECTOR

The District has many institutions and public sector employees since Columbus is the Capital of state government. These state government departments and offices also mean that Franklin County and Central Ohio contain many businesses which provide support services for scientific and technical areas of expertise.

Figure 2-7 lists the major employers in Franklin County including The Ohio State University that leads the District with a total employment of over 33,000. Ohio Health, headquartered in the District, has over 23,000 employees and the State of Ohio has over 21,000 employees. Financial institutions JP Morgan/Chase and Huntington are also major players. The insurance industry is represented by Nationwide that employs a staff of over 12,000. Retails giants like Amazon and L Brands are also located within the District.

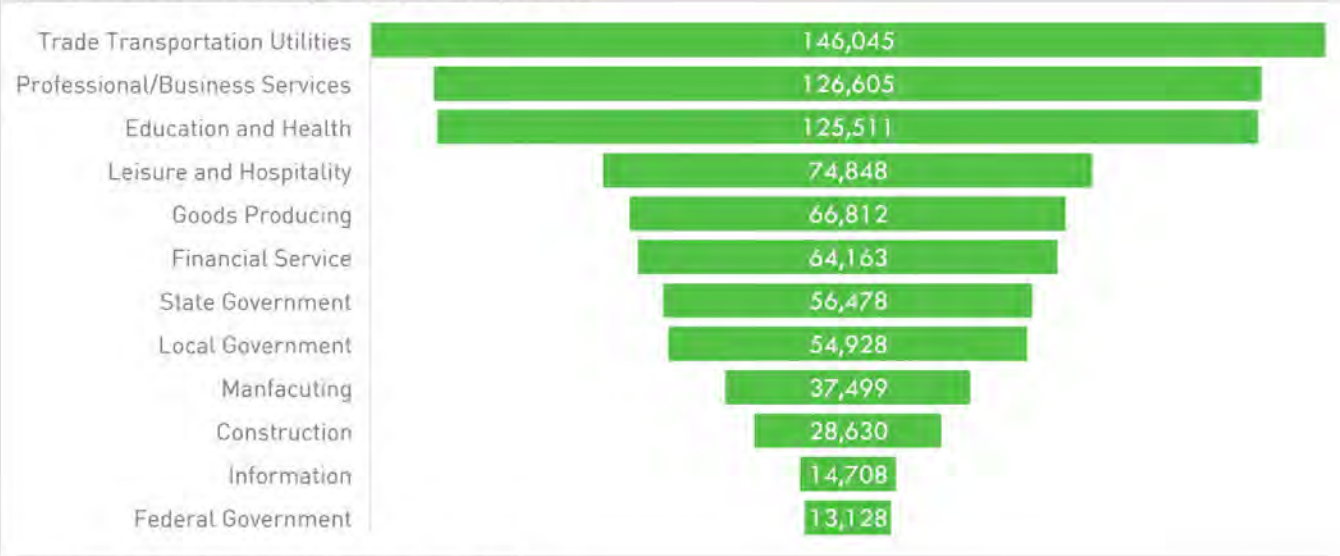
As illustrated in Table 2-6, Employment Growth by Central Ohio Region, Franklin County is expected to enjoy 17% growth in total jobs over the planning period eclipsed only by Delaware County. Note that Union County is not considered as part of the Central Ohio region as defined by MORPC and is therefore not included in the Figures. Union County is home to North American Honda and is expected to experience tremendous growth as a result of planned expansions.

Table 2-6 Employment Growth by Central Ohio Region: Total Jobs

County	2021	2025	2030	2035	2040	2021 - 2040
Total Jobs						
Franklin	819,355	849,725	883,118	918,188	956,462	17%
Delaware	88,071	92,085	96,029	99,878	104,042	18%
Fairfield	45,939	46,647	47,348	48,341	49,735	8%
Fayette	12,450	12,263	12,180	12,149	12,199	-2%
Hocking	8,220	8,092	7,980	7,975	8,071	-2%
Knox	24,094	23,857	23,684	23,710	24,043	0%
Licking	66,828	67,415	68,664	70,608	73,316	10%
Logan	20,558	20,266	20,020	19,980	20,206	-2%
Madison	17,936	18,218	18,594	19,056	19,646	10%
Marion	25,815	25,301	25,000	25,005	25,211	-2%
Morrow	7,331	7,279	7,198	7,143	7,170	-2%
Perry	7,469	7,280	7,136	7,093	7,151	-4%
Pickaway	17,533	17,623	17,784	18,056	18,523	6%
Ross	30,083	29,651	29,345	29,233	29,426	-2%

Figure 2-7 illustrates Franklin County employment by sector. This report identifies that "Trade, Transportation and Utilities" occupied the largest segment of the work force in Franklin County, followed closely by "Professional and Business Services", then the "Education and Health" sector. This independent source confirms the similar research conducted by MORPC.

Figure 2-5 Franklin County Employment by Sector



Source: State of Ohio Office of Research web 10Dec2022

Table 2-7 Shows the Franklin County businesses, industries, and institutions that have employment of more than 5000 full time employees.

Company/Organization	Sector	Local Full-time Employment
Ohio State University*	Education	33,335
OhioHealth*	Health Care	23,836
The State of Ohio*	Government	21,342
JPMorgan Chase	Financial Activities	20,316
Nationwide*	Financial Activities	12,862
Nationwide Children's Hospital*	Health Care	10,875
United States Government	Government	10,800
City of Columbus*	Government	8,963
Mount Carmel Health System*	Health Care	8,776
L Brands*	Retail Trade	8,616
Columbus Public Schools*	Education	8,611
Franklin County*	Government	6,048
Kroger Company	Retail Trade	5,417
Cardinal Health*	Health Care	5,075
Huntington Bancshares Inc.*	Financial Activities	4,921
Amazon	Retail Trade	4,828

Source: Composite information from multiple sources including Columbus Chamber of Commerce, Franklin County's 2019 Comprehensive Annual Financial Report, the City of Columbus Economic Development Department, and the One Columbus 2020 Factbook. Figure Asterisks denote companies headquartered locally.

D. PROFILE OF INDUSTRIAL SECTOR

According to One Columbus and JobsOhio, the Central Ohio Region represents the future of new manufacturing. The District is home to diverse manufacturing companies that span industries from electronics to machinery, materials, aerospace, and consumer goods. Some of the world's largest brands manufacture products in the

central Ohio Region including Scotts Miracle-Gro, Worthington Industries, and Abbott. The region is home to over 1,700 manufacturing establishments with over 90,000 employees, resulting in more than $15 billion in annual economic output, although it should be noted that the region extends beyond SWACO's jurisdictional boundaries. SWACO's jurisdiction is also home to the corporate headquarters of several large manufacturing firms, although their manufacturing facilities may be outside of our jurisdiction. The State of Ohio Office of Research verifies these claims by identifying an employment number of over 100,000 in the manufacturing and goods producing sectors as illustrated in Figure 2-C.2 Employment by Sector.

According to One Columbus and JobsOhio, the Columbus Region also offers a steady pipeline of young talent, including numerous career and technical training centers that partner with industry to provide the training and skills needed for the modern manufacturer – cultivating talent for your plant floor and engineering office.

The Ohio State University is also educating the next generation of engineers through its top ranked bachelor's and graduate programs. OSU also recently announced the creation of the HAMMER advanced manufacturing research center.

As illustrated in Figure 2-8, Franklin County is also expected to enjoy 17% growth over the planning period in industrial sector jobs.

Table 2-8 Industrial Jobs

County	2021	2025	2030	2035	2040	2021 - 2040
Industrial Jobs related to industrial industries and/or land uses (e.g. warehousing, manufacturing)						
Franklin	144,332	149,682	155,564	161,742	168,484	17%
Licking	23,227	23,431	23,865	24,541	25,482	10%
Union	12,106	12,597	13,013	13,436	13,925	15%
Delaware	10,916	11,414	11,902	12,380	12,896	18%
Madison	8,452	8,584	8,761	8,979	9,257	10%
Fairfield	8,114	8,239	8,363	8,538	8,784	8%
Pickaway	5,050	5,076	5,122	5,200	5,335	6%

Source: "MORPC Central Ohio Resource Hub" prepared by MORPC 2020

Industries by Type of Manufacturing

Manufacturing in the District is diverse and includes numerous industries, feed stocks, and markets from high tech to consumer products. As an illustration of this diversity, a partial list of the largest manufacturers in Franklin County include:

- Scotts Miracle- Gro
  Lawn products

- Worthington Industries
  High-pressure composites, steel shells, and other precision metal products.

- Stanley Electric
  Control panels, heated seat controls, audio equipment and sensors.

- Abbott Laboratories
  Diagnostic testing and cardiovascular monitor technology.

- Mettler Toledo
  Laboratory weighing tools, industrial scales and analytical instruments.

- Vertiv
  Digital infrastructure, heating and cooling products, power systems and desktop software.

Table H-3.1 Largest Manufacturers in Central Ohio Region: Employees

Company	Full-time Employees
Honda	11,077
Whirlpool Corporation	2,519
Abbott Nutrition	2,055
TS Tech	1,789
Worthington Industries	1,625
Ariel Corporation	1,500
Stanley Electric	1,385
Scotts Miracle-Grow	1,100
Hikma	1,026
Owens Corning	1,000
Vertiv	921
Lancaster Colony Corporation	892
Mars Petcare	836
Mettler-Toledo	800
The Oneida Group	731
Cardington Yutaka Technologies	725
Jefferson Industries Corporation	648
Anheuser-Busch InBev	640
Anomatic Corporation	632
Ashland	595

Source: Composite information from multiple sources including Columbus Chamber of Commerce, Franklin County's 2019 Comprehensive Annual Financial Report, the City of Columbus Economic Development Department, and the One Columbus 2020 Factbook

E. OTHER CHARACTERISTICS

The most unique characteristic of the District is the presence of The Ohio State University and the seat of state government for Ohio.

The Ohio State University

The main campus for OSU is located within the City of Columbus and the current enrollment is 62,000 students. These 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 has aggressive sustainability plans as a part of their overall strategic vision. OSU intends to become a "world-leading" example of reducing resource consumption, neutralizing carbon emissions and minimizing waste. Goals include:

- Achieve carbon neutrality by 2050 per Presidents' Climate Leadership Commitment.
- Increase the energy efficiency of the university per building square foot by 25% by 2025.
- Reduce potable water consumption by 10% per capita every five years, resetting baseline every five years.
- Increase Ecosystem Services Index score to 85% by 2025.
- Reduce carbon footprint of the university fleet per thousand miles traveled by 25% by 2025.
- Achieve zero waste by 2025 by diverting 90% of waste away from landfills.

- Increase production and purchase of locally and sustainably sourced food to 40% by 2025.
- Develop university-wide standards for targeted environmentally preferred products and fully implement preferable products and services by 2025.

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 technical and programming assistance to any organization or group which chooses to hold its own "zero waste" event. SWACO regularly partners with OSU on their waste diversion initiatives, including supporting various projects through our Community Waste Reduction Grant program. SWACO will continue to support these model sustainability practices and will continue the partnerships to assist the university in achieving their overall climate action plan.

Ohio State Government

As illustrated in Figure 2-5, the State of Ohio employs over 21,000 employees directly and over 56,000 employees including allied agencies. These employees are employed by a variety of agencies and organizations located in different buildings, primarily in downtown Columbus. Some of these agencies (such as Ohio EPA), have long-standing, successful waste diversion programs. Others do not have nearly as high performing recycling programs in place. In 2019 SWACO began a project with the Department of Administrative Services (DAS) to help them evaluate and improve the recycling programs in place in the Rhodes Tower, which houses DAS and a number of other state agencies. Unfortunately, that project was permanently put on hold after the Covid-19 pandemic resulted in a sudden and dramatic shift to remote working by most of the state agencies located in the Tower. This project remains on hold while DAS is focused on other priorities.

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 (2021), 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 2021 (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.

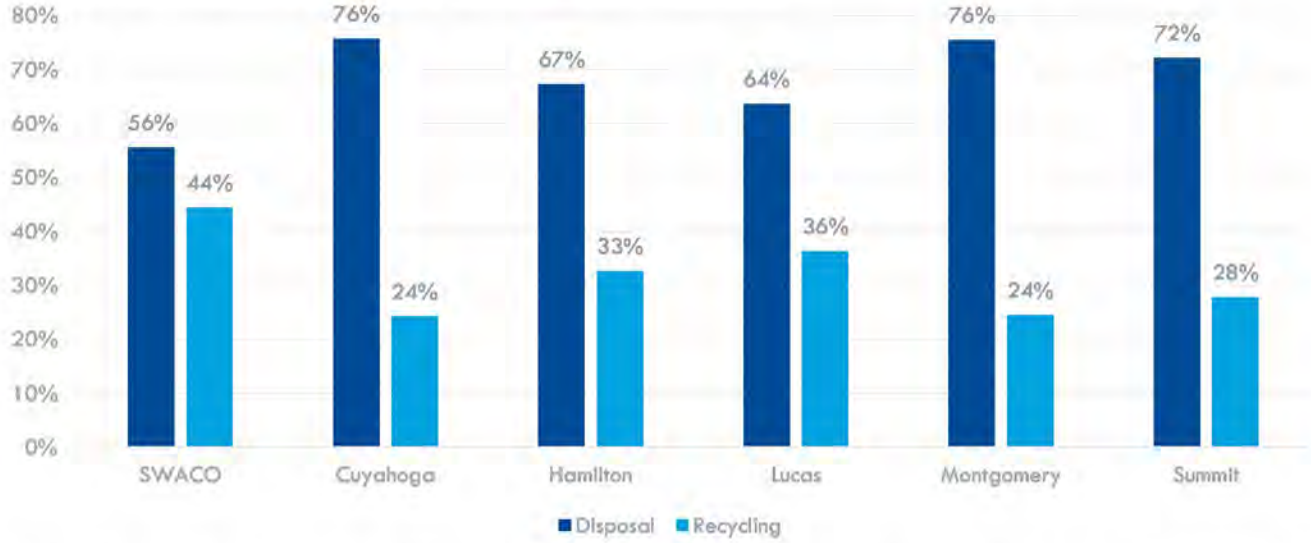
Table 3-1. Solid Waste Generated in the Reference Year

Type of Waste	Quantity Generated (tons)	Percentage
Residential/ Commercial	2,220,204	86%
Industrial	362,340	14%
Excluded	0	0%
Total	2,582,545	100%

Residential/Commercial Waste Generated in the Reference Year

Disposal comprises a 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, although the difference in SWACO's case, is much less that the other solid waste districts. For these solid waste districts, including SWACO, disposal ranges from 56% to 76% of total generation while recycling is estimated at 24% to 44%.

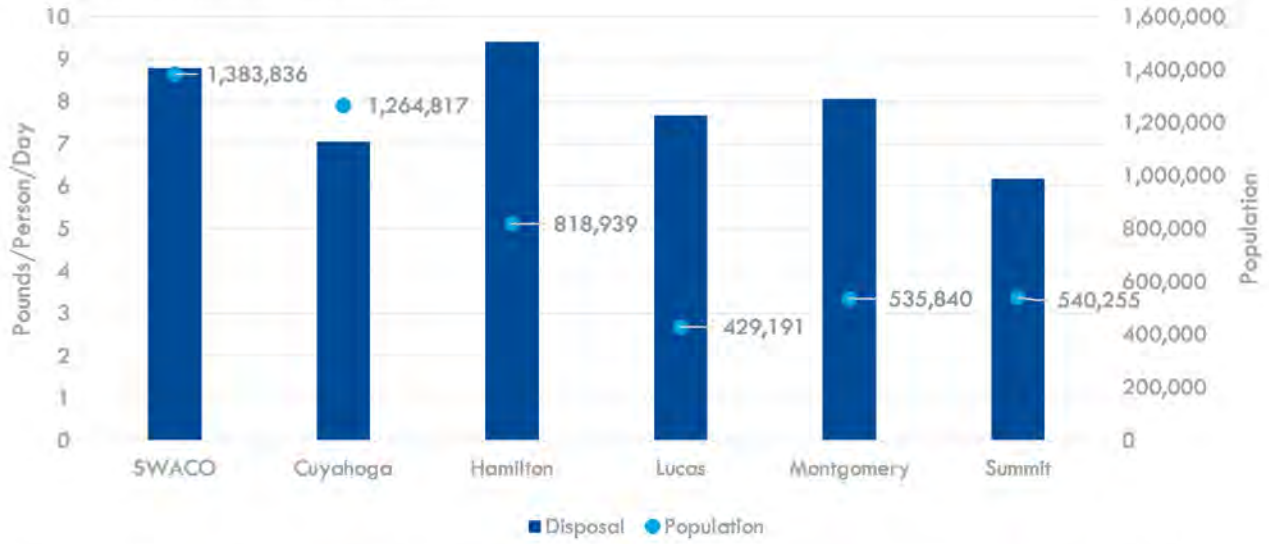
Figure 3-1 R/C Disposal and Recycling as Percentage of Generation



In terms of the R/C generation rate during the reference year 2021, SWACO residents, commercial businesses, and institutions produced daily amounts of waste was at the high end of the range compared to other Ohio urban SWMDs, which range from a low of 6.18 to a high of 9.4 pounds per person per day (PPD), with an average of 7.8

PPD. Figure 3-2 shows that the R/C generation rate for SWACO was approximately 8.8 pounds per person per day (PPD) in 2021.

Figure 3-2 R/C Generation Rates: 2021



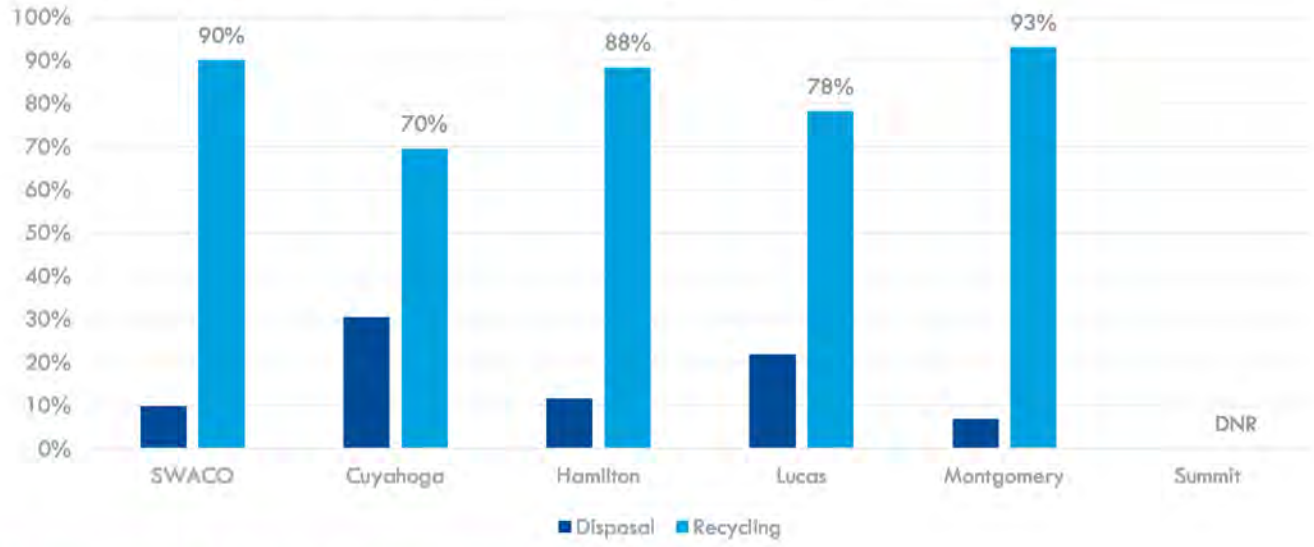
The statewide residential/commercial generation for 2021 was approximately 7.1 PPD. The national R/C generation rate according to the most recent publication by U.S. EPA in 2018 at 4.9 PPD, although this figure is historically known to vary considerably from State of Ohio estimates due to a significantly different methodology that is used to calculate the figure.

Differences in waste generation between solid waste management districts may be a reflection of differences in characteristics of the districts. For example, a district with unusually strong employment and economic growth may generate more waste from both the residential and commercial sectors. SWACO's economy has proven to be very diverse, strong and resilient for a long period of time, and continues to be so today. However, waste generation is also recognized as a difficult figure to calculate accurately, and an even more difficult figure to compare from one solid waste management district to another due to the fact that the calculation is highly dependent on gathering accurate recycling data. Recycling data is difficult to gather due to the fact that there is no statewide requirement for reporting this data. This is in stark contrast to disposal data, which is required to be reported. Therefore, differences in generation calculations between solid waste management districts is often a reflection of differences in available recycling data, not a true reflection of differences in generation.

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

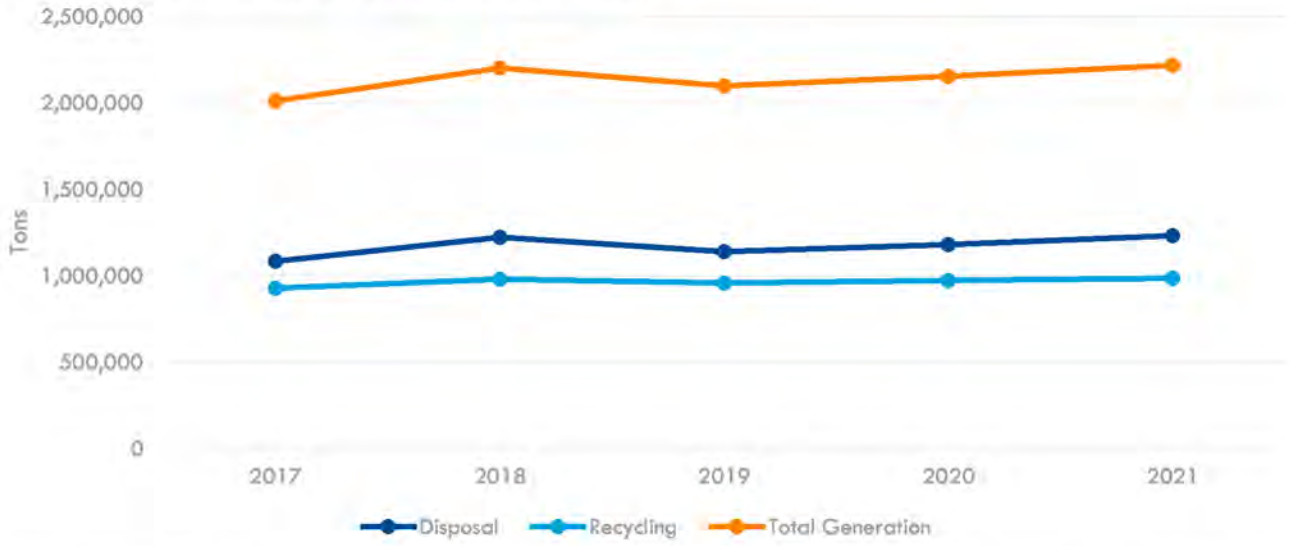


B. HISTORICAL WASTE GENERATED

Historical Residential/Commercial Waste Generated

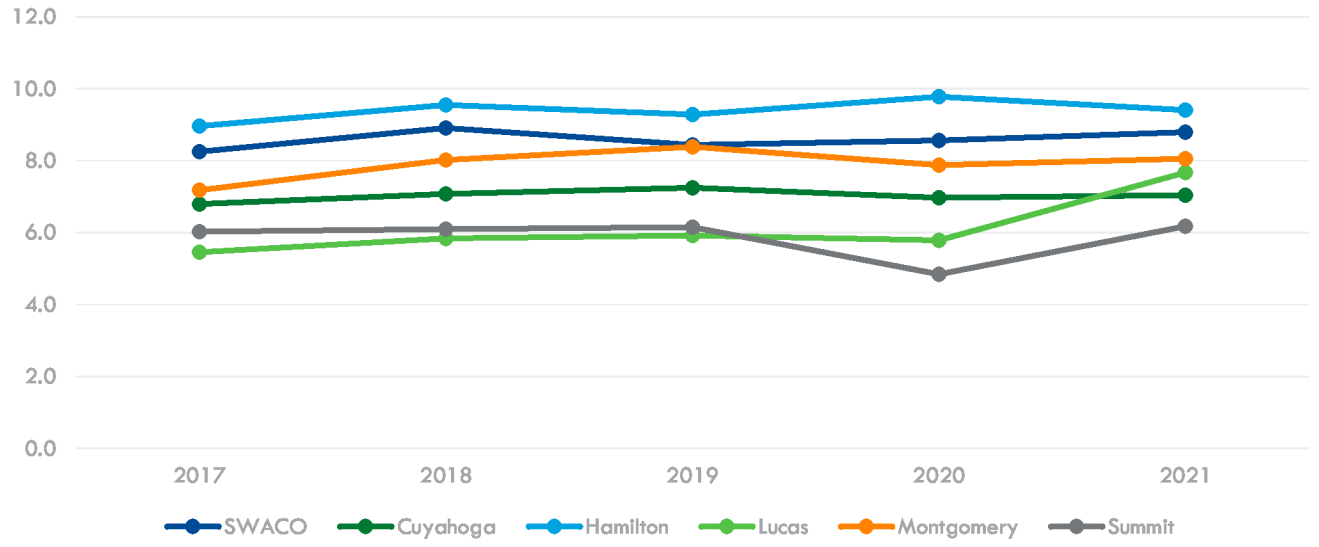
Although it has fluctuated slightly over the past five years, the generation of R/C waste in the District has generally increased since 2017. Disposal has increased by nearly 150,000 tons while recycling has increased almost 60,000 tons during this time period, as presented in Figure 3-4. These trends are consistent with other urban SWMDs in Ohio.

Figure 3-4 SWACO Historical R/C Generation: 2017 – 2021



In general, the R/C waste generation rates for urban SWMDs in Ohio have also stayed about the same during the last 5 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 relatively stagnant generation rates.

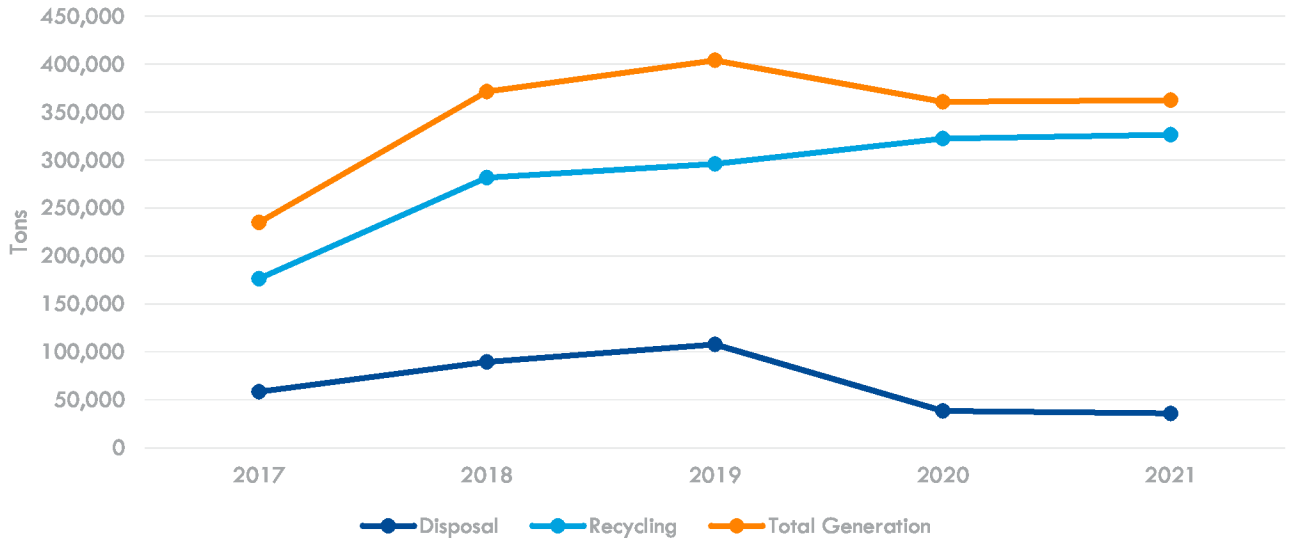
Figure 3-5 R/C Generation Rates: 2017 – 2021



Historical Industrial Waste Generated

The generation of industrial waste during the past five years has fluctuated to a much greater extent than the R/C generation. As illustrated in Figure 3-6, the largest fluctuation in industrial generation has been due to increases in the amount of materials recycled rather than disposed. This is likely due to both an increase in waste diversion efforts in the industrial sector and improved data collection from SWACO.

Figure 3-6 SWACO Historical Industrial Generation: 2017 – 2021



Sources: Federal Reserve Bank of St. Louis

- Gross Domestic Product: All Industries in Franklin County, OH: https://alfred.stlouisfed.org/graph/?g=Zh17
- Unemployment Rate in Franklin County, OH: https://fred.stlouisfed.org/graph/?g=Zh1v

C. WASTE GENERATION PROJECTIONS

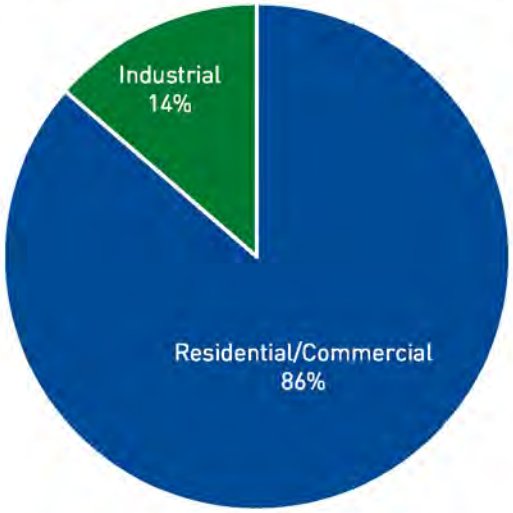
Table 3-2 demonstrates that waste generation within the District is expected to change moderately during the first six years of the planning period. From 2024 to 2029, total waste generation is projected to increase by 13%, or about 2.4% a year.

Table 3-2 Waste Generation Projections

Year	Residential/Commercial Waste (tons)	Industrial Waste (tons)	Excluded Waste (tons)	Total Waste (tons)
2024	2,371,838	374,941	0	2,746,779
2025	2,426,185	383,555	0	2,809,740
2026	2,488,235	392,388	0	2,880,623
2027	2,543,853	401,446	0	2,945,299
2028	2,607,500	410,734	0	3,018,234
2029	2,677,760	429,782	0	3,107,542

Figure 3-8 shows the percentage of solid waste generated in the residential/commercial versus industrial sectors for the first year of the planning period (2024). 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, and the sum of the disposal and waste reduction and recycling projections comprise the total waste generation projections.

Figure 3-8 R/C vs. Industrial Waste Generation, 2024



Residential/Commercial Waste Projections

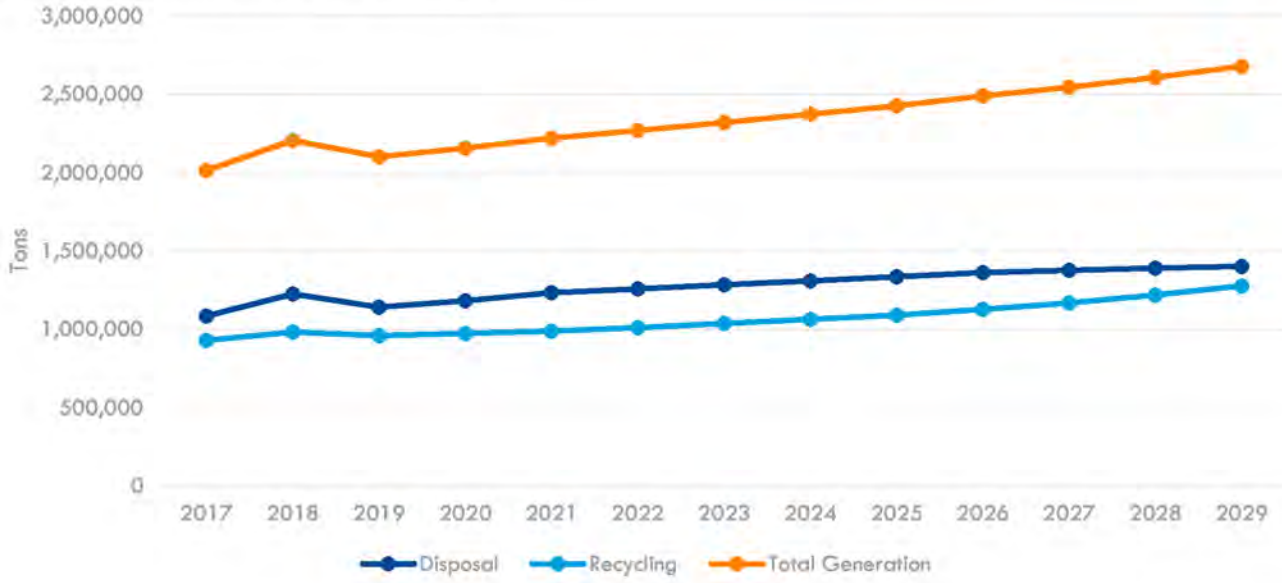
As stated above, projections for the R/C sector were developed for disposal and recycling in order to determine total generation. Figure 3-4 shows that disposal amounts for the R/C sector have increased moderately over the past five years, and SWACO believes that this trend will continue through at least the first six years of the planning period (2024-2029) See Figure 3-9 for this projection.

Data for years 2019 and 2020 shows that SWACO's residential/commercial disposal decreased in 2019 and, surprisingly, increased very slightly in 2020, despite the Covid-19 stay-at-home order put in place in 2020 and the widespread impacts of the pandemic on commercial businesses. . By 2021, residential/commercial disposal had rebounded and exceeded 2018 levels. This consistent trend of increasing disposal is probably a reflection of Central Ohio's extremely strong and consistent economy and consistent population growth.
As a result, SWACO believes that slightly increasing 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 continue to encourage improvements to community curbside recycling collection programs through changes such as the use of rolling carts, economic incentives such as volume-based systems, and projections for the City of Columbus changing to weekly from bi-weekly recycling collection in summer of 2023. These changes

are expected to result in increases in collection 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 and increased support for food waste composting programs, which is expected to result in substantial amounts of yard waste and other organic materials recovered during the planning period. Finally, SWACO is also placing greater emphasis on programs oriented toward the commercial sector, which are also anticipated to see greater commercial sector recycling 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.)

Figure 3-9 R/C Waste Generation: 2017 – 2029



Industrial Waste Projections

Waste generation in the industrial sector, which constitutes only about 14% of the overall generation of waste in the Authority, 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 within the District has generally trended up from 2017 to 2021, with a notable exception in 2020, probably due to the Covid-19 pandemic.

This decline in generation was entirely the result of decreased industrial disposal in 2020, which did not rebound in 2021, but continued to decline slightly . 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 amount of industrial sector recycling will increase over the first five years of the planning period, then remain constant from 2030 until the end of the planning period.
- Disposal: It is assumed that the tonnage reported for 2021 (35,920 tons) will continue throughout the planning period.

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 (2021).

Chapter 4: Waste Management Methods

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

As the region's solid waste planning agency, SWACO must have adequate facilities to manage the waste the District will generate. This may include landfills, transfer facilities, compost facilities, waste-to-energy 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), disposal through 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 waste 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.

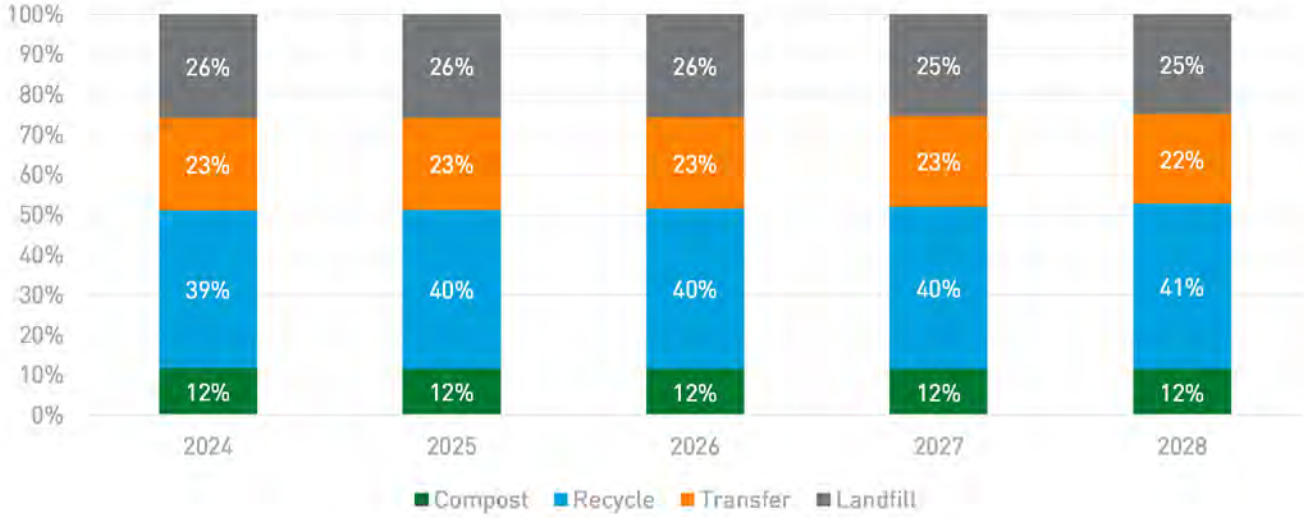
Table 4-1. Methods for Managing Waste (Tons)

Year	Total Waste[1]	Recycle[2]	Compost	Transfer[3]	Landfill[3]
2021	2,600,596	1,036,062	277,224	618,634	668,676
2024	2,746,779	1,401,095	322,701	636,437	708,595
2025	2,809,740	1,437,641	328,327	648,875	722,443
2026	2,880,623	1,481,513	334,919	661,564	736,570
2027	2,945,299	1,532,218	341,859	668,036	743,777
2028	3,018,234	1,590,827	348,603	674,574	751,056

[1] The "Total Waste " totals equal the sum of the other four columns.
[2] "Recycled" equals the total amount recycled minus the tons of materials composted.
[3] The sum of "Transferred" and "Landfilled" equals the total amount disposed.

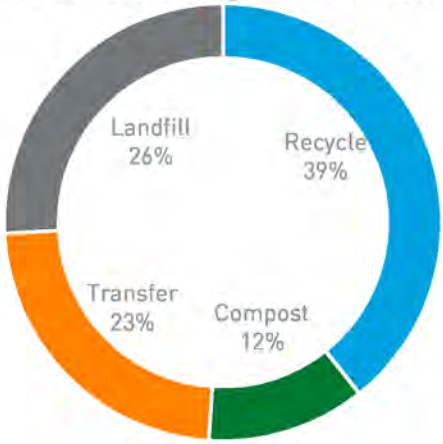
While SWACO will be implementing programs focused on food waste diversion and commercial recycling, in order to be conservative for purposes of the Plan the proportion of each method used to manage the District's materials stream during the first six years of the planning period is not projected to change 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 on the right in a pie chart for year 2024. The total amount disposed (landfilled plus transferred) is expected to comprise 53% of total generation in year 2024.

Figure 4-2. Waste Management Methods: 2024



B. PROFILE OF SOLID WASTE INFRASTRUCTURE AND SOLID WASTE FACILITIES USED IN THE REFERENCE YEAR

Landfill Facilities

All of the landfills which received waste directly from the District (without first being processed at a transfer station) during the reference year of 2021 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 (96.4%). 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		Waste Accepted from SWMD (tons)	Percent of all SWMD Waste Disposed	Remaining Capacity (years)
	County	State			
In-District					
SWACO Franklin County Sanitary Landfill	Franklin	OH	645,748	96.4%	46
Out-of-District					
Pine Grove Regional Facility	Fairfield	OH	21,403	3.2%	88
Hancock County Landfill	Hancock	OH	1	0.0%	24
American Landfill, Inc.	Stark	OH	2	0.0%	74
Suburban Landfill Inc	Perry	OH	2,355	0.4%	77
Crawford County Landfill	Crawford	OH	132	0.0%	23
Evergreen Recycling & Disposal	Wood	OH	13	0.0%	33
Athens-Hocking Landfill	Athens	OH	3	0.0%	48
Kimble Sanitary Landfill	Tuscarawas	OH	71	0.0%	20
Stony Hollow Landfill Inc	Montgomery	OH	16	0.0%	4
Out-of-State					
Caldwell Landfill	Shelby	IN	0	0.0%	46
National Serv-All Landfill	Allen	IN	6	0.0%	34
Total			669,751	100%	517

Transfer Facilities

The transfer facilities receiving waste from the District during the reference year (2021) are listed in Table 4-3. Facilities located within Franklin County processed 100% of the transferred waste, while those facilities owned and operated by SWACO (the Morse Road and the Jackson Pike Transfer Facility) processed 93% 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 98% of the District's waste for disposal in 2021.

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

Facility Name	Location		Waste Accepted from District (tons)	Percent of all District Waste Transferred	Landfill Where Waste was Taken to be Disposed
	County	State			
In-District					
SWACO Jackson Pike Transfer Facility	Franklin	OH	290,128	47%	SWACO Franklin County Sanitary Landfill
SWACO Morse Road Transfer Facility	Franklin	OH	288,013	47%	SWACO Franklin County Sanitary Landfill
Republic Services Inc Reynolds Ave Transfer Facility	Franklin	OH	11,647	2%	SWACO Franklin County Sanitary Landfill
Waste Management of Ohio Transfer and Recycling	Franklin	OH	9,462	2%	SWACO Franklin County Sanitary Landfill
Local Waste Services Inc	Franklin	OH	19,356	3%	SWACO Franklin County Sanitary Landfill
Rumpke Waste Inc Columbus Transfer & Recycling Facility	Franklin	OH	28	0%	SWACO Franklin County Sanitary Landfill
Out-of-District					
None			0	0%	
Out-of-State					
None				0%	
Total			618,634	100%	

Composting Facilities

Table 4-4 shows the composting facilities which received yard waste and food waste from the District during the reference year (2021). Four facilities located within the District processed more than 93% of the total materials composted.

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

Facility Name	Location	Location (County)	Material Composted (tons)	Percent of all Material Composted
In District				
KBCO Frank Road Compost Facility	711 Frank Road, Columbus	Franklin	39,513	14.3%
Kurtz Bros Inc	6279 Houchard Road, Amlin	Franklin	18,619	6.7%
Kurtz Bros Inc	6055 Westerville Road, Westerville	Franklin	51,773	18.7%
Ohio Mulch Supply Inc	2140 Advance Avenue, Columbus	Franklin	149,756	54.0%
Out-of-District				
London Correctional Institution	1580 Ohio 56, London	Madison	428	0.2%
Price Farms Organics Ltd	4838 Warrensburg Road, Delaware	Delaware	3,941	1.4%
Garick LLC Paygro Division	11000 Huntington Road, South Charleston	Clark	7	0.0%
Kurtz Brothers-Brookside	2409 Johnstown-Alexandria Road, Alexandria	Licking	9,455	3.4%
McCullough's Landscaping and Nursery, LLC	14401 Jug Street, New Albany	Licking	1,010	0.4%
Number One Landscape	3775 Ridge Rd, Medina	Medina	51	0.0%
Park Enterprise Construction Co Inc	560 Barks Road West, Marion	Marion	33	0.0%
Hope Timber Pallet & Recycling	141 Union St, Newark	Licking	2,640	1.0%
Total			277,224	100%

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 data published by Ohio EPA and SWACO's survey efforts. Rumpke Waste Recycling, in Franklin County, received and processed the highest tonnage of mixed recyclables from SWACO in 2021, while Rumpke Dayton glass plant received and processed the second highest total amount. These two facilities combined account for about 99% of the total material reported to be processed. There are several other processing facilities located in SWACO's jurisdiction that also operated and processed materials. These facilities focus primarily on commercial materials (cardboard and paper). However, they typically do not report to Ohio EPA or SWACO surveys.

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

Name of Facility	Location		Facility Type	Recyclables Accepted from District (tons)
	County	State		
In-District				
Rumpke Waste Recycling - Columbus: Residential	Franklin	OH	MRF	59,378
Rumpke Waste Recycling - Columbus: Commercial	Franklin	OH	MRF	20,324
Out-of-District				
Rumpke Center City Recycling - Hamilton County: Commercial	Hamilton	OH	MRF	685
Rumpke Recycling - Dayton: Residential	Montgomery	OH	MRF	1
Dayton Glass Plant: Commercial	Montgomery	OH	MRF	19,370
Rumpke - Chillicothe: Commercial	Ross	OH	MRF	92
Waste Management - Akron MRF: Residential	Summit	OH	MRF	133
Waste Management - Akron MRF: Commercial	Summit	OH	MRF	64
Out-of-State				
None				
Total				100,048

Other Waste Management

A small amount of waste was transported to a treatment facility in Indiana during 2021 (less than 3,000 tons). This facility provides a variety of processing services, but the primary management method at the facility is incineration.

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 more than adequate capacity for SWACO's needs.

Landfill Capacity

In 2021, the Franklin County Sanitary Landfill was estimated to have approximately 46 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.

Composting Capacity

The amount of yard waste materials composted from throughout the planning period is not expected to change significantly, and it is anticipated that the existing composting facilities within the District will have adequate capacity for yard waste generated from the residential and commercial sectors throughout the planning period. However, in 2019 SWACO conducted a waste characterization study that documented that food scraps constitute the single largest category of material types received at the landfill from both the residential and commercial sectors, constituting about 15% of what is received at the landfill, at over 168,000 tons disposed annually. While over 9,000 tons of food waste from SWACO's jurisdiction was reported to be composted to Ohio EPA in the reference year, all of this material was hauled to composting facilities outside of SWACO's jurisdiction. There is currently not a single composing facility within SWACO's jurisdiction that is authorized to accept food waste for composting, and this is recognized as a significant barrier to expanding food waste diversion within the District due to the expense of hauling the material long distances to a composting facilities that are authorized to accept it.

As a result, SWACO has been undertaking a serious and in-depth evaluation of the need to establish a Class II composting facility within our jurisdiction to provide adequate capacity to process this material. This evaluation will continue, with the intent of solving this capacity problem within the first three years of Plan implementation. One primary option currently under consideration is the establishment of a composting facility with sufficient capacity to process the food waste material generated in the District through a public-private partnership, with a private contractor designing and operating the facility. While this is not the only option that could be pursued by SWACO and under evaluation, for purposes of the Plan it is anticipated that such a facility will be constructed and in operation by the end of 2025. However, this is not the only solution under consideration, and SWACO may determine that an alternative solution is preferable to pursue during the planning period.

Recycling Capacity

Processing capacity for recyclables is also expected to be more than sufficient for the District throughout the planning period. Of particular note, in 2022 Rumpke announced the construction of a new 200,000 square foot, $50 million dollar material recovery facility close to where their current facility is located in Columbus. The new facility is expected to be one of the largest in North America with adequate capacity for the central Ohio region for the next 30 years. It is planned to open in 2024.

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.[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 Transfer Facility, and the Jackson Pike Transfer Facility. 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 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

[1] 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.)

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.

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

Name of Facility	Location		Facility Type
	County	State	
In-District			
Franklin Co. Sanitary Landfill	Franklin	OH	MSW Landfill
SWACO Morse Road Transfer Facility	Franklin	OH	Transfer Facility
SWACO Jackson Pike Transfer Facility	Franklin	OH	Transfer Facility
Out-of-District			
None	Ohio		
Out-of-State			
None			

Chapter 5: Waste Reduction and Recycling

Ohio Revised Code (ORC) 3734.53 and Ohio Administrative Code (OAC) Rule 3745-27-90 require SWACO to provide programs and services to achieve reduction and recycling goals established in the state solid waste management plan. SWACO uses a combination of best practices to provide these programs with some programs directly provided by the District and some programs provided by private companies and non-profit organizations some cases, SWACO may act as a facilitator or intermediary between the entity providing the service and the party receiving the service, or may provide contractual or funding support for the services provided.

In order to achieve Ohio EPA State Plan goals, SWACO is required to ensure that a wide variety of stakeholders have access to reduction and recycling programs. These stakeholders include residents, businesses, institutions, schools, and community leaders. These programs and services collectively represent the SWMD's strategy for furthering reduction and recycling in its jurisdiction.

As part of the development of this solid waste management plan, Ohio EPA requires that the SWACO Board perform a strategic, in-depth review of the existing programs and services, recycling infrastructure, recovery efforts, and finances. The Board must then draw conclusions about the strengths and weaknesses of SWACO's programs and services, outstanding needs, and available (or needed) resources.

The final analysis is described in Appendix I, which includes the list of requisite actions and programs. Each of the programs was used in the determination of the impact on the waste stream to ensure that the District was in compliance with State Plan Goals.

Section A of this Chapter identifies the priorities that SWACO will pursue during the period covered by this Plan. Section B provides a brief description of each program that will be implemented. Section C is a summary of waste reduction and diversion rates for residential/commercial, industrial, and overall impact. Appendix I provides detailed descriptions of all programs and services available to residents and businesses.

A. PROGRAM PRIORITIES

SWACO's 75% Diversion Goal

In 2018, SWACO established an internal goal of diverting 75% of the waste from the landfill by 2032. This ambitious goal has focused SWACO ever since it was established. In 2021 SWACO diverted more than half (51%) of the waste stream materials from the landfill. However, based on a waste characterization study conducted in 2019 by SWACO, 41% of the currently landfilled materials have the potential to be reused, recycled, or composted through programs, services, and processing that are available today, and an additional 35% has the potential to be diverted with programs, services and processing that could be made available in the future. This 75% diversion goal will continue to be SWACO's highest priority as it implements this solid waste management plan.

In order to meet the 75% waste diversion goal, SWACO already implements a very comprehensive set of programs, and continuous improvement and expansion of these programs will be important to make progress towards the 75% goal. Operating under a philosophy of continuous improvement, SWACO will continue to conduct research, benchmark our programs against others in the field, and modify, improve and expand these programs on an ongoing basis.

While we believe that we have been able to develop a strong set of programs, it is equally clear that in order to meet the 75% waste diversion goal by 2032, creative and forward-thinking new programs will also be needed. SWACO will not be developing these new programs alone. We currently collaborate with our local communities and dozens of local, state, and national partners that are committed to diverting waste from landfill disposal, and

their continued partnership will be important in helping to assist in piloting and expanding strategies and alternative management options for all of the recoverable materials in the waste stream.

SWACO Current Programs and Services

Community Programs
- Community Consortiums & Contract Assistance
- Community Recycling Cart Initiative
- Recycle Right Educational Programing
- Engagement, Education, Presentations and Outreach
- E-Waste Program
- Annual Community Data Collection

Grant Programs
- Community Waste Reduction Grant
- Event Waste Reduction Grant
- Special Project Grants
- Targeted Priority Grants

Communications
- Marketing and External Communications
- Educational Campaigns
- Website Management
- Social Media
- Annual Report & Newsletters

School Program
- School Consortium & Contract Assistance
- School Recycling Resources & Champions Program
- School District Champion Grants
- School Food Waste Resources
- Presentations and Outreach

Food Waste Initiative
- Composting Infrastructure
- Awareness & Education Campaigns and Activities
- Technical Assistance & Financial Incentives
- Community and Business Engagement
- Compost Collection and Drop-off
- Research, Pilot Projects, Collaboration

Larger Existing Programs
- Household Hazardous Waste Program
- Drop-off Recycling Program
- Yard Waste Program
- Environmental Crimes Task Force

Business Program
- Waste Reduction and Diversion Resources
- Technical Assistance
- Recognition Program
- Financial incentives
- Presentations and Outreach

Outreach & Landfill Tours
- School Groups & Field trips
- Community Groups & Organizations
- Webinars & Videos
- Presentations, Workshops, and Tabling
- Education Partnerships

Administrative
- Annual District Report & Data Collection
- Solid Waste Management Plan Management
- Strategic Partnerships
- Research
- Market Development

Food Waste and Organics Processing Capacity and Supporting Programs

SWACO's 2019 waste characterization study documented that food waste was the single largest category of material being disposed in the landfill, constituting about 15% of what was disposed, or nearly 170,000 tons per year. This equates to about 1,000,000 lbs. a day being received at the landfill. The food waste issue has also been recognized as an important issue by Ohio EPA, U.S. EPA, the United Nations, as well organizations such as the National Resources Defense Council (NRDC) and the World Wildlife Fund (WWF)

Recognizing the importance of this waste stream locally, SWACO convened the Central Ohio Food Waste Initiative (COFWI) in 2019, and issued the Food Waste Action Plan in 2020, which included 20 recommendations for addressing food waste. In 2021 SWACO launched Save More Than Food public education campaign and web site and began prioritizing grants for food waste diversion projects. Food waste continues to represent one of the largest potential areas of landfill diversion for SWACO, and it will continue to be a priority area for SWACO under the Plan

As will be discussed later in this Plan, SWACO has established successful pilot food waste diversion programs in schools, community food-waste drop-off locations, and successful public education campaigns, but it is recognized that one of the biggest barriers to the sustainability and expansion of these programs is the need for local food waste composting processing capacity. There is not a single composting facility in SWACO's jurisdiction that is authorized to accept food waste, so all food waste is being transported out of the District to be composted, significantly increasing the expense of implementing food waste diversion programs. In 2020 SWACO completed a study to determine the feasibility and technical requirements of establishing a regional composting facility through a public-private partnership. In 2022 SWACO completed a public process to identify qualified companies

that could design and operate such a facility. The evaluation of the feasibility of establishing such a facility will continue into this planning period, with the potential of establishing such a facility.

While it cannot be definitively determined at this time whether such a facility will be constructed during the planning period, food waste and the diversion of organics will continue to be a high priority for SWACO. In particular, finding a solution for the lack of local composting capacity will be a priority, along with continued development of supporting programs such as expanded collection options, technical assistance, financial incentives and education programs.

Commercial Recycling

About 60% of the material disposed in the Franklin County Sanitary Landfill is generated by the commercial (business) sector. SWACO's 2019 waste characterization study documented that the second largest component of the material disposed in the landfill was cardboard, 85% of which was generated in the commercial sector. In addition to cardboard, the waste characterization study also documented that a significant amount of other readily recyclable materials, such as paper and wood pallets, were disposed from the commercial sector. As a result, commercial sector waste diversion will be a high-priority area of focus under this Plan.

In 2020 SWACO hired an employee dedicated specifically to implementing waste reduction programs focused on the business sector, and in 2022 SWACO launched a new set of resources and incentives to help businesses start successful recycling programs. It is anticipated that during this planning period additional staff capacity will be brought on board to focus on this area, reflecting the importance and scope of the challenge. SWACO's existing business programs will continue to develop and expand under this Plan, and it will be necessary to develop impactful new programs and policies in order to make a significant impact in diverting materials from this sector.

B. PROGRAM DESCRIPTIONS

Residential Recycling Infrastructure: Curbside Recycling Services

SWACO has created a solid foundation for further enhancing curbside recycling programs. The Residential Recycling Infrastructure includes a system of curbside collection programs offered by both the private sector and government agencies. SWACO does not provide curbside recycling services but assists communities with designing successful curbside programs and assists them with contracting for curbside services. Currently, 36 of the 41 of the communities in SWACO's jurisdiction have "non-subscription" curbside recycling programs, meaning that every single-family home receiving trash service also receives curbside recycling service automatically. This equates to 88% of communities, and 97% of the households in SWACO's jurisdiction. Most of these programs also provide curbside collection of yard waste. These programs are identified in Tables 5-1a and 5-1b.

Table 5-1A Curbside Recycling Services Non-Subscription Curbside Recycling Services Available: Reference Year

ID #	Name of Curbside Service	Service Provider	Collection Frequency	Service will Continue Throughout Planning Period (Y/N)
NSC1	Bexley (City)	Rumpke	Weekly	Y
NSC2	Blendon Township	Rumpke	Weekly	Y
NSC3	Brice (Village)	Local Waste	Weekly	Y
NSC4	Canal Winchester (City)	Rumpke	Weekly	Y
NSC5	Clinton Township	Local Waste	Weekly	Y
NSC6	Columbus (City)	Rumpke	Bi-weekly	Y
NSC7	Dublin (City)	Rumpke	Weekly	Y
NSC8	Gahanna (City)	Local Waste	Weekly	Y
NSC9	Grandview Heights (City)	Community	Weekly	Y
NSC10	Grove City (City)	Local Waste	Weekly	Y

ID #	Name of Curbside Service	Service Provider	Collection Frequency	Service will Continue Throughout Planning Period (Y/N)
NSC11	Groveport (City)	Local Waste	Weekly	Y
NSC12	Hamilton Township	Local Waste	Weekly	Y
NSC13	Hilliard (City)	Local Waste	Weekly	Y
NSC14	Jackson Township	Local Waste with Grove City	Weekly	Y
NSC15	Jefferson Township	Waste Management	Bi-weekly	Y
NSC16	Lockbourne (Village)	Local Waste	Weekly	Y
NSC17	Madison Township	Local Waste	Weekly	Y
NSC18	Marble Cliff (Village)	Grandview Heights	Weekly	Y
NSC19	Mifflin Township	Rumpke	Weekly	Y
NSC20	Minerva Park (Village)	Local Waste	Weekly	Y
NSC21	New Albany (City)	Rumpke	Weekly	Y
NSC22	Norwich Township	Local Waste	Weekly	Y
NSC23	Perry Township	Rumpke	Weekly	Y
NSC24	Plain Township	Rumpke	Weekly	Y
NSC25	Pleasant Township	Local Waste	Weekly	Y
NSC26	Reynoldsburg (City)	Local Waste	Weekly	Y
NSC27	Riverlea (Village)	Multiple	Weekly	Y
NSC28	Sharon Township	Local Waste	Weekly	Y
NSC29	Truro Township	Local Waste	Weekly	Y
NSC30	Upper Arlington (City)	Local Waste	Weekly	Y
NSC31	Urbancrest (Village)	Local Waste	Weekly	Y
NSC32	Valleyview (Village)	Rumpke	Bi-weekly	Y
NSC33	Washington Township	Rumpke	Weekly	Y
NSC34	Westerville (City)	Rumpke	Weekly	Y
NSC35	Whitehall (City)	Local Waste	Weekly	Y
NSC36	Worthington (City)	Local Waste	Weekly	Y

Table 5-1B Curbside Recycling Services Subscription Curbside Recycling Services Available: Reference Year

ID #	Name of Curbside Service	Service Provider	Collection Frequency	Service will Continue Throughout Planning Period (Y/N)
SC1	Brown Township	Multiple available Haulers	N/A	N/A
SC2	Franklin Township	Multiple available Haulers	N/A	N/A
SC3	Harrisburg (Village)	Multiple available Haulers	N/A	N/A
SC4	Obetz (City)	Multiple available Haulers	N/A	N/A
SC5	Prairie Township	Multiple available Haulers	N/A	N/A

SWACO will continue to assist communities with contracting for curbside recycling service and improving their service, help to monitor and address curbside contamination through collaboration with the recyclable processing facilities and the communities, and will encourage and assist the remaining 5 communities in our jurisdiction with establishing non-subscription curbside recycling.

Curbside-Related Programming: Consortiums & Bidding Assistance

One of SWACO's most successful programs has been the bidding "Consortiums" that have been developed to assist local communities with bidding out their trash, recycling, and yard waste collection services. These Consortiums leverage the collective buying power of local communities to receive best value and quality of service by going through a collaborative and cooperative bidding process together, organized and led by SWACO. There are 3 Consortiums in place, with 24 of the local cities, townships, and villages participating. It is anticipated that this number will grow in the future.

In addition to the 24 communities that participate in Consortiums, SWACO provides one-on-one bidding technical assistance to about 6 additional communities, and offers this assistance to all communities within the District that are interested in implementing curbside recycling and yard waste programs.

Curbside-Related Programming: Cart Grants

Utilization of larger, wheeled, recycling carts is recognized as a best practice due to the fact that it results in higher diversion due to the increased capacity of the cart to hold recyclable materials. It also provides an important community benefit by reducing blowing litter on collection day. SWACO supports the use of recycling carts by providing generous grants to communities to purchase these carts date, SWACO has provided these grants to 7 communities for a total of about 45,000 carts. In addition, though the Consortium process many other communities have been able to utilize recycling carts provided by their service provider as part of their recycling contracts. In total, 26 out of the 36 communities receiving curbside recycling service are utilizing carts. SWACO will continue to offer these cart grants into the future, with a goal of having all curbside communities using carts in the future.

Curbside-Related Programming: Education & Cart Tagging

SWACO recognizes the importance of education in all aspects of our programming. Nowhere is this more important than in residential curbside recycling. As part of the implementation of SWACO's district-wide Recycle Right campaign, SWACO collaborates with local communities to conduct community-specific Recycle Right campaigns. This involves close collaboration and coordination with local communities to conduct a multi-week education campaign that involve community-driven communication using community newsletters, website updates, emails to residents, and social media, and SWACO-led communication such as mailed magnets or "clings" that illustrate what can and can't be recycled, other types of direct mailed education, social media, targeted advertisements, and other similar tactics.

SWACO also periodically conducts "cart-tagging" education campaigns, an intensive type of education campaign in which recycling carts are "audited" and an educational cart tag is left when contamination is found in the cart. SWACO conducted a cart-tagging with the City of Columbus in 2019 and a similar program in Gahanna in 2021, both of which were funded through grants from Ohio EPA with assistance from The Recycling Partnership. SWACO will continue to pursue this strategy when appropriate to address contamination in the waste stream.

Residential Recycling Infrastructure: Recycling Drop-off

The Recycling Drop-off Program is one of SWACO's oldest programs. The program is essential for assisting residents without curbside service (such as those living in multi-family housing) by providing them with an opportunity to recycle. These location also provide an outlet for excess material from residents that have curbside recycling. In 2021, SWACO provided drop-off containers and hauling services for 64 recycling drop-off locations, with each location containing from one to eight 8-cubic yard recycling containers. In 2021 SWACO collected over 6,100 tons of material through the program, equivalent to over 1,000,000 lbs. of material <u>each month</u>.

One of the biggest challenges to the program is open dumping at some of the locations. SWACO combats open dumping by closely monitoring the sites and devoting considerable staff hours to keeping them clean. SWACO also pursues legal enforcement against individuals that open dump at our drop-off sites through our partnerships with the Franklin County Sheriff Department and the Franklin County Prosecutors Office.

Another challenge is locating new sites, due to the fact that the vast majority of locations are located on private property through partnerships with landowners. It is surprisingly challenging to locate appropriate locations and find willing partners to host the sites. Nevertheless, SWACO has a short-term goal of establishing about 5 – 10 new locations in areas of the jurisdiction that currently don't have drop-off locations. In the longer term, as SWACO pursues more recycling at multi-family complexes through incentives and community adopted policies, it

is anticipated that the need for these locations will diminish, and we may see a reduction in the number of locations.

Although drop-off recycling is far less effective than curbside, the drop off program is a critical strategy to fill the gap between curbside programs and areas, such as multi-family housing complexes, which do not have recycling available. This program also serves small commercial businesses that cannot find cost effective recycling service due to their small size.

Table 5-2 Drop-off Recycling Locations

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Service will Continue Throughout Planning Period (Y/N)
FTU1	City of Canal Winchester	SWACO	SWACO	Yes
FTU2	City of Columbus	SWACO	SWACO	Yes
FTU3	City of Columbus	SWACO	SWACO	Yes
FTU4	City of Columbus	SWACO	SWACO	Yes
FTU5	City of Columbus	SWACO	SWACO	Yes
FTU6	City of Columbus	SWACO	SWACO	Yes
FTU7	City of Columbus	SWACO	SWACO	Yes
FTU8	City of Columbus	SWACO	SWACO	Yes
FTU9	City of Columbus	SWACO	SWACO	Yes
FTU10	City of Columbus	SWACO	SWACO	Yes
FTU11	City of Columbus	SWACO	SWACO	Yes
FTU12	City of Columbus	SWACO	SWACO	Yes
FTU13	City of Columbus	SWACO	SWACO	Yes
FTU14	City of Columbus	SWACO	SWACO	Yes
FTU15	City of Columbus	SWACO	SWACO	Yes
FTU16	City of Columbus	SWACO	SWACO	Yes
FTU17	City of Columbus	SWACO	SWACO	Yes
FTU18	City of Columbus	SWACO	SWACO	Yes
FTU19	City of Columbus	SWACO	SWACO	Yes
FTU20	City of Columbus	SWACO	SWACO	Yes
FTU21	City of Columbus	SWACO	SWACO	Yes
FTU22	City of Columbus	SWACO	SWACO	Yes
FTU23	City of Columbus	SWACO	SWACO	Yes
FTU24	City of Columbus	SWACO	SWACO	Yes
FTU25	City of Columbus	SWACO	SWACO	Yes
FTU26	City of Columbus	SWACO	SWACO	Yes
FTU27	City of Columbus	SWACO	SWACO	Yes
FTU28	City of Columbus	SWACO	SWACO	Yes
FTU29	City of Columbus	SWACO	SWACO	Yes
FTU30	City of Columbus	SWACO	SWACO	Yes
FTU31	City of Columbus	SWACO	SWACO	Yes
FTU32	City of Columbus	SWACO	SWACO	Yes
FTU33	City of Columbus	SWACO	SWACO	Yes
FTU34	City of Columbus	SWACO	SWACO	Yes
FTU35	City of Columbus	SWACO	SWACO	Yes
FTU36	City of Columbus	SWACO	SWACO	Yes
FTU37	City of Columbus	SWACO	SWACO	Yes
FTU38	City of Columbus	SWACO	SWACO	Yes
FTU39	City of Columbus	SWACO	SWACO	Yes

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Service will Continue Throughout Planning Period (Y/N)
FTU40	City of Columbus	SWACO	SWACO	Yes
FTU41	City of Columbus	SWACO	SWACO	Yes
FTU42	Franklin Township	SWACO	SWACO	Yes
FTU43	Franklin Township	SWACO	SWACO	Yes
FTU44	City of Grove City	SWACO	SWACO	Yes
FTU45	City of Grove City	SWACO	SWACO	Yes
FTU46	City of Grove City	SWACO	SWACO	Yes
FTU47	City of Grove City	SWACO	SWACO	Yes
FTU48	City of Groveport	SWACO	SWACO	Yes
FTU49	City of Hilliard	SWACO	SWACO	Yes
FTU50	Jackson Township	SWACO	SWACO	Yes
FTU51	Village of Lockbourne	SWACO	SWACO	Yes
FTU52	Mifflin Township	SWACO	SWACO	Yes
FTU53	City of New Albany	SWACO	SWACO	Yes
FTU54	Plain Township	SWACO	SWACO	No
FTU55	Pleasant Township	SWACO	SWACO	Yes
FTU56	Prairie Township	SWACO	SWACO	Yes
FTU57	Prairie Township	SWACO	SWACO	Yes
FTU58	Prairie Township	SWACO	SWACO	Yes
FTU59	City of Westerville	SWACO	SWACO	Yes
FTU60	City of Westerville	SWACO	SWACO	Yes
FTU61	City of Whitehall	SWACO	SWACO	Yes
FTU62	City of Worthington	SWACO	SWACO	Yes
FTU63	City of Worthington	SWACO	SWACO	Yes
FTU64	City of Worthington	SWACO	SWACO	Yes

Multi-Family Diversion Assistance

While the drop-off program is employed primarily to provide an opportunity to recycle to the residents of the numerous multi-family households in the district, it is still a less convenient option for residents than having the recycling available on site. In 2021, working closely with the City of Columbus and The Recycling Partnership (a national non-profit organization), SWACO conducted its first limited pilot project focused on multi-family recycling, to determine the costs, impacts, and barriers to multi-family recycling, as well as to develop an educational toolkit that can be used to educate multi-family residents on proper recycling habits.

During the pilot numerous barriers were identified, including costs, lack of adequate space to place recycling dumpsters, and lack of corporate approval to participate in the pilot (although often *local* property managers were interested in participating).

During the pilot, a resident education toolkit was developed, including: a tote bag for the resident to use to transport materials from their unit to the recycling dumpster; a "Cling" showing residents what can and cannot be recycled; and an instructional document describing the program to the resident and explaining how to participate. A property manager toolkit was also developed, including directional signage directing residents to the recycling dumpsters, lobby posters promoting the program, and other educational signage supporting the recycling program.

Phase two of the project will begin in 2023, which will be focused on properties outside of the City of Columbus.

Moving forward, SWACO will continue to build out the multi-family program, which may include:

- Financial incentives to support program start-up
- Further evaluation of the current multi-family recycling services.
- Engagement with development and architecture organizations to encourage development of new multifamily complexes with resident recycling in mind
- Engagement with local communities and planning and zoning departments to advocate for policies to facilitate recycling at multifamily complexes

Commercial/Institutional Sector[1] Technical and Diversion Assistance

Sixty percent of the waste received at the Franklin County Sanitary Landfill was generated by businesses (the commercial/institutional sector). To better understand the composition and characteristics of the materials disposed of in SWACO's waste stream, a waste characterization study was conducted in 2019 which determined that approximately 42% of the total commercial waste stream, or 290,000 tons a year, was recoverable through programs, services, and processing that is available today. Over 20% of commercial material disposed was corrugated cardboard and recyclable paper alone. Over 14% was food waste and that there is a tremendous opportunity to divert more commercial/institutional waste from the landfill.

In 2020 SWACO hired a full-time business recycling specialist, and in 2021 SWACO launched an online business recycling toolkit designed to help businesses design and launch successful recycling programs. In 2022 SWACO launched the first phase of a business recycling incentive program, which allows businesses to purchase recycling containers at significantly discounted prices 2023 a similar incentive program was launched for business recycling services.

Throughout the planning period, SWACO will implement business recycling programs that include:

- Direct technical assistance to help businesses create new recycling programs, improve existing programs, and find solutions for hard to recycle materials.
- Recycling and waste diversion education through activities such as: Recycling at Work webinars, business focused newsletters, and public speaking at events such as Chambers of Commerce meetings.
- Promotion of the Recycling Toolkit and additional technical assistance documents.
- Implementation of the Business Recycling Champions incentive program and development of additional incentive programs.
- Recognition of area business recycling success stories through case studies, business profiles, social media, and other methods.

Additional new programs may include:

- Grants to businesses for equipment such as recycling balers and compactors
- Grants and pilot testing of new technologies that have the potential to divert additional materials
- Assisting with reusing or recycling materials through facilitating solutions, contracting, storage of materials, or de-packaging or deconstruction of materials
- Research and pilot projects focused on targeted industries or materials
- Creation of other programs designed to divert business generated materials from the landfill

[1] The Commercial/institutional sector consists primarily of the following: commercial businesses, schools and universities, government agencies, office buildings, stadiums, amusement parks, event venues, stadiums, hospitals and non-profit organizations.

Institutional Sector: School Recycling Programs

SWACO provides a wide range of programs oriented at schools including:

- The School Consortium program, a collaborative bidding program where school districts in Franklin County cooperatively bid for trash and recycling services, leveraging their buying power to receive high-quality, low-cost recycling services
- A how-to guide to help schools implement successful recycling programs
- The School Recycling Champions Funding and Recognition program, which provides financial assistance to purchase indoor recycling containers to individual schools that follow SWACO best practices guide. The program also provides recognition to schools that complete the program.
- The School District Champions Funding and Recognition program, which provides financial assistance to purchase indoor recycling containers to school districts that work with SWACO to implement best practices in their school districts. The program also provides recognition to schools that complete the program.
- Teacher lesson plans and school activities to help teachers teach the importance of recycling.
- Web-based activities for at home learners.
- Resources on preventing food waste, including teacher lesson plans, student activities, and guidance on how to start share tables in school cafeterias.

Under this Plan SWACO will continue to implement these programs and may also develop and implement additional programs focused on college and university institutions with an emphasis on recycling and composting, zero-waste plans, and targeted grants.

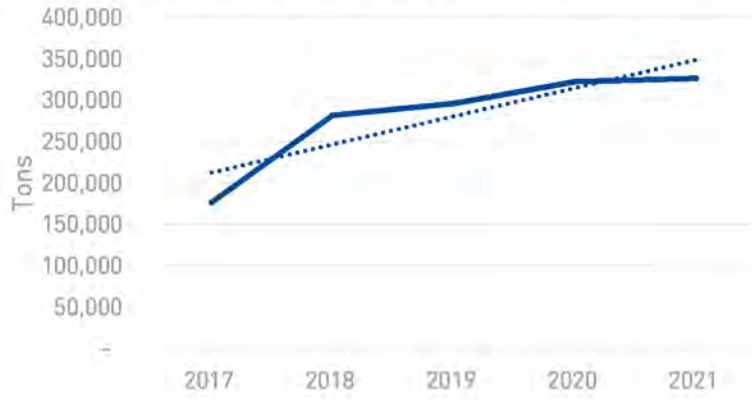
Institutional Sector: Large Venue Recycling

SWACO provides technical assistance and grant funding opportunities to large venues that want to establish or improve recycling and composting opportunities at their venues. For example, SWACO has provided grants in the past to the Greater Columbus Convention Center and the Port Columbus International airport for recycling containers have also worked closely with the Columbus Crew to submit a grant application to Ohio EPA for recycling containers and equipment at the new Columbus Crew Lower.com Field. The programs will continue to be offered.

Industrial Sector Technical Assistance

Many manufacturing industries have self-initiated waste reduction and recycling programs to achieve financial savings or to meet internal environmental goals. For instance, the Whirlpool Corporation has a goal to achieve zero waste to landfill across all global manufacturing facilities by 2022. This is further supported by the fact that SWACO was able to document a 90% industrial recycling rate in 2021

Figure F-1 Historical Recycling Analysis: Industrial



While SWACO does not have a dedicated program exclusively for industrial entities, all commercial/institutional resources are available and applicable to industrial entities. SWACO employs a Business Recycling Administrator that is also focused on all business sectors, including the industrial sector. Although the recovery rate for industry is over 90%, SWACO will continue to research and identify needs within the Industrial Sector, and may develop targeted technical assistance, education, or grant programs if it is determined that these programs could effectively result in additional diversion from the landfill.

Restricted/Difficult to Manage Waste Streams

Restricted and "Difficult to Manage" waste streams include materials such as Household Hazardous Waste (HHW), yard waste, electronics, pharmaceuticals, and other items. Some of these materials are restricted from landfilling by Ohio EPA, are identified as priority items to address, or are covered by specific laws or regulations. These materials typically require special collection services or locations, more effort on behalf of the consumer to participate, and generally have higher programmatic costs. Nevertheless, they are important to the success of properly managing the waste stream.

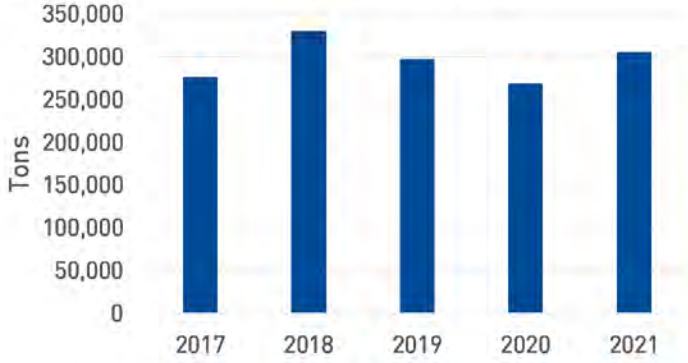
Although not required by the state to collect all these special waste materials, SWACO considers these materials an important part of its commitment to responsibly managing the waste stream. SWACO has strategies in place to manage these waste streams that are handled through a combination of retailer take-back, product stewardship, and SWACO funded programs:

Yard Waste

SWACO's Yard Waste Management Program is well established and successful. Integral to this program is the fact that virtually all of the communities that have curbside recycling also receive weekly pick-up of yard waste as part of their service contracts (33 out of the 36 curbside recycling communities), and even those without weekly service may provide seasonal leaf collection. SWACO's involvement in this program extends beyond the Consortiums and bidding assistance to communities. SWACO also contracts with local yard waste facilities so that residential yard waste is accepted free of charge, either through curbside collection or through residents taking their yard-waste material directly to the facilities.

The 2019 waste composition study report reinforces the success of the program by demonstrating that only 3.7% of material landfilled is yard waste. SWACO also dedicates extensive resources to educating residents about properly diverting their yard waste through their curbside collection and use of these facilities. Continued education about the program and how to reduce yard waste contamination will help to ensure the program's continued success. SWACO also promotes and educates residents about backyard composting, another way that they can manage their yard waste in an environmentally beneficial way.

Figure H-4.3 Historical Yard Waste Recycling



SWACO will continue to support the diversion of yard waste through contractual arrangements, public education, contracting assistance, and other support services.

Household Hazardous Waste (HHW)

Household Hazardous Waste (HHW) includes hazardous materials generated by residents such as paint, solvents, gasoline and automobile liquids (oil, antifreeze, etc.), DIY home renovation products such as adhesives and driveway sealants, household batteries, fertilizer, pool chemicals, household cleaners, and flammable, toxic, reactive and corrosive materials, and other similar materials. SWACO implements several strategies for managing HHW.

Currently, SWACO funds a permanent HHW facility that is open for limited hours on during the week for residents to drop-off HHW materials. The Permanent Collection Site has been highly successful with diversion of about 300 tons during the 2021 reference year. SWACO also funds several mobile collection events annually. In 2021 SWACO sponsored three mobile collection events that serviced over 2,400 vehicles and was successful at diverting a total of 3.2 tons of lead-acid batteries and 53 tons of mixed HHW.

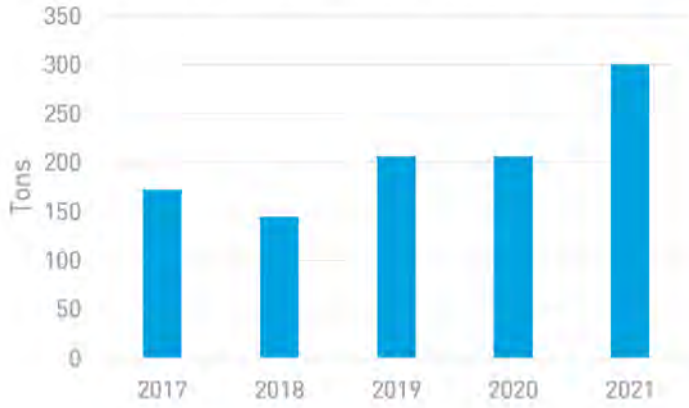
SWACO contracts with a private service provider to offer free residential recycling for HHW at the full-time Household Hazardous Waste Center located in Columbus, OH. SWACO also partners with local communities, and uses the same contractor to offer several mobile collection events each year. Collection events are advertised and promoted through social media, paid advertising, newsletters, and the SWACO website.

SWACO also promotes the use of less hazardous materials and more environmentally friendly products by residents and promotes retail take-back options available for certain materials on SWACO's RecycleRight.org website.

The HHW program is one of the most requested services by residents and communities. This program is also the highest cost per ton out of the programs offered by SWACO, and has one of the highest overall costs of any SWACO programs.

Due to its high cost, evaluation of this program is continuous, striving to find a balance between the community's interests, convenience, diversion impacts, and financial sustainability.

Figure H-6.2 Historical Permanent HHW Facility Tons



In 2021 SWACO began a formal evaluation of the HHW program and the possibility of establishing a "Convenience Center" that would be available to all Franklin County residents that could potentially accept a wide variety of recyclable materials beyond HHW. For instance, a Convenience Center might be able to accept a mix of materials including traditional recyclables, yard waste, scrap tires, E-waste, appliances, scrap tires, polystyrene, usable furniture, and textiles.

This evaluation will continue, with the possibility of establishing a Convenience Center facility as early as the 2025 – 2026 timeframe. SWACO is also actively exploring the possibility of establishing smaller, community scale convenience center type collection opportunities, either independently or in partnership with our local communities. These locations would likely accept a smaller number of items than a full-scale facility

Scrap Tires

Scrap tires are accepted at the SWACO transfer facilities and landfill. SWACO also promotes the use of local tire shops, automotive service stations, and Liberty Tire for other options for tire recycling. Illegal dumping of tires is addressed through the Environmental Crimes Task Force.

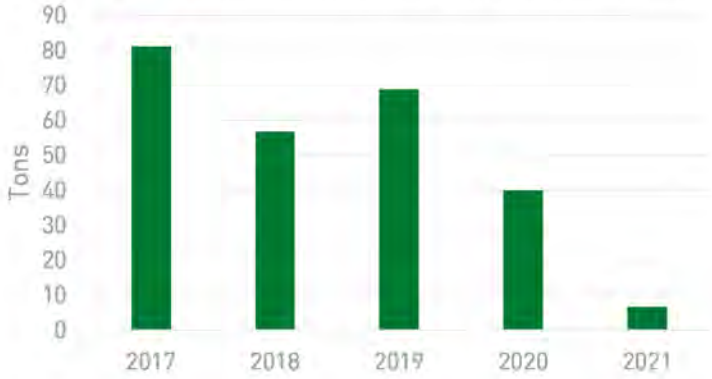
Electronic Waste (E-Waste)

Electronic waste (E-waste) continues to be a fast-growing waste stream as technology such as cell phones, computers, TVs, tablets, and other electronic devices are being discarded at an alarming rate as technology continues to improve and consumer demand for new devices remains constant. Many E-Waste recycling businesses and services are available throughout the district and a variety of retailers offer take-back programs. SWACO provides an inventory of e-waste outlets and retailers that offer take-back programs on our RecycleRight.org web site.

SWACO also contracts with certified E-Waste recyclers in Franklin County to provide municipalities and government agencies throughout the District an opportunity for environmentally responsible recycling service for the E-waste that they generate. Municipalities can also offer collection options to their residents through this program. SWACO may also provide periodic residential collection events utilizing this contract.

In 2021, SWACO partnered with TCL (television manufacturer) and MRM (a TV recycling trade organization) to sponsor an E-waste collection event that resulted in 6,500 lbs. of E-waste being collected. SWACO also partnered with the County Auditor's office on an E-waste collection event that resulted in 6,543 lbs. of e-waste collected.

Figure H-6.4 Historical Electronic Drop Off Collection Tons



Lead-acid Batteries

Lead-acid batteries are accepted at SWACOs permanent HHW collection facility and during mobile HHW collection events. SWACO also promotes the use of auto repair and auto parts stores on our RecycleRight.org web site for recycling lead-acid batteries.

Appliances

Appliances, denoted in Appendix E as white goods, have a strong recycling infrastructure in the district. 17,975 tons were recovered in 2021. Residents primarily rely on curbside collection arranged with their local hauler. All Consortium community contracts provide for the collection of appliances at the curb. Frequently, local "pickers" will remove scrap metal from the curb prior to the weekly collection by the hauler. Many appliance stores will also remove old appliances for recycling or reuse at no charge upon delivery of a new unit. SWACO promotes reuse and recycling of appliances with a list of 14 locations on our RecycleRight.org web site that accept appliances. Appliances are also accepted at the FCSL for a charge of $20 for each appliance. However, the Freon must be removed from the appliance by a licensed Freon recycler. The appliance must be tagged by the recycler as "Freon free."

Pharmaceuticals

SWACO provides Franklin County residents with information about and access to safe disposal options for expired, unused or unwanted prescription drugs. Proper disposal is important because it helps protect the environment, our groundwater, our loved ones, and our communities. Education material emphasized the importance of disposing of unneeded medicine to prevent harm to children, pets, teens, and adults if accidentally ingested or misused.

SWACO also plays an important role in helping to identify and promote special diversion needs that arise within the District. One such example is the promotion of the DEA National Prescription Drug Take-Back Days, held in April and October each year. Each year numerous communities in Franklin County participate in the event to host pharmaceutical collection events. These events give people a safe, convenient, and responsible way to dispose of unused or expired prescription drugs. SWACO promoted the 2021 National Prescription Drug Take Back Day which was successful at collecting 5,299 lbs. at the spring and 2.6 tons at the fall event.

Within the last few years there has also been a significant increase in the number of pharmacies providing permanent take-back collection opportunities. There are now 38 permanent pharmacy take-back locations to safely dispose of prescription drugs within the District, and an additional 10 police department hosted locations. SWACO promotes all of these available take-back options on our website.

As an organization responsible for our community's waste management, SWACO is committed to spreading the message about the safe disposal of prescription opioids and other medicines. Holding on to leftover medicine is a dangerous practice, as nearly half of the young people who inject heroin start by misusing prescription pain medicine. The website Don't Live in Denial, Ohio offers details on avoiding harm from illicit opioids.

Political Signs

SWACO started a political sign collection program in 2017. All paper and plastic signs and accompanying metal stands are accepted free of charge at a collection location in Columbus on the Saturday after the election. An average of 1.75 tons of political sign material was collected for 2020 and 2021. Candidates are encouraged to pick up their own campaign signs for future reuse. Grove City held its first collection event in 2022 and Bexley, Upper Arlington, and New Albany are also partnering with SWACO for future events. For residents who can't make any of the central Ohio events, SWACO instructs households that paper signs can go in the curbside recycling, plastic ones go to film recyclers, and the metal stands themselves go to scrap metal recyclers.

Other Material Specific Programs

Food Waste

Food waste is the largest single material type that is received at the landfill, representing about 15% of the total material received, or nearly 170,000 tons each year. This equates to about 1,000,000 pounds of food waste received at the landfill every day. It is the largest component of disposed waste for both the residential and commercial sectors. Limited outlets for processing and handling food waste currently exist within the District.

Recognizing the importance of this issue, SWACO formed the Central Ohio Food Waste Initiative (COFWI) in 2019 to bring together a diverse set of organizations to help build a unified approach towards reducing food waste and leveraging it to benefit our region. COFWI pursued a wholistic approach to combat food waste by creating solutions geared towards food waste prevention, rescuing, and redistributing edible food, and recycling food through composting and other technologies. COFWI issued the Food Waste Action Plan in 2020 as the result of a series of collaborative engagements with partnering organizations that recognized the value in reducing food waste in the central Ohio region. Based on those engagements and the input gathered, the document has served as a pathway of opportunities and solutions for the regional community to pursue. The intent of the report was to provide a living framework for collaboratively advancing the front lines on food waste, which requires a flexible and adaptive approach.

To support the solutions identified in the Food Waste Action Plan, SWACO launched the Save More Than Food public education campaign and launched the savemorethanfood.org website to stand as a permanent resource for residents, schools, and businesses on how to reduce food waste. This includes tools and information to help families stretch their food as far as possible to help save money, as well as conserve resources, including strategies for preventing food waste such as planning, reinventing leftovers, safely storing foods, and composting food scraps.

SWACO also began prioritizing grant funding towards food waste diversion, and funded a number of successful projects through grants and partnership agreements, including:

These partnerships include:

- Composting in Hilliard City Schools cafeterias
- Food waste education and composting pilot projects in Columbus City Schools
- Franklin County Soil and Water Conservation District to provide home composting systems at a reduced cost to residents who also participate in composting training.

- Wexner Medical Center that piloted the use of Winnow, a technology that uses AI to evaluate food waste and provide feedback on methods for reducing the amount of food waste generated.
- Community-based food waste drop-off locations

SWACO will continue to prioritize food waste focused grant projects under this plan.

One of the biggest barriers preventing expansion of food waste diversion programs is the lack of a compost facility capable of accepting food waste within SWACO's jurisdiction. In 2020 SWACO completed a study to determine the feasibility and technical requirements of establishing a regional composting facility through a public-private partnership. In 2022 SWACO completed a public process to identify qualified companies that could design and operate such a facility. Evaluation of the feasibility of establishing such a facility will continue into this planning period, with the potential of establishing such a facility to support the expansion of food waste diversion in the District.

While it cannot be definitively determined at this time whether such a facility will be constructed during the planning period, food waste and the diversion of organics will continue to be a high priority for SWACO. In particular, finding a solution for the lack of local composting capacity will be a high priority, along with continued development of supporting programs such as expanded collection options, organic carts for curbside collection, technical assistance, financial incentives and education programs.

Other Programs

Outreach, Education, Awareness, and Technical Assistance

SWACO has an extensive public outreach, education, and awareness program, and 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 maintains several web sites, including swaco.org, recycleright.org, savemorethanfood.org, and itsacrime.org. SWACO's current websites contain the necessary information to adequately describe its basic programs and purpose. The websites includes information on major recycling programs, yard waste, HHW management, school tours, and many more topics and programs. SWACO plans to continually improve the websites during the planning period to make sure that they continue to be a comprehensive source of information about SWACO and opportunities to recycle, compost, and properly manage waste in 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.
- 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 may 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 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 outrach to gauge individual interest in deeper engagement.

Education Center

Due to construction at the Franklin County Sanitary Landfill to accommodate new facilities to support operation of the landfill and transfer facilities, it was necessary to demolish the existing education center in 2022. In 2023 SWACO will begin utilizing a temporary building adjacent to the landfill to conduct landfill tours and educational programs. During the 2023-2024 timeframe, SWACO plans to begin designing a new educational facility, with construction planned during the 2025-2026 timeframe. The new facility will be designed with engaging, high-impact, interactive displays and activities focused on the importance of reducing waste, recycling, and composting. This facility will include educational elements focused on both children and adults, and will provide adequate space to conduct landfill tours, presentations, and workshops.

Environmental Crimes Task Force

Established in 1992, the Environmental Crimes Task Force of Central Ohio (ECTF) is Franklin County's multi-governmental, anti-littering and illegal dumping collaborative designed to identify, investigate, and prosecute environmental crimes. In addition, the ECTF works to educate Franklin County residents about how to dispose of their unwanted materials properly and safely – such as hazardous materials, yard waste and construction debris. The ECTF allows residents to report environmental crimes and support the successful

investigation and prosecution of those crimes. SWACO contracts with the Franklin County Sheriff's Dept. and Prosecutor's Office for investigation and prosecution of these cases. The program has been successful at accomplishing the established goals of protecting the environmental health and safety of central Ohio residents and communities.

Grants

In 2021, SWACO awarded $215,055 in Waste Reduction Grants to 15 communities and awarded $7,314 in Event Waste Reduction Grants to 3 organizations as outlined in Appendix H-5. These 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.

Grant programs will include our Community Waste Reduction Grants (the broadest grant program), the Event Waste Reduction Grant program, Special Project Grants (for unique or time sensitive projects), Targeted Priority Grants (for priority areas, which could include a identified priority waste steam, a priority business or organizational segment, or a priority project type), and other grant programs that SWACO may develop in the future.

Innovation

In October 2020, SWACO partnered with Rev1 Ventures, a Columbus seed-funding venture capital firm, to identify innovative solutions to Central Ohio's waste stream issues. Working with Rev1, SWACO has identified three focus areas to try and reduce the amount of food and other waste entering our landfill:

- Prevention: Reduction methods that reduce the volume of waste
- Rescue: Redistributing excess food to feed people
- Recycling: Repurposing food waste as energy, agricultural supplements, and other products.

SWACO and Rev1 have provided technical assistance and guidance to 8 local start-ups and/or social enterprises on how to grow or expand their business. SWACO's partnership with Rev1 allows us to connect with these startups, entrepreneurs and other innovators who can reduce or divert food and other waste through reuse, recycling, and composting.

While SWACO may not continue to partner directly with Rev1 during the Plan implementation, SWACO will continue to explore ways to support innovation within waste management in Central Ohio.

Market and Economic Development

The market for recycled materials is strong, and so are the Central Ohio industries that rely on recycled materials. The Central Ohio region is home to nearly 400 businesses that employ some 5,000 people, generating $1 billion in annual revenue. The products those businesses create from recycled materials often find new life in other industries in Ohio. As an example, 100% of our curbside recyclables stay in the United States, while 95% stay in the Midwest and 80% become new products in Ohio. It's all part of the circular economy, benefiting businesses, their employees, and our environment.

Other examples of the circular economy include Advanced Drainage Systems, Inc, in Hilliard which is North America's largest recycler of HDPE plastic. ADS recycled 674 million pounds of HDPE plastic in 2021, transforming milk jugs and shampoo bottles into pipes and holding chambers that help manage stormwater runoff in cities and neighborhoods around our state. Pratt Paper Mill in Wapakoneta turns used household paper into new paper products. Aluminum cans get new life at Franklin Iron in Dayton, where old cans become new ones in less than 90 days, supporting the needs of Ohio's beverages industry. And at PureCycle in Ironton,

household plastic becomes near-virgin resin that other Ohio businesses, including Proctor and Gamble, rely on to bottle soaps and laundry detergents.

When appropriate, SWACO will support technologies and businesses that strengthen the markets for the use of recycled materials in our jurisdiction.

Economy Business Park

Our Green Economy Business Park is a key part of our vision to build a more economically and environmentally sustainable future for our region. SWACO has proposed building this business park on 350 acres of SWACO-owned land. The goal is to bring together the recycled materials supply chain through research, technology, and advanced manufacturing through a capital investment of $350 million to $500 million. Models and projections show that the site, once developed, could create between 2,000 and 3,500 manufacturing jobs, producing between $1.6 million and $4.2 million in local tax revenues for the local community. If approved, the Green Economy Business Park will cement the Central Ohio region as an economic leader in the emerging market for recyclables and sustainable manufacturing.

Carbon Emissions Management Plan Update

A circular economy and investments in waste diversion and recycling are only part of the path to a sustainable future. SWACO and its partners in the Franklin County community are taking critical steps to reduce our region's collective carbon footprint thereby limiting our impact on climate change. SWACO has adopted a comprehensive strategy, the Carbon Emissions Management Plan, to reduce carbon emissions 64% by 2032. The goal is aligned with the International Paris Accord, which aims to limit global average temperature increases to 1.5°C. SWACO's plan addresses landfill gases, vehicle fleet and equipment, energy use and waste-management practices at all our facilities.

Waste Characterization Studies

Information and data collection is central to SWACO's success in 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 recent programs to capture commercial and industrial data, along with regular waste composition or characterization studies, will help keep SWACO programs and planning on track in the future.

Solid Waste Management Plan Update

SWACO continues to contract with consulting firms to support program planning and implementation. SWACO has begun to update the District Solid Waste Management Plan in 2022 and anticipates continuing contracts to support plan development in the future.

Diversion Analysis

In addition to data collection and waste characterization studies, SWACO will continue to conduct and fund research, studies, and analysis into various segments of the evolving waste stream, waste diversion trends, technological improvements, markets and market development, and program best practices. This research and analysis will continue to inform SWACO on additional programs and opportunities to further waste diversion in the District.

Data Collection and Waste Composition

SWACO devotes staff time to overseeing and participating in a comprehensive data collection effort. SWACO will review existing data collection processes 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 additional information such as curbside participation, set-out rates, and capture rates.

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.

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 the commercial sector 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	Recycled	Disposed	Total Generated	Waste Reduction & Recycling Rate
2021	986,865	1,233,339	2,220,204	44.4%
2022	1,010,787	1,258,094	2,268,881	44.6%
2023	1,036,128	1,283,348	2,319,477	44.7%
2024	1,062,725	1,309,113	2,371,838	44.8%
2025	1,090,787	1,335,398	2,426,185	45.0%
2026	1,126,020	1,362,215	2,488,235	45.3%
2027	1,167,960	1,375,894	2,543,853	45.9%
2028	1,217,789	1,389,711	2,607,500	46.7%
2029	1,276,614	1,401,146	2,677,760	47.7%
2030	1,332,110	1,412,681	2,744,791	48.5%
2031	1,383,211	1,424,317	2,807,529	49.3%
2032	1,434,640	1,430,422	2,865,062	50.1%
2033	1,479,816	1,436,552	2,916,368	50.7%
2034	1,524,654	1,442,710	2,967,364	51.4%
2035	1,561,656	1,448,894	3,010,550	51.9%
2036	1,599,670	1,455,104	3,054,775	52.4%
2037	1,628,955	1,461,342	3,090,297	52.7%
2038	1,658,860	1,467,607	3,126,467	53.1%

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 relatively constant through the planning period.

Table 5-4. Industrial Waste Reduction and Recycling Rate

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate
2021	326,421	35,920	362,340	90.1%
2022	330,568	35,920	366,488	90.2%
2023	334,768	35,920	370,687	90.3%
2024	339,021	35,920	374,941	90.4%
2025	347,635	35,920	383,555	90.6%
2026	356,469	35,920	392,388	90.8%
2027	365,527	35,920	401,446	91.1%
2028	374,814	35,920	410,734	91.3%
2029	393,862	35,920	429,782	91.6%
2030	413,878	35,920	449,798	92.0%
2031	413,878	35,920	449,798	92.0%
2032	413,878	35,920	449,798	92.0%
2033	413,878	35,920	449,798	92.0%
2034	413,878	35,920	449,798	92.0%
2035	413,878	35,920	449,798	92.0%
2036	413,878	35,920	449,798	92.0%
2037	413,878	35,920	449,798	92.0%
2038	413,878	35,920	449,798	92.0%

Table 5-4a. Total District Res/Com/Ind Waste Reduction and Recycling Rate

Year	Total Waste Reduced and Recycled (tons)	Total Waste Disposed (tons)	Total Waste Generated (tons)	Total Waste Reduction and Recycling Rate
2021	1,313,286	1,269,259	2,582,545	50.9%
2022	1,341,355	1,294,013	2,635,369	50.9%
2023	1,370,896	1,319,268	2,690,164	51.0%
2024	1,401,746	1,345,033	2,746,779	51.0%
2025	1,438,422	1,371,318	2,809,740	51.2%
2026	1,482,489	1,398,134	2,880,623	51.5%
2027	1,533,486	1,411,813	2,945,299	52.1%
2028	1,592,603	1,425,630	3,018,234	52.8%
2029	1,670,476	1,437,066	3,107,542	53.8%
2030	1,745,988	1,448,601	3,194,589	54.7%
2031	1,797,090	1,460,237	3,257,327	55.2%
2032	1,848,518	1,466,341	3,314,860	55.8%
2033	1,893,694	1,472,472	3,366,166	56.3%
2034	1,938,532	1,478,629	3,417,162	56.7%
2035	1,975,534	1,484,813	3,460,348	57.1%
2036	2,013,549	1,491,024	3,504,573	57.5%
2037	2,042,833	1,497,262	3,540,094	57.7%
2038	2,072,738	1,503,526	3,576,264	58.0%

Chapter 6: Cost and Financing of Plan Implementation

Chapter 6 provides a summary of the budget for SWACO's Programs for the reference year (2021) and the first 6 years of the Plan (2024 - 2030) only. 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 purposes detailed in divisions (G)(1) to (10) of Ohio Revised Code Section 3754.57.

The Plan identifies the $5.00 per ton Generation Fee collected by SWACO as the primary source of funding for the implementation of the Plan. The Plan also identifies those programs SWACO is to fund during the planning period and estimates the amount to be spent on each program.

SWACO must demonstrate in Appendix O and in this chapter that adequate funding is available to implement the approved Plan. The analysis incorporates annual projections for revenues, expenses, and resultant 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 provides a 6-year excerpt of the total planning year budget. Detailed information about the entire 15-year planning budget is provided in Appendix O.

A. OVERVIEW OF SWACO'S BUDGET

SWACO is proud to continue and expand virtually all of the comprehensive programming described in this planning document. This chapter and Appendix O illustrate how this 'best practices' programming can be provided in a financially sustainable manner with no increase in the existing Generation Fee. SWACO recognizes the responsibility of being a state leader in progressive environmental action and carbon reduction while remaining an accountable steward of public funds.

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 $11.6 million in 2024 to $8.8 million in 2030. Capital projects will total $16.9 million during this same period.

Budgetary projections show SWACO will have ample revenue to finance the implementation of the programs and initiatives described throughout this Plan. SWACO estimates a carryover balance of $7.7 million in 2021, the reference year of the Plan, and a balance of $3.2 million in 2030.

The SWACO Executive Director, Board, Planning Committee, and Team were involved in developing this sustainable, long term financial plan. Multiple revenue and expense scenarios were identified and analyzed to ensure that sufficient funds would be available to continue best-in-class programming in Franklin County. Together, SWACO arrived at this financial solution that does not require raising the generation fee, which has remained at $5.00 per ton since 2005.

B. REVENUE

Overview of How Solid Waste Management Districts Earn Revenue

There are several mechanisms solid waste management districts can use to raise the revenue necessary to finance their solid waste management plans. The two most 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. Since SWACO levies a generation fee and not a disposal fee, only the generation fee mechanism will be discussed in the Plan.

Generation Fees (See Ohio Revised Code Section 3734.573)

SWACO has levied a $5.00 per ton generation fee since 2005. During the 2021 reference year, SWACO's Generation Fee revenue was $6.18 million. Total revenue was $6.25 million. It is projected that generation fee revenue will increase at about 2% per year through the duration of the planning period, from $6.3 million in 2024 to $7.1 million in 2030.

After identifying program needs through the plan development process, it was determined that the $5.00 per ton generation fee would not be sufficient to fund all of the significant new programs that are contemplated under the Plan, such as the potential development of a compost facility, the construction of a new Education Center, the establishment of an HHW/Convenience Center, and continued investment in recycling and organics carts. Many of these programs could require significant capital investments. After evaluating several funding options, SWACO has determined that it can retain a positive fund balance throughout the planning period by utilizing an internal funding mechanism to supplement the generation fee revenue.

Financial Sustainability with Use of an Allocated Dollar from the Tipping Fee

Rather than raising the generation fee, with this Plan, SWACO will allocate $1.00 per ton from the existing tipping fee to implement the Plan, supplementing the generation fee revenue. This allocation will have no impact on the tipping fee charged at the landfill and transfer facilities, and therefore will have no impact on users of those facilities.

The continued use of this $1.00 per /ton allocated fee allocation for waste reduction programming is now denoted in the Other Income Table O-5 and in Table 6-1. In addition to allocating this $1.00 per ton for future plan implementation, SWACO is allocating an amount equivalent to an accumulation of the $1.00 per ton fee from 2017 (the year that the tipping was last adjusted) to the end of 2021 (the reference year). At the time of the last tipping fee adjustment in 2017, SWACO recognized that there might be a need to devote some of the fee towards Plan implementation. Therefore, the tables in this Plan show a one-time entry of $6,885,738 in 2022 to account for this accumulated funding, which includes an accumulation of $5,647,697 and an estimated $1,238,041 for 2022. From that point forward the Plan projects annual revenue from this allocated fee from $1.3 million dollars in 2023 to $1.4 million in 2030, consistent with tonnage projections that were used for projecting the generation fee revenue.

OEPA requires that the District clearly explain whether a change in $5.00 per ton Generation Fee is anticipated. SWACO has presented in Appendix O and in Chapter 6 a thorough but responsible budget for the planning period. Revenue projections are conservative and budget projections are prudent and consistent with the overall waste reduction programs and strategies. SWACO projects that the continued use of the $1.00 per ton "Allocated Dollar" from the tipping fee at the landfill and transfer facilities will be sufficient to maintain the financial viability of the District over the 15-year planning period and ensure a responsible and sustainable fund balance. Therefore,

SWACO does not anticipate that an increase in the $5.00 per ton Generation Fee will be needed during the Planning Period.

Financially Responsible Budget with No Increase in the Generation Fee

SWACO recognizes the responsibility of being a state leader in recycling and waste reduction programs, while remaining an accountable steward of public funds. SWACO is proud to continue and expand on the ambitious and comprehensive programming described in this planning document. Chapter 6 and Appendix O illustrate how this 'best practices' programming can be provided in a financially sustainable manner with no increase in the existing $5.00 per ton Generation Fee.

The current 15-year planning period is from 2024 to 2038. SWACO will remain focused on prudent financial management during this 15-year planning period. SWACO will continue to revisit the generation fee, "Allocated Dollar", fund balance, and budget annually, and on a five-year cadence as each subsequent 15-year solid waste plan is updated and ratified as required by the OEPA.

Other Sources of Revenue

SWACO has historically received limited amounts of "Other Revenue Sources" as outlined in Table O-5 including:

- 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. SWACO has also received grants from U.S. EPA, The Recycling Partnership, the World Wildlife Fund (WWF), and the Natural Resources Defense Council (NRDC). SWACO will continue to seek out grant opportunities that align and support our activities.
- Recycling Revenue – SWACO has periodically received revenue from recyclable materials recovered through the Recycling Drop-off Program.
- Interest Income – This is comprised of funds generated from interest generated from the fund balance .
- Other Revenue – Miscellaneous revenues sources include restitution for illegal dumping court cases, community contributions (repayment) for recycling cart purchases, and other non-recurring revenues.

SWACO has adopted a conservative model for 2023 to 2038 income projections due to the variability and uncertainty of some of these revenue sources. No Recycling Revenue, Interest, Grants, or Other Revenue is included in the projections from 2023 to 2038, since those revenue streams are difficult to predict.

Allocated Dollar Fund Balance

Note that the 2022 Allocated Dollar revenue includes the projected $1,294,013 from the $1.00 per ton allocation plus the 2021 calculated fund balance of $5,588,725 for a total Allocated Dollar of $6,885,738. Subsequent planning years reflect only the $1.00 per ton annual revenue.

Summary of Revenue

The following table presents SWACO's total revenue by source for the reference year (2021) and the first 6 years of the Plan (2024- 2030). Total revenue is projected to remain stable and reliable, increasing from $7.5 million in 2024 to $8.5 million in 2030 which includes the Allocated Dollar amount as shown in Table 6-1.

Traditionally, revenue for SWACO's Programs Department is generated primarily through generation fees with the addition of the Allocated Dollar. This source of funding is projected to be used by SWACO to generate revenue over the planning period.

Table 6-1. Summary of Revenue

Year	Generation Fee Revenue	Allocated Dollar Revenue	Other Revenue	Total Revenue
2017	$5,911,075	$0	$13,009	$5,924,084
2018	$6,760,715	$0	$44,036	$6,804,751
2019	$6,393,535	$0	$355,965	$6,749,500
2020	$6,220,680	$0	$234,293	$6,454,973
2021	$6,181,189	$0	$68,539	$6,249,728
2022	$6,315,796	$6,885,738	$152,433	$13,353,967
2023	$6,181,189	$1,296,215	$0	$7,477,404
2024	$6,304,813	$1,260,963	$0	$7,565,775
2025	$6,430,909	$1,286,182	$0	$7,717,091
2026	$6,559,527	$1,311,905	$0	$7,871,433
2027	$6,690,718	$1,338,144	$0	$8,028,861
2028	$6,824,532	$1,364,906	$0	$8,189,439
2029	$6,961,023	$1,392,205	$0	$8,353,227
2030	$7,100,243	$1,420,049	$0	$8,520,292

Source(s) of information: Plan Table O-5 and Table O-6

Note 1: For purposes of the Plan, beginning in 2022 the "Allocated Dollar" is recorded as revenue to account for the balance that has accumulated from 2017 to 2021 and the amount from 2022. Thereafter it reflects the yearly projected allocation.

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 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.

Under this Plan, it is anticipated that all of SWACO's projected expenses fall into categories 1, 2, and 7.

Table 6-2.a. Summary of Estimated Annual Operating Expenses (no Capital expenses included)

	2024	2025	2026	2027	2028	2029	2030
District Admin	$361,109	$375,135	$375,695	$382,338	$392,066	$440,946	$394,865
Business Recycling	$338,951	$361,537	$361,885	$368,313	$377,823	$376,551	$380,317
Communities	$272,069	$281,370	$283,053	$287,799	$294,109	$294,525	$297,470
Outreach	$190,274	$197,537	$197,977	$201,461	$206,490	$206,044	$208,120
Public Information	$605,671	$623,313	$630,125	$640,077	$651,671	$655,663	$662,219
Schools	$224,171	$256,025	$257,328	$261,688	$267,606	$267,757	$270,434
Tours	$75,058	$79,434	$78,088	$79,760	$82,949	$81,253	$82,066
Food Waste	$545,167	$569,546	$574,352	$612,267	$651,794	$654,387	$594,531
Grants	$520,590	$536,105	$541,609	$550,233	$560,479	$563,559	$569,195
ECTF	$253,688	$260,030	$263,930	$267,889	$271,907	$274,626	$277,373
Yard Waste/Organics	$1,250,000	$1,250,000	$1,250,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000
HHW/Convenience Center	$697,500	$722,500	$1,244,664	$1,541,475	$1,794,044	$2,041,930	$2,062,319
Drop Box Recycling	$772,336	$791,645	$803,519	$815,572	$827,806	$836,084	$844,445
Total	$6,106,583	$6,304,179	$6,862,226	$7,508,873	$7,878,743	$8,193,325	$8,143,353

Table 6-2.b. Summary of Estimated Annual Capital Expenses

	2024	2025	2026	2027	2028	2029	2030
Education Center		$2,500,000	$2,500,000				
Composting Facility	$5,000,000						
HHW/Convenience Center		$3,000,000					
Organics Carts			$250,000	$500,000	$750,000	$750,000	$625,000
Recycling Carts	$500,000						
Recycling Truck			$500,000				
Total	$5,500,000	$5,500,000	$3,250,000	$500,000	$750,000	$750,000	$625,000

Source(s) of information: Plan Table O-7 and Table O-8 Budget Summary

Estimated annual operating expense categories in Table 6-2.a. include the following:

- Direct Administration – Includes 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. Also includes expenses associated with research and program development. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- Business Recycling – Includes expenditures for salaries and benefits of SWACO's business recycling program staff, along with expenses associated with providing technical assistance, education materials, incentive programs, container programs, grants, promotion of the program, and other elements of the Business Recycling program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

- Communities – Includes expenditures for salaries and benefits of SWACO's communities program staff, along with expenses associated with providing technical assistance, education materials, managing the Consortium program, implementing the recycling cart grant program, the community Recycle Right education program, cart tagging projects, waste characterization projects, specialized education projects, promotion and expenses associated with community collection events for items such as pharmaceuticals, election signs, and e-waste, promotion of the program, and implementing other elements of the Community program. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- Outreach – Includes expenditures for salaries and benefits of SWACO's outreach program staff along with expenses associated with promotional items and education materials, operation of the container loan program, educational partnerships with local government or non-profit organizations, including equipment and materials associated with those partnership programs, creation of new education materials, promotion of the program, and other elements of the Outreach program. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- Public Information – Includes expenditures for salaries and benefits of SWACO's public information program staff, reflects costs for annual District-wide educational campaigns, which includes content development, advertising, and other promotional expenses. Includes the creation and distribution of mailed, electronic, and video materials. This expense also includes maintenance and upgrades for SWACO websites, securing outside vendors for any and all program elements, and other expenses related to the public information program. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- Schools – Includes expenditures for salaries and benefits of SWACO's schools program staff, including costs associated with providing technical assistance, managing the School Consortium program, developing education materials and other resources, providing incentive programs such as the School Recycling Champion program, providing container programs, conducting research and performing waste sorts, implementing pilot projects, implementing partnership projects, and other expenses of implementing the Schools program. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- Tours – Includes expenditures for salaries and benefits of SWACO's Tours staff, includes costs for education materials, school bus reimbursements, promotional expenses, education center costs such as utilities and groundskeeping, and other costs of implementing the tours program. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- Food Waste – Includes expenditures for salaries and benefits of SWACO's food waste program staff, includes costs for development of education and promotional materials, conducting district-wide and community-specific education campaigns, providing technical assistance, providing financial incentives, implementing container programs, conducting research, establishing partnership projects, implementing pilot projects, providing grants, maintaining the SaveMoreThanFood web site, and other costs of implementing the food waste program. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- Grants – Includes expenditures for salaries and benefits of SWACO's grants program staff, includes costs for SWACO's Community Waste Reduction Grant Program, Event Waste Reduction Grant program, Special Grants, Market Development Grants, Targeted Focus Grants, other grant programs, and other costs of implementing the grants program. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- ECTF Open Dump/Litter Law Enforcement – Includes expenditures for SWACO's Environmental Crimes Task Force, which support the Franklin County Sheriff's Office and the Office of the Franklin County Prosecutor and other costs related to enforcement of solid waste laws. Includes maintenance of the itsacrime web page and hotline. Program scope, services and/or funding may change during the planning period based on annual evaluations.

- Yard Waste Waste/Organics – Includes expenditures associated with the yard waste and organics management program, which includes costs of maintaining service agreements with facilities to accept yard waste, food waste, and other organic materials from residents, businesses, and municipalities within the District. The amount also represents expenses for conducting research on appropriate options for managing and supporting yard waste and food waste diversion programs. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- HHW/Convenience Center – Includes expenditures for salaries and benefits of SWACO's HHW/Convenience Center program staff. Reflects expenditures for the HHW collection program, including contracts with facilities and service providers, costs for legal and consulting services to develop bid specifications for collection and processing of materials, education and promotional expenses, and other costs of implementing the HHW/Convenience Center program. Program scope, services and/or funding may change during the planning period based on annual evaluations.
- Drop-off – Represents expenditures for salaries and benefits of SWACO's drop-off recycling program staff, including costs associated purchase and maintenance of drop off containers, truck purchases and maintenance, fuel, recycling processing costs and contracts, education materials associated with the drop-off program, and other costs of implementing the drop-off recycling program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

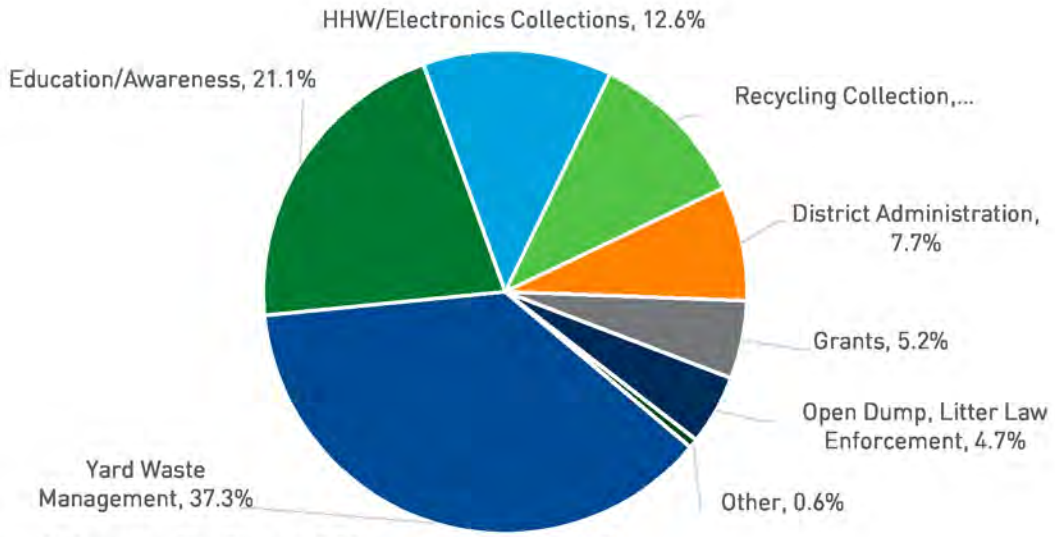
Estimated annual capital expense categories in Table 6-2.b. include the following:

- Education Center – includes all capital costs associated with the design and construction of a new education center. Could include purchase of property, although that is not anticipated at this time.
- Composting Facility - includes all capital costs associated with design and construction of a new compost facility capable of accepting food waste and other compostable materials. Could include purchase of property, although that is not anticipated at this time.
- HHW/Convenience Center - includes all capital costs associated with design and construction of a new HHW/Convenience center. Could include purchase of property, although that is not anticipated at this time.
- Organics Carts – includes all expenses associated with purchase and distribution of wheeled curbside carts for the curbside collection of food waste or co-collection of yard and food waste.
- Recycling Carts - includes all expenses associated with purchase and distribution of wheeled curbside carts for the curbside collection of residential recyclables.
- Recycling Truck – all expenses associated with purchase of a new recycling truck to service SWACO's recycling drop-off containers, which is typically done on a 5 to 7 year schedule.

Distribution of Expenses by Category

Throughout the first five years of the planning period, the distribution of expenses among categories varies slightly. Capital investments have the largest impact on the expenses by category. Yard waste management is the largest portion of the annual budget which is expected to continue as a major budget priority over the planning period.

Figure 6-2 2021 Distribution of Expenses by Category



Source of information: Plan Figure H-9.2 Expense Distribution in 2021

D. PROGRAM BUDGET SUMMARY

Table 6-3 presents a summary of the budget for the 2021 reference year and the first 6 years of the planning period (2024-2030). This summary includes revenue, expenditures, net balance, and year-end fund balance. Revenue is expected to remain financially stable with the addition of the Allocated Dollar in 2022 and continuing for the planning period. SWACO's ending balance during the first 6 years of the planning period ranges from a high of nearly $16 million in 2024, due largely to a one-time influx of funds from the balance accumulated from the "Allocated Dollar" to a low of $3.3 million in 2030. Ample funding is projected to be available to operate the programs outlined throughout the 2024 to 2030 planning period.

Table 6-3. Budget Summary

Year	Generation Fee Revenue	Allocated Dollar Revenue	Other Revenue	Operating Expenses	Capital Expenses	Total Expenses	Annual Surplus - Deficit ($)	Fund Balance
2021	$6,181,189	$0	$68,539	$5,490,237	$0	$5,490,237	$759,492	$7,749,425
2022	$6,315,796	$6,885,738	$152,433	$5,265,601	$0	$5,265,601	$8,088,366	$15,837,791
2023	$6,181,189	$1,296,215	$0	$5,564,903	$2,500,000	$8,064,903	-$587,498	$15,250,293
2024	$6,304,813	$1,260,963	$0	$6,106,583	$5,500,000	$11,606,583	-$4,040,808	$11,209,485
2025	$6,430,909	$1,286,182	$0	$6,304,179	$5,500,000	$11,804,179	-$4,087,088	$7,122,397
2026	$6,559,527	$1,311,905	$0	$6,928,438	$3,250,000	$10,178,438	-$2,307,006	$4,815,391
2027	$6,690,718	$1,338,144	$0	$7,576,078	$500,000	$8,076,078	-$47,217	$4,768,174
2028	$6,824,532	$1,364,906	$0	$7,946,957	$750,000	$8,696,957	-$507,518	$4,260,656
2029	$6,961,023	$1,392,205	$0	$8,262,220	$750,000	$9,012,220	-$658,993	$3,601,663
2030	$7,100,243	$1,420,049	$0	$8,212,938	$625,000	$8,837,938	-$317,646	$3,284,017

Source(s) of information: Plan Table O-8

E. MAJOR FACILITY PROJECTS

During the course of the planning period, SWACO is intending to move forward on 3 significant facility initiatives, each of which is in a different stage of planning and evaluation. These include a composting facility capable of accepting food waste, a new education center, and an HHW/Convenience Center.

Compost Facility

As discussed previously in this Plan, SWACO has documented that food waste is one of the highest volume waste streams currently being disposed in the landfill, and yet there isn't a single composting facility in the District authorized to accept the material for composting, requiring material to be transported out of district. This results in significant transportation costs and presents a very significant barrier to the creation and expansion of food waste diversion in the District. SWACO has completed a detailed evaluation and cost modeling of a facility that would be capable of accepting food waste from the District at sufficient scale and has completed a Request for Qualifications process to identify companies that are sufficiently experienced to design, build, and operate such a facility under a long-term contract with SWACO. The next step in the process is to issue an RFP to seek formal proposals to build such a facility. SWACO has budgeted $7,000,000 to contribute to the construction of such a facility as soon as the 2023 -2024 timeframe, although those costs and time frames are subject to change. This facility would be designed to serve as a critical component of the waste diversion infrastructure in the District for the next 20 years or more. The facility could be operational in 2025 with startup of Residential curbside material in 2026. Collection cart purchases to support the facility are projected to be $2,875,000 total starting in 2026 and continuing until 2030.

HHW Convenience Center

In 2021 SWACO began a formal evaluation of the HHW program and the possibility of establishing a "Convenience Center" that would be available to all Franklin County residents that could potentially accept a wide variety of recyclable materials beyond HHW. For instance, a Convenience Center might be able to accept a mix of materials including traditional recyclables, yard waste, scrap tires, E-waste, appliances, scrap tires, polystyrene, usable furniture, and textiles. The expansion and consolidation of this popular and impactful program would include a $3,000,000 capital cost in 2025 and an increase in annual operational expenses of 1,000,000 from 2026 – 2028.

Environmental Education Center

In the 2023-2024 timeframe, SWACO plans to begin designing a new educational facility, with construction planned during 2025-2026. This new facility will be designed with engaging, high-impact, interactive displays and activities focused on the importance of reducing waste, recycling, and composting. The capital cost for the expansion of the existing education center is projected to be $5,000,000 over 2025-2026 .

Facility Planning, Siting, and Financial Evaluation

As SWACO continues to evaluate these facilities, additional potential solutions will continue to be explored, and other solutions are not precluded by the budgeting for these facilities in the Plan. The SWACO Executive Director, SWACO Board, and Team will be completing a thorough cost analysis of the potential capital and operational costs of each of these facilities prior to any final decisions or expenditures. The analysis will take into consideration community needs and the priorities identified in this Plan. Further, the District may consider a phased-in approach with some projects that may expand over the planning period to include a full-service program. Examples of this phase-in strategy could be the Composting/Organics Processing Facility and the HHW Convenience center, that may be expanded over the planning period based on actual costs, volumes, and efficiencies/economies of scale.

The Front Load Recycling Collection Truck schedule to be replaced in 2026 at the end of its projected service period is budgeted at $500,000. Total potential capital costs associated with these projects, over the 2023 to 2030 planning period, include:

Table 6-4 Major Facility Capital Expense Estimates from 2023-2030

Year	Environmental Education Center	HHW Center	Composting Facility	Organics Carts	Recycling Carts	Recycling Truck	Total Capital
2023			$2,000,000		$500,000		$2,500,000
2024			$5,000,000		$500,000		$5,500,000
2025	$2,500,000	$3,000,000					$5,500,000
2026	$2,500,000			$250,000		$500,000	$3,250,000
2027				$500,000			$500,000
2028				$750,000			$750,000
2029				$750,000			$750,000
2030				$625,000			$625,000
Total	$5,000,000	$3,000,000	$7,000,000	$2,875,000	$1,000,000	$500,000	$19,375,000

Appendix A: Miscellaneous Information

Appendix A establishes the reference year used for this plan update, planning period, goal statement, material change in circumstances and explanations of differences in data.

A. REFERENCE YEAR

The reference year for this solid waste management plan is 2021. Since the plan is being drafted in 2022 and 2023, some information may also reflect activities that occurred in 2022, but it will be noted if this is the case.

B. PLANNING PERIOD

The planning period for this solid waste management plan is 2024 to 2038.

C. GOAL STATEMENT

SWACO will achieve the following Goal:

Goal 2: SWACO shall reduce and recycle at least 25 percent of the solid waste generated by the residential/commercial sector. SWACO is committed to achieving Goal 2, however, the District intends to meet the requirements of Goal 1, as well.

D. EXPLANATIONS OF DIFFERENCES BETWEEN DATA PREVIOUSLY REPORTED AND DATA USED IN THE SOLID WASTE MANAGEMENT PLAN

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

- Data does not differ

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

- Data does not differ

E. 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:

Assurance of Waste Disposal Capacity

Reduction in Available Capacity

The designated facilities in this Plan Update are: the Franklin County Sanitary Landfill, the Morse Road Transfer Facility, and the Jackson Pike Transfer Facility. Both transfer stations deliver all of the solid waste that they

receive to the Franklin County Sanitary Landfill. Additional facilities can be utilized by SWACO if the Board approves a waiver for the facility.

The transfer facilities are operated in order to provide convenience and efficiency for the waste haulers operating in the District, but are not necessary to provide or demonstrate capacity, since all of the material received is delivered to the Franklin County Sanitary Landfill. While SWACO intends to continue to operate both facilities for the duration of the planning period, the temporary or permanent closure of either transfer facility (or both) would result in haulers having to transport the waste a relatively nominal additional distance to deliver the waste directly to the landfill. Therefore, the only critical disposal infrastructure is the landfill when it comes to disposal capacity. As a result, if the Board determines that the extended or permanent closure of the Franklin County Sanitary Landfill 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 at alternate facilities.

The Board, within 30 days of the closure of Franklin County Sanitary Landfill, 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.

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.

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.

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 343.022 of the Revised Code ("Tipping Fees") may also be utilized to fund Plan activities.

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. Given the rapid population growth within Franklin County, and the addition of significant investments such as the Intel plant in New Albany that will spur further population and business growth, it is unlikely that SWACO will experience such a reduction. Nevertheless, 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.

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.

Appendix B: Recycling Infrastructure Inventory

Appendix B provides an inventory of the recycling infrastructure that existed in the reference year. This inventory covers residential curbside collection services, drop-off recycling sites, mixed waste materials recovery facilities, waste companies providing recycling collection and trash collection services and composting facilities and yard waste management programs.

A. CURBSIDE RECYCLING SERVICES, DROP-OFF RECYCLING LOCATIONS, AND MIXED SOLID WASTE MATERIALS RECOVERY FACILITIES

Curbside Recycling Services

The following tables summarizes the number of curbside recycling programs and the tons recycled by the programs. Residents mix all recyclables (single stream) in bins or carts for curb collection.

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

ID #	Name of Curbside Service	Service Provider	Collection Frequency	Materials Collected[1]	Type of Collection	PAYT[2] (Y/N)	Weight of Materials Collected (tons)
NSC1	Bexley (City)	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	1,247
NSC2	Blendon Township	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	550
NSC3	Brice (Village)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	5
NSC4	Canal Winchester (City)	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	575
NSC5	Clinton Township	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	219
NSC6	Columbus (City)	Rumpke	Bi-weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	30,842
NSC7	Dublin (City)	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	4,620
NSC8	Gahanna (City)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	2,578
NSC9	Grandview Heights (City)	Community	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	980
NSC10	Grove City (City)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	3,556
NSC11	Groveport (City)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	234
NSC12	Hamilton Township	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	204
NSC13	Hilliard (City)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	2,943
NSC14	Jackson Township	Local Waste with Grove City	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	0
NSC15	Jefferson Township	Waste Management	Bi-weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	1,081

ID #	Name of Curbside Service	Service Provider	Collection Frequency	Materials Collected[1]	Type of Collection	PAYT[2] (Y/N)	Weight of Materials Collected (tons)
NSC16	Lockbourne (Village)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	17
NSC17	Madison Township	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	408
NSC18	Marble Cliff (Village)	Community with Grandview Heights	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	N/A
NSC19	Mifflin Township	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	163
NSC20	Minerva Park (Village)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	159
NSC21	New Albany (City)	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	914
NSC22	Norwich Township	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	444
NSC23	Perry Township	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	452
NSC24	Plain Township	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	461
NSC25	Pleasant Township	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	430
NSC26	Reynoldsburg (City)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	2,077
NSC27	Riverlea (Village)	Multiple	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	65
NSC28	Sharon Township	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	120
NSC29	Truro Township	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	46
NSC30	Upper Arlington (City)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	4,252
NSC31	Urbancrest (Village)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	38
NSC32	Valleyview (Village)	Rumpke	Bi-weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	0
NSC33	Washington Township	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	137
NSC34	Westerville (City)	Rumpke	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Automated	N	3,144
NSC35	Whitehall (City)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	951
NSC36	Worthington (City)	Local Waste	Weekly	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, Manual	N	1,662
Total							65,573

[1]Cc = Corrugated Cardboard, Mp = Mixed Paper, Gl = Glass Bottles & Jars, Pl = Plastic (any plastic container shaped like a bottle, jug, or tub), As = Aseptic Containers, Al = Aluminum Cans, Sc = Steel Cans

[2]PAYT = Pay-As-You-Throw, Source:

2021 District data

All cities and villages in the SWMD have non-subscription or subscription curbside most achieved through contracts between the municipality and a trash hauler. Some contracting approaches still leave the billing of customers up to the service providers while others do their own billing and pay the hauler independently. Public-private contracts determine collection frequency, materials collected, size of containers, and type of collection.

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

ID #	Name of Curbside Service	Service Provider	Collection Frequency	Materials Collected [1]	Type of Collection	PAYT[2] (Y/N)	Weight of Materials Collected (tons)
SC1	Brown Township	Multiple available Haulers	N/A	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, DNR	N	N/A
SC2	Franklin Township	Multiple available Haulers	N/A	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, DNR	223	N/A
SC3	Harrisburg (Village)	Multiple available Haulers	N/A	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, DNR	N	N/A
SC4	Obetz (City)	Multiple available Haulers	N/A	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, DNR	N	N/A
SC5	Prairie Township	Multiple available Haulers	N/A	Cc, Mp, Gl, Pl, As, Al, Sc	Single Stream, DNR	N	N/A
Total						223	

[1]Cc = Corrugated Cardboard, Mp = Mixed Paper, Gl = Glass Bottles & Jars, Pl = Plastic*, As = Aseptic Containers, Al = Aluminum Cans, Sc = Steel Cans
*Plastics include: any plastic container shaped like a bottle, jug, or tub
[2]PAYT = Pay-As-You-Throw
Source: 2021 District data

Tonnage reported in Table B-1a and Table B-1b reflects the most accurate information available, which was reported by cities, villages, townships, and haulers.

Franklin Township (subscription recycling available) and Jackson Township are collected by Local Waste with Grove City. The Village of Marble Cliff is collected by the City of Grandview Heights.

Residential Recycling Contract Assistance / Consortium Program

In the SWACO jurisdiction, 31 of the 41 communities participate in some form of contract assistance. Technical guidance and legal services assist communities with writing contracts and procuring residential waste, recycling, and yard waste collection and processing services. The program provides specialized support where communities have limited capacity and creates uniform policies throughout the region. The program aids in the adoption of best practices for residential waste reduction and diversion.

Drop-Off Recycling Locations

The following tables shows the locations for drop-off recycling programs and the tons recycled by the programs:

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

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Days and Hours Available to the Public	Materials Collected [1]	Drop-off Meets Min. Standards (Y/N)	Weight of Materials Collected (tons)
FTU1	Canal Winchester, Jerry L. Garver YMCA, 6767 Refugee Rd, Canal Winchester, OH 43110	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	143
FTU2	Columbus, Audubon Center, 207 W Whittier St, Columbus, OH 43215	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU3	Columbus, Barnett Parks and Recreation Center, 1184 Barnett Rd, Columbus, OH 43227	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU4	Columbus, Bill McDonald Athletic Complex, 4990 Olentangy River Rd, Columbus, OH 43214	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	437
FTU5	Columbus, Broad Brunson Condos, 1799 E Long St, Columbus, OH 43203	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU6	Columbus, Buckeye Village Family Housing, 2724 Defiance Dr, Columbus, OH 43210	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	71
FTU7	Columbus, Central Ohio Area Agency on Aging , 3776 S. High St, Columbus, OH 43207	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU8	Columbus, Charity Newsies, 4300 Indianola Ave, Columbus, OH 43214	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	160
FTU9	Columbus, Columbus Aquatic Center, 1160 Hunter Ave, Columbus, OH 43201	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	249
FTU10	Columbus, Columbus Dog Connection, 2761 Johnstown Rd, Columbus, OH 43219	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	2
FTU11	Columbus, Columbus Recreation Department, 1533 Alum Industrial Dr. W, Columbus, OH 43207	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU12	Columbus, Dublin Green, 2349 Meadow Creek Dr, Columbus, OH 43235	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU13	Columbus, Eldon & Elsie Ward YMCA, 130 Woodland Ave, Columbus, OH 43203	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	53
FTU14	Columbus, Far East Community Recreation, 1826 Lattimer Dr, Columbus, OH 43227	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	27
FTU15	Columbus, Fire Station #17, 2250 W. Broad St, Columbus, OH 43223	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU16	Columbus, Fire Station #22, 3069 Parsons Ave, Columbus, OH 43207	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	27
FTU17	Columbus, Fire Station #26, 5433 Fisher Rd, Columbus, OH 43228	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	134

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Days and Hours Available to the Public	Materials Collected [1]	Drop-off Meets Min. Standards (Y/N)	Weight of Materials Collected (tons)
FTU18	Columbus, Fire Station #27, 7560 Smokey Row Rd, Columbus, OH 43235	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	437
FTU19	Columbus, Fire Station #28, 3240 McCutcheon Rd, Columbus, OH 43230	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	160
FTU20	Columbus, Fire Station #29, 5151 Little Turtle Way, Westerville, OH 43081	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	249
FTU21	Columbus, Fire Station #30, 3555 Fishinger Boulevard, Hilliard, OH 43026	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	321
FTU22	Columbus, Fire Station #33, 440 Lazelle Rd, Columbus, OH 43240	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	312
FTU23	Columbus, Fox and Hounds, 1075 Weybridge Rd, Columbus, OH 43220	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU24	Columbus, Junior Achievement of Central Ohio, 68 E 2nd Ave, Columbus, OH 43201	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU25	Columbus, Kroger Store, 150 West Sycamore, Columbus, OH 43215	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	214
FTU26	Columbus, Market Mowhawk Apartments, 399 S Grant Ave, Columbus, OH 43215	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU27	Columbus, MEPS, 775 Taylor Rd, Gahanna, OH, 43230	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU28	Columbus, Northcrest Park, 5095 Reed Rd, Columbus, OH 43235	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	249
FTU29	Columbus, Northland Job and Family Services, 1721 Northland Park Ave, Columbus, OH 43229	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	53
FTU30	Columbus, Northwoods, 94 Northwoods Blvd, Columbus, OH 43235	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU31	Columbus, PAST Foundation, 1003 Kinnear Rd, Columbus, OH 43212	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	36
FTU32	Columbus, School for Young Children, 93 W Weisheimer Rd, Columbus, OH 43214	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU33	Columbus, St. Stephans Community Center, 1500 E. 17th Ave, Columbus, OH 43219	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU34	Columbus, Stonebrook Condos, 3132 Dublin Rd, Columbus, OH 43221	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU35	Columbus, The Edge at Arlington, 5026 Dierker Rd, Columbus, OH 43220	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU36	Columbus, The Soldiery Games and Cards, 4256 N. High St, Columbus, OH 43214	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	134
FTU37	Columbus, Walden Woods Condos, 3095 Griggsview Ct, Columbus, OH 43221	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Days and Hours Available to the Public	Materials Collected [1]	Drop-off Meets Min. Standards (Y/N)	Weight of Materials Collected (tons)
FTU38	Columbus, Washington Place Apartments, 518 E Town St, Columbus, OH 43215	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU39	Columbus, Whole Foods, 3670 W Dublin Granville, Columbus, OH 43017	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	160
FTU40	Columbus, Wood Lake Village, 3535 Hunting Brook Dr, Columbus, OH 43231	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU41	Columbus, YMCA Sandlewood, 1640 Sandalwood Place, Columbus, OH 43229	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU42	Franklin Township, Fire Station #192, 4100 Sullivant Ave, Columbus, OH 43228	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	36
FTU43	Franklin Township, Fire Station #193, 2193 Frank Rd, Columbus, OH 43223	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	107
FTU44	Grove City, 3998 Broadway, 3998 Broadway, Grove City, OH 43123	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	27
FTU45	Grove City, Groveport Recreation Center, 3415 Grant Ave, Columbus, OH 43123	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU46	Grove City, Walmart Distribution Center, 3880 Southwest Blvd, Grove City, OH 43123	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	71
FTU47	Grove City, YMCA Urbancrest, 3500 1st Ave Grove City, Urbancrest, OH 43123	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU48	Groveport, Groveport Community Center, 7370 Groveport Rd, Groveport, OH 43125	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	89
FTU49	Hilliard Township, Kroger Store, 2525 Hilliard Rome Rd, Hilliard, OH 43026	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	499
FTU50	Jackson Township, Fire Station #203, 2620 London Groveport Rd, Grove City, OH 43123	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	249
FTU51	Lockbourne, Lockbourne Post Office, 1 Mechanics St, Lockbourne, OH 43137	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU52	Mifflin Township, Fire Station #132, 2459 Agler Rd, Columbus, OH 43224	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	9
FTU53	New Albany, New Albany Schools K-1, 5101 Swickard Woods Blvd, New Albany, OH 43054	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	45
FTU54	Pleasant Township, Fire Department, 5373 Norton Rd. , Grove City, OH 43123	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	36
FTU55	Prairie Township, Fire Station #241, 123 Inah Ave, Columbus, OH 43228	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	187
FTU56	Prairie Township, Fire Station #243, 451 Hubbard Rd, Galloway, OH 43119	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	214
FTU57	Prairie Township, Township Office, 23 Maple Dr, Columbus, OH 43228	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	125

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Days and Hours Available to the Public	Materials Collected [1]	Drop-off Meets Min. Standards (Y/N)	Weight of Materials Collected (tons)
FTU58	Westerville, Sharon Woods Metro Park, 6911 Cleveland Ave, Westerville, OH 43081	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	80
FTU59	Westerville, St. Paul Catholic Church, 313 N State St, Westerville, OH 43081	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU60	Whitehall, Whitehall Community Park YMCA, 402 N Hamilton Rd, Whitehall, OH 43213	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	18
FTU61	Worthington, Community Center, 374 Highland Ave, Worthington, OH 43085	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	53
FTU62	Worthington, E New England Ave Lot, 26 E New England Ave, Worthington, OH 43085	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	27
FTU63	Worthington, W New England Avenue Lot, 46 E New England Ave, Worthington, OH 43085	SWACO	SWACO	24 hrs, 7 days/week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	27
Total							5,853

[1]Cc = Corrugated Cardboard, Mp = Mixed Paper, Gl = Glass Bottles & Jars, Pl = Plastics (any plastic container shaped like a bottle, jug, or tub), As = Aseptic Containers, Al = Aluminum Cans, Sc = Steel Cans
Source: 2021 District data

Drop-off recycling opportunities consist of at least one 8-cubic yard containers located at each site. Recyclables are commingled.

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

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Days and Hours Available to the Public	Materials Collected [1]	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected (tons)
None							
Total							0

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

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Days and Hours Available to the Public	Materials Collected [1]	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected (tons)
FTR1	Brown Township, Fire Station #82	SWACO	SWACO	24 hours, 7 days a week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	125
FTR2	Hamilton Township, 6529 Lockbourne	SWACO	SWACO	24 hours, 7 days a week	Cc, Mp, Gl, Pl, As, Al, Sc	Yes	107
Total							232

[1]Cc = Corrugated Cardboard, Mp = Mixed Paper, Gl = Glass Bottles & Jars, Pl = Plastics (any plastic container shaped like a bottle, jug, or tub), As = Aseptic Containers, Al = Aluminum Cans, Sc = Steel Cans
Source: 2021 District data

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

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Days and Hours Available to the Public	Materials Collected [1]	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected (tons)
None							
Total							0

Approximately 6,085 tons of materials were recycled by 63 full-time urban drop-offs and 2 full-time rural drop-offs.

Note that the inventory of urban and rural drop offs was an accurate representation of the 2021 planning year. SWACO does not own the property upon which these drop-offs are located. Consequently, property owners may during the planning period request that a drop off location be removed or relocated. This inventory is fluid and subject to continuous update. A current inventory is available on the SWACO website.

SWACO continuously reviews each drop off site location for generation, contamination, illegal dumping activity, and appearance. From this review, SWACO adjusts the number of bins, locations, and placements accordingly to enhance participation, minimize contamination, and provide a safe clean environment.

SWACO expects that in the first years of the planning period an additional 5 to 10 drop off locations will be identified to enhance service to multi-family housing developments and small businesses. During the last half of the planning period, SWACO expects that the number of public drop off locations will decrease as individual unit multi-family housing recycling opportunities are developed.

Mixed Municipal Solid Waste Material Recovery Facility

Table B-3: Mixed Municipal Solid Waste Material Recovery Facility

Name of Material Recovery Facility	Location	Communities Served	Types of Materials Recovered [1]	Weight of Materials Recovered (tons)	Waste Processed (tons)	Bypass Waste (tons)	Total Waste (tons)	Recovery Rate in Reference Year (%)
None								0
Total				0	0	0	0	0

A mixed solid waste materials recovery facility provides residents with access to recycling opportunities by removing recyclables from the trash for the residents. The District does not use a mixed waste material recovery facility (aka dirty MRF) to separate recyclables from trash.

B. CURBSIDE RECYCLING AND TRASH COLLECTION SERVICE PROVIDERS

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

Name of Provider	Counties Served	PAYT (Y/N)	RES Trash	COM Trash	IND Trash	RES Recycle	COM Recycle	IND Recycle
2 Women With A Pickup Truck And Trailer Too LLC	Franklin			✓			✓	
A.S.A.P Junk Removal & Hauling Corp	Franklin			✓				
A1 Dumpster & Hauling Inc.	Franklin			✓	✓			
AAA Affordable Hauling	Franklin			✓	✓			

Name of Provider	Counties Served	PAYT (Y/N)	RES Trash	COM Trash	IND Trash	RES Recycle	COM Recycle	IND Recycle
Alpha waste services llc	Franklin							
At Your Disposal Hauling	Franklin			✓				
BBU Services, Inc.	Franklin				✓			
Boren Brothers	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			✓	✓			
Donkey Dumpster	Franklin							
EnviroServe	Franklin				✓			
Farmer's Refuse & Trucking Inc	Franklin			✓	✓		✓	✓
Frog Hauling LLC	Franklin			✓			✓	
Global Container Service Inc.	Franklin			✓			✓	
Grandview Heights	Franklin		✓			✓		
Hamilton Alliance Inc.	Franklin			✓			✓	
HEPACO	Franklin				✓			
I-Haul Waste Removal	Franklin			✓				
Junk Fellas LLC	Franklin			✓				
Junk King	Franklin			✓	✓		✓	✓
Junk N More — Junk Removal Columbus	Franklin			✓				
Local Waste Services	Franklin	Y	✓	✓	✓	✓	✓	✓
Luxury Waste Services	Franklin			✓			✓	
Mid-Ohio Sanitation & Recycling	Franklin			✓	✓			
OSU Facilities Operations	Franklin			✓			✓	
PLG Junk Removal And Hauling Services LLC	Franklin							
Pride Hauling & Recycling, LLC	Franklin			✓	✓		✓	✓
Republic Services	Franklin		✓	✓	✓	✓	✓	✓
Rumpke	Franklin		✓	✓	✓	✓	✓	✓
Srose Enterprises LTD (dba 1-800-GOT-JUNK)	Franklin			✓	✓		✓	✓
Stress Free Junk Hauling	Franklin			✓				
The Junkluggers of Columbus Ohio	Franklin			✓			✓	
Trace's Sanitation LLC	Franklin			✓	✓			
TrashCab Columbus, LLC	Franklin			✓			✓	
Waste Management	Franklin		✓	✓	✓	✓	✓	✓
Wee-Haul Dumpster Service	Franklin			✓	✓			
Total		1	8	33	19	5	18	9

Source: 2022 web and desktop research
Note: PAYT = Pay-As-You-Throw, RES = Residential, COM = Commercial, IND = Industrial

The list of haulers was obtained through surveys and online research. The following entities 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.

C. COMPOSTING FACILITIES

Table B-5: Inventory of Compost Facilities Used in the Reference Year

Facility Name	Compost Facility Class.	Publicly Accessible (Y/N)	Location	Food Waste (tons)	Yard Waste (tons)	Total
London Correctional Institution	II	N	1580 Ohio 56, London	428	0	428
Price Farms Organics Ltd	II	Y	4838 Warrensburg Road, Delaware	3,907	33	3,941
Garick LLC Paygro Division	II	Y	11000 Huntington Road, South Charleston	7		7
KBCO Frank Road Compost Facility	IV	Y	711 Frank Road, Columbus		39,513	39,513
Kurtz Bros Inc	IV	Y	6279 Houchard Road, Amlin		18,619	18,619
Kurtz Bros Inc	IV	Y	6055 Westerville Road, Westerville		51,773	51,773
Kurtz Brothers-Brookside	IV	Y	2409 Johnstown-Alexandria Road, Alexandria		9,455	9,455
McCullough's Landscaping and Nursery, LLC	IV	N	14401 Jug Street, New Albany		1,010	1,010
Number One Landscape	IV	N	3775 Ridge Rd, Medina		51	51
Ohio Mulch Supply Inc	IV	N	2140 Advance Avenue, Columbus		149,756	149,756
Park Enterprise Construction Co Inc	IV	N	560 Barks Road West, Marion		33	33
Hope Timber Pallet & Recycling	IV	N	141 Union St, Newark		2,640	2,640
Total				4,342	272,883	277,224

Source: 2021 Ohio EPA Compost Facility Planning Analytical Report

D. OTHER FOOD WASTE AND YARD WASTE MANAGEMENT PROGRAMS

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

Facility or Activity Name	Activity Type	Food Waste (tons)	Yard Waste (tons)
City of Columbus Compost Facility (Com-Til)	Mulching Operations	0	21,115
Bexley (City)	Community Yard Waste Collection	0	1,355
Blendon Township	Community Yard Waste Collection	0	496
Brice (Village)	Community Yard Waste Collection	0	5
Clinton Township	Community Yard Waste Collection	0	57
Columbus (City)	Community Yard Waste Collection	0	21,947
Dublin (City)	Community Yard Waste Collection	0	3,166
Franklin Township	Community Yard Waste Collection	0	N/A
Gahanna (City)	Community Yard Waste Collection	0	3,321
Grandview Heights (City)	Community Yard Waste Collection	0	798
Grove City (City) and Jackson Township	Community Yard Waste Collection	0	2,203
Groveport (City)	Community Yard Waste Collection	0	355
Hamilton Township	Community Yard Waste Collection	0	131
Hilliard (City)	Community Yard Waste Collection	0	2,111
Jefferson Township	Community Yard Waste Collection	0	1
Lockbourne (Village)	Community Yard Waste Collection	0	126
Madison Township	Community Yard Waste Collection	0	495
Mifflin Township	Community Yard Waste Collection	0	119
Minerva Park (Village)	Community Yard Waste Collection	0	107
New Albany (City)	Community Yard Waste Collection	0	392
Norwich Township	Community Yard Waste Collection	0	399
Perry Township	Community Yard Waste Collection	0	N/A
Plain Township	Community Yard Waste Collection	0	N/A
Pleasant Township	Community Yard Waste Collection	0	179
Reynoldsburg (City)	Community Yard Waste Collection	0	1,530
Riverlea (Village)	Community Yard Waste Collection	0	44
Truro Township	Community Yard Waste Collection	0	50
Upper Arlington (City)	Community Yard Waste Collection	0	2,923
Urbancrest (Village)	Community Yard Waste Collection	0	N/A
Valleyview (Village)	Community Yard Waste Collection	0	N/A
Washington Township	Community Yard Waste Collection	0	414
Westerville (City)	Community Yard Waste Collection	0	3,482
Whitehall (City)	Community Yard Waste Collection	0	681
Worthington (City)	Community Yard Waste Collection	0	1,401
Bexley (City)	Curbside Food Waste Collection	103	0
Dublin (City)	Drop-off Food Waste Collection	73	0
Grandview Heights (City)	Drop-off Food Waste Collection	55	0
Grove City (City)	Drop-off Food Waste Collection	9	0
Hilliard (City)	Drop-off Food Waste Collection	15	0
Westerville (City)	Drop-off Food Waste Collection	61	0
Worthington (City)	Drop-off Food Waste Collection	26	0
Upper Arlington (City)	Drop-off Food Waste Collection	189	0
Franklinton Gardens	Community Garden	9	9
Hauler/Grocer Food Waste Data	N/A	4,761	0
Total		5,302	69,413

Source: 2021 Ohio EPA Compost Facility Planning Analytical Report, Hauler/Grocer food waste diverted was obtained from Ohio EPA.

E. MATERIAL HANDLING FACILITIES USED BY THE SWMD IN THE REFERENCE YEAR

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

Facility Name	County	State	Type of Facility	Weight of Material Accepted (tons)
Rumpke Waste Recycling - Columbus: Residential	Franklin	OH	MRF	59,378
Rumpke Waste Recycling - Columbus: Commercial	Franklin	OH	MRF	20,324
Rumpke Center City Recycling - Hamilton County: Commercial	Hamilton	OH	MRF	685
Rumpke Recycling - Dayton: Residential	Montgomery	OH	MRF	1
Dayton Glass Plant: Commercial	Montgomery	OH	MRF	19,370
Rumpke - Chillicothe: Commercial	Ross	OH	MRF	92
Waste Management - Akron MRF: Residential	Summit	OH	MRF	133
Waste Management - Akron MRF: Commercial	Summit	OH	MRF	64
Total				100,048

Source: Material Recovery Facility and Commercial Recycling Data", Ohio EPA, 2021.
Note: MRF = material recovery facility

Six facilities reported receiving Franklin County recyclable materials. All are material recovery facilities (MRF) and perform some level of processing materials to market. These facilities reported approximately 100,048 tons of materials collected from SWACO.

APPENDIX C: POPULATION DATA

The population of Franklin County as of July 1, 2021, was estimated to be 1,326,780. The community populations added or subtracted to the Franklin County total in order to obtain the total District population for the reference year (2021) are shown in Table C-1. Each of these estimates is based on MORPC publication "MORPC Population Estimates" published in April 19, 2022. 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 1,383,836.

A. REFERENCE YEAR POPULATION

Table C-1a: Reference Year Population Adjustments

Community	Franklin
Before Adjustment	1,326,780
Additions	
City of Canal Winchester	1,987
City of Columbus	25,959
City of Dublin	8,605
City of New Albany	46
City of Reynoldsburg	11,311
City of Westerville	9,291
Subtractions	
Village of Lithopolis	49
City of Pickerington	94
After Adjustment	1,383,836

Source: " MORPC Population Estimates" prepared by MORPC, Central Ohio Population Resource Hub, April 19, 2022

The following table summarizes the unadjusted versus adjusted population.

Table C-1b: Total Reference Year Population

Total Reference Year Population	
Unadjusted Population	*Adjusted Population*
1,326,780	1,383,836

B. POPULATION PROJECTIONS

Population projections 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 of Franklin County since a majority of the population is linked to this area.

Projections were also considered provided by MORPC publication of Mid-Ohio Regional Planning Commissions County Growth Projections 2020-2050 with straight-line calculations applied to the years between the five-year projections. These projections are captured in Table C-2.

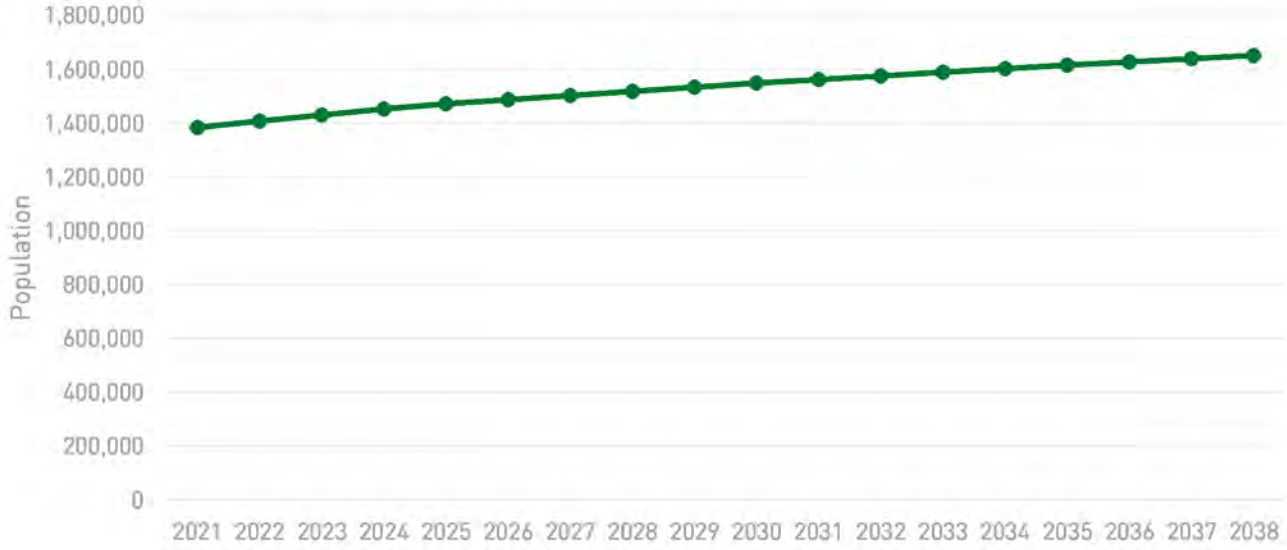
Table C-2: Population Projections

Year	Franklin County ODSA Projection	Franklin County MORPC Projection
2021	1,383,836	1,383,836
2022	1,385,188	1,406,721
2023	1,386,541	1,429,607
2024	1,387,893	1,452,492
2025	1,385,388	1,471,521
2026	1,394,588	1,486,834
2027	1,403,788	1,502,148
2028	1,412,988	1,517,461
2029	1,422,188	1,532,774
2030	1,431,388	1,548,088
2031	1,440,204	1,561,579
2032	1,449,020	1,575,070
2033	1,457,836	1,588,561
2034	1,466,652	1,602,052
2035	1,475,468	1,615,543
2036	1,484,288	1,627,428
2037	1,493,108	1,639,313
2038	1,501,928	1,651,199

Source: ODSA Projection: Ohio Development Services Agency, "Population Projections: County Totals" April 2018.
MORPC Projection: Mid-Ohio Regional Planning Commissions Population Estimates" Web. 15 July 2022

Figure C-1 depicts the historical and projected population for SWACO demonstrating a consistent population increase. SWACO's jurisdiction is anticipated to grow 13.7% during the planning period or an average of 0.97% per year (13,3247 persons).

Figure C-1 Historical and Projected Population with MORPC Projections



APPENDIX D: DISPOSAL DATA

A. REFERENCE YEAR WASTE DISPOSED

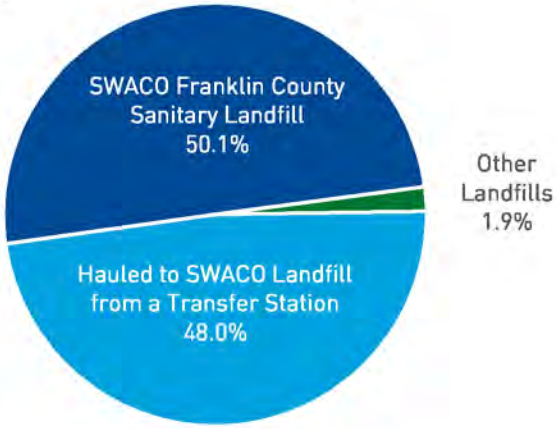
Table D-1a: Waste Disposed in Reference Year – Publicly Available Landfills (Direct Haul)[1]

Facility Name	Location		Waste Accepted from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
In-District						
SWACO Franklin County Sanitary Landfill	Franklin	OH	613,594	32,154	0	645,748
Out-of-District						
Pine Grove Regional Facility	Fairfield	OH	18,746	2,491	165	21,403
Hancock County Landfill	Hancock	OH	1	0	0	1
American Landfill, Inc.	Stark	OH	0	2	0	2
Suburban Landfill Inc	Perry	OH	251	1,194	910	2,355
Crawford County Landfill	Crawford	OH	132	0	0	132
Evergreen Recycling & Disposal	Wood	OH	13	0	0	13
Athens-Hocking Landfill	Athens	OH	3	0	0	3
Kimble Sanitary Landfill	Tuscarawas	OH	0	71	0	71
Stony Hollow Landfill Inc	Montgomery	OH	16	0.44	0	16
Out-of-State						
Caldwell Landfill	Shelby	IN	0	0.3	0	0
National Serv-All Landfill	Allen	IN	0	6	0	6
Total			632,756	35,920	1,075	669,751

[1] The facilities listed in Table D-1a and identified as able to accept waste from the SWACO (in Appendix M) will constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).
Excluded wastes are classified as slag, uncontaminated earth, non-toxic fly ash, spend non-toxic foundry sand and material from mining, construction, or demolition operations.
Source: Ohio EPA. "2021 Ohio Facility Data Report Tables". September 20, 2022.
Ohio EPA. "Disposal Recycling and Generation Analytic. Summary for 2022"

Waste flows to the landfills either by direct haul or through a transfer facility. Approximately 52 percent of the waste was direct hauled, meaning a refuse truck picked up waste from clients and directly hauled that waste to a landfill for disposal. Direct hauled waste is disposed in in-state and out-of-state landfill facilities. The majority (98.1%) of waste was disposed at the SWACO Franklin County Sanitary Landfill owned by SWACO. Of all waste disposed, 3.4 percent was alternate daily cover (1.9% to SWACO landfill and 1.5% to Pine Grove Regional Facility).

Figure D-1 In-State Landfill Disposal (2021)



A wide variety of wastes are disposed in municipal solid waste landfills. Waste generated from households, commercial businesses, institutions, and industrial plants. In addition, asbestos (if permitted to do so), construction and demolition debris, dewatered sludge, contaminated soil, and incinerator ash. More District waste from residential and commercial sources was disposed than from industrial sources.

Table D-1b: Waste Disposed in Reference Year – Captive Landfills[1]

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

[1] The facilities listed in Table D-1a and identified as able to accept waste from the SWMD (in Appendix M) will constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).
Source(s) of Information: Source: Ohio EPA. "2021 Ohio Facility Data Report Tables". September 20, 2022.
Ohio EPA. "Disposal Recycling and Generation Analytic. Summary for 2021"

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

Source(s) of Information: Facility Annual Operational Reports for 2021

Table D-2 Reference Year Waste Transferred[1]

Facility Name	Location		Waste Accepted from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
In-District						
SWACO Jackson Pike Transfer Facility	Franklin	OH	290,128	0	0	290,128
SWACO Morse Road Transfer Facility	Franklin	OH	288,013	0	0	288,013
Republic Services Inc Reynolds Ave Transfer Facility	Franklin	OH	0	0	11,647	11,647
Waste Management of Ohio Transfer and Recycling	Franklin	OH	6,551	0	2,911	9,462
Local Waste Services Inc	Franklin	OH	15,863	0	3,494	19,356
Rumpke Waste Inc Columbus Transfer & Recycling Facility	Franklin	OH	28	0	0	28
Out-of-District						
None						0
Out-of-State						
None						0
Total			600,583	0	18,052	618,634

[1] The facilities listed in Table D-2 and identified as able to accept waste from the SWMD (in Appendix M) will constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).
Source(s) of Information: Source: Ohio EPA. "2021 Ohio Facility Data Report Tables". September 20, 2022.
Ohio EPA. "Disposal Recycling and Generation Analytic. Summary for 2021"

In cases where waste is hauled from a transfer facility to a landfill, the county of origin is not recorded at the landfill. This means a load of trash disposed in a landfill from a transfer facility could have waste mixed from several counties. When a transfer facility hauls to more than one landfill, it becomes difficult to track which landfill received a county's waste. For planning purposes the waste hauled through transfer facilities is listed separately identifying possible destination landfills. Approximately 49 percent of the waste was transferred, meaning a refuse truck picked up waste from clients and hauled that waste to a transfer facility. Waste was tipped, reloaded into transfer trucks, and hauled to landfills for disposal.

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

Facility Name	Facility Type	Location		Waste Accepted from the SWMD			
		County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Clean Earth Environmental Solutions Inc	RRS	Marion	IN	0	0.04	0	0
Covanta Environmental Solutions	SF	Marion	IN	0	503	0	503
Covanta Environmental Solutions LLC	SF	Porter	IN	0	693	0	693
EQ Industrial Services Processing	SF	Marion	IN	0	3	0	3
Indianapolis Resource Recovery Facility	I	Marion	IN	0	1,632	0	1,632
Medassure of Indiana Treatment Facility	MWP	Marion	IN	29	0	0	29
Merrell Brothers Inc Indy Disposal Solutions	SF	Marion	IN	0	8	0	8
Tradebe Treatment & Recycling LLC	SF	Lake	IN	0	63	0	63
Total				29	2,902	0	2,932

Note: RRS = Resource Recovery System, SF = Solidification Facility, I = Solid Waste Incinerator →= 10 Tons/Day, MWP = Medical Waste Processor

Source(s) of Information: Source: Ohio EPA. "2021 Ohio Facility Data Report Tables". September 20, 2022.
Ohio EPA. "Disposal Recycling and Generation Analytic. Summary for 2021"
IDEM, "2021 [XLSX]"

Table D-4: Total Waste Disposed in Reference Year

	Residential/Commercial (tons)	Industrial (tons)	Excluded* (tons)	Total (tons)
Direct Hauled	632,756	35,920	0	668,676
Transferred	600,583	0	0	600,583
Incinerated**	0	0	0	0
Total	1,233,339	35,920	0	1,269,259

*Total disposal refers to the sum of waste direct hauled and transferred. According to Ohio EPA Format 4.1, if excluded waste is 10 percent or less of total disposal in the reference year, then SWMD's are not required to account for excluded waste in the solid waste management plan. Total excluded waste was 19,127 tons or 1.5 percent.

**If the quantity of waste managed at incinerators in the reference year is less than 10 percent of total waste disposed in that year, then the solid waste management plan does not need to account for incinerated waste. Total incinerated waste was 2,932 tons or 0.2 percent.

B. HISTORICAL WASTE ANALYSIS

Table D-5a Historical Disposal Data

Year	Population	Residential/Commercial Waste		Industrial Waste	Excluded Waste	Total Waste
		Rate (ppd)	Weight (tons)	Weight (tons)	Weight (tons)	Weight (tons)
2016	1,309,357	4.33	1,033,712	64,206	42,057	1,139,975
2017	1,337,411	4.44	1,084,623	58,521	39,071	1,182,215
2018	1,356,439	4.95	1,224,663	89,619	37,861	1,352,143
2019	1,363,507	4.59	1,140,956	107,770	29,981	1,278,707
2020	1,379,979	4.69	1,181,787	38,477	23,872	1,244,136
2021	1,383,836	4.88	1,233,339	35,920	19,127	1,288,386

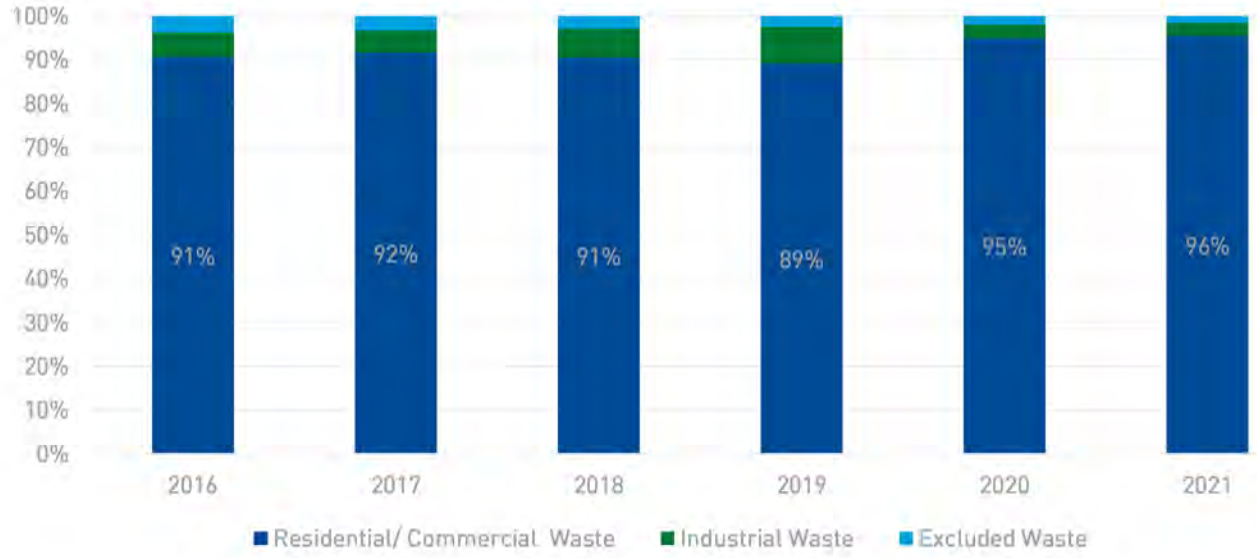
Source:
Ohio EPA ADR Review Forms for 2016-2021 for population and waste disposal data. Population data for 2021 was taken from Table C-1.

Sample Calculation:
Total Waste = Residential/Commercial + Industrial + Excluded
1,244,745 tons = (1,189,699 tons + 35,920 tons + 19,127 tons)

Residential/Commercial Average per Capita = (Residential/Commercial tons * 2,000 pounds per ton) / 365 days / Population
4.71 pounds per person per day = (1,189,699 tons x 2,000) ÷ (365 x 1,383,836 residents)

From 2016 to 2021 total disposal demonstrates a 13% annual increasing trend with average annual disposal increase of roughly 24,735 tons. The analysis below separates the waste disposal sectors to determine if there are any correlations for waste disposal in the SWMD.

Figure D-2 Percentage of Waste Disposal as Total



Residential/Commercial

The SWACO residential/commercial stream comprises the majority of waste disposed in the landfills as shown in Figure D-3. Also, to note is the residential/commercial waste disposal does not directly follow population trends. Actual disposal increased an average annual 3.8 percent from 2017 to 2021 at a higher rate than population growth which increased an average annual of 1.1 percent.

Figure D-3 Residential/Commercial Disposal Analysis

Industrial Waste

Industrial waste is not a major component of the SWACO's disposal stream, accounting for an average of 5% of total disposal annually over the past 5 years with a high of 8% in 2019. As shown in Figure D-4 industrial disposal show to have increased from 2017 to 2019 and decreased down to the reference year.

Figure D-4 Industrial Disposal Analysis

Excluded Waste

Excluded waste has contributed between 1.5% to 3.3% of total disposal annually in Franklin County over the past 5 years. Since 2017, disposal of excluded waste has decreased from 42,057 tons per year to 19,127 tons per year. Excluded wastes include slag, uncontaminated earth, non-toxic fly ash, spend non-toxic foundry sand and material from mining, construction, or demolition operations. According to Ohio EPA ADR review reports, the waste disposal is classified as construction and demolition. It should also be noted that excluded waste is fee exempt.

Figure D-5 Excluded Waste Disposal Analysis

The current Plan projected a decrease in total tons of disposal from 2016 through 2021, but actual disposal amounts experienced an increase. Over the last 6 lasts, SWACO had an overall 15% increase in R/C waste compared to the projected 3% decrease. Additionally, industrial waste had an overall 44% decrease in R/C waste compared to the projected 1% decrease with 59% higher average tons compared to Plan projections. The current Plan projections showed a relatively steady decrease for both residential/commercial and industrial wastes.

Table D-5c Comparison of Actual Disposal to Projections in Current Plan

Year	Residential/Commercial		Industrial		Total	
	Actual Tons	Current Plan Projected Tons	Actual Tons	Current Plan Projected Tons	Actual Tons	Current Plan Projected Tons
2016	1,033,712	963,223	64,206	41,670	1,097,918	1,004,894
2017	1,084,623	956,195	58,521	41,564	1,143,144	997,759
2018	1,224,663	949,224	89,619	41,458	1,314,282	990,682
2019	1,140,956	942,309	107,770	41,352	1,248,726	983,661
2020	1,181,787	935,449	38,477	41,247	1,220,264	976,696
2021	1,233,339	932,814	35,920	41,141	1,269,259	973,955
Average	1,149,847	946,536	65,752	41,405	1,215,599	987,941

Urban Ohio SWMDs

A comparison of the disposal rate for the District with other urban SWMDs in Ohio is shown in Figure D-5b for 2021.

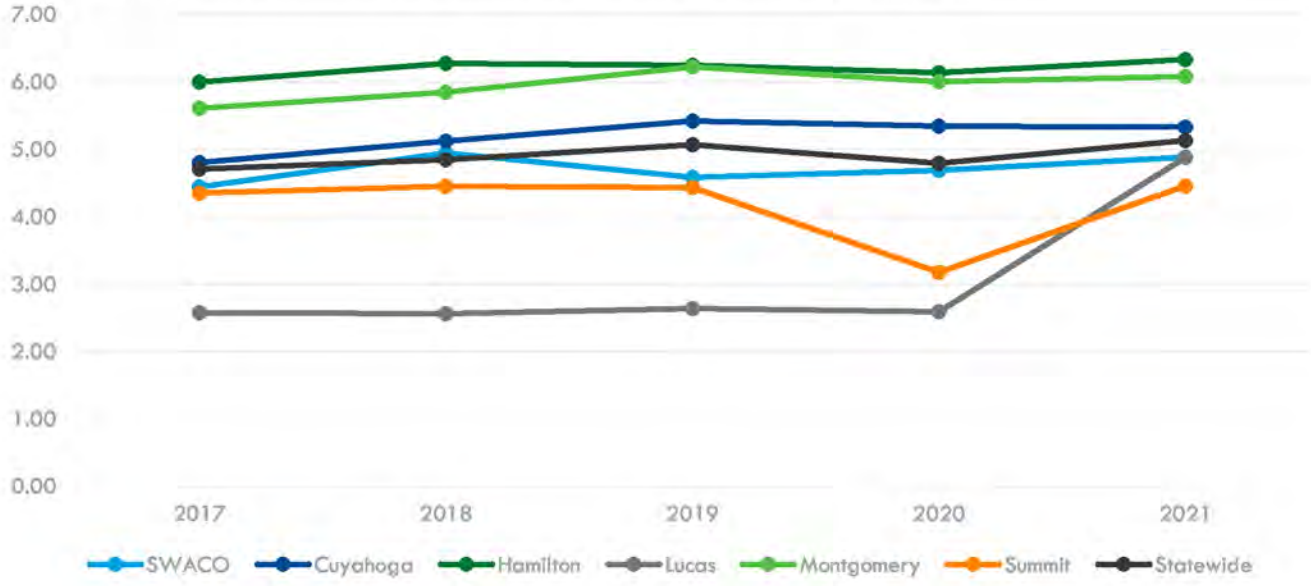
Table D-5b. Residential/Commercial Disposal Rate for Selected Urban SWMDs for 2021

SWMD	Residential/Commercial Disposal Rate (lbs/person/day)
Cuyahoga County SWMD	5.33
Hamilton County SWMD	6.34
Lucas County SWMD	4.88
Montgomery County SWMD	6.08
Summit County SWMD	4.46
SWACO	4.88
Statewide	5.13

A comparison of the disposal rate for the District with other urban SWMDs in Ohio is shown in Figure D-6. In general, the figure shows that all of these SWMDs have experienced a consistent increase in the R/C disposal rate since 2017. Lucas county jumped from 2.59 to 4.88 ppd in 2021 due to tonnage reporting corrections.

Differences in waste generation between solid waste management districts may be a reflection of differences in characteristics of the districts. For example, a district with unusually strong employment and economic growth may generate more waste from both the residential and commercial sectors. SWACO's economy has proven to be very diverse, strong and resilient for a long period of time, and continues to be so today. However, waste generation is also recognized as a difficult figure to calculate accurately, and an even more difficult figure to compare from one solid waste management district to another due to the fact that the calculation is highly dependent on gathering accurate recycling data. Recycling data is difficult to gather due to the fact that there is no statewide requirement for reporting this data. This is in stark contrast to disposal data, which is required to be reported. Therefore, differences in generation calculations between solid waste management districts is often a reflection of differences in available recycling data, not a true reflection of differences in generation.

Figure D-6 Residential/Commercial Disposal Rate Trends for Urban Ohio SWMDs



C. DISPOSAL PROJECTIONS

There are several methods that can be used for projecting waste disposal through the planning period, such as historical per capita, historical averages and historical trends. Two methodologies were used for SWACO's residential/commercial waste projections:

Method 1: An average pounds per capita disposal rate over the past 5 years, 2017-2021, to be multiplied by population projections throughout the planning period: 4.71 ppd

- Residential/Commercial: 4.71 ppd until end of planning period.
- Industrial: 4.71 ppd until end of planning period.
- Excluded waste projected at 0 until end of planning period.

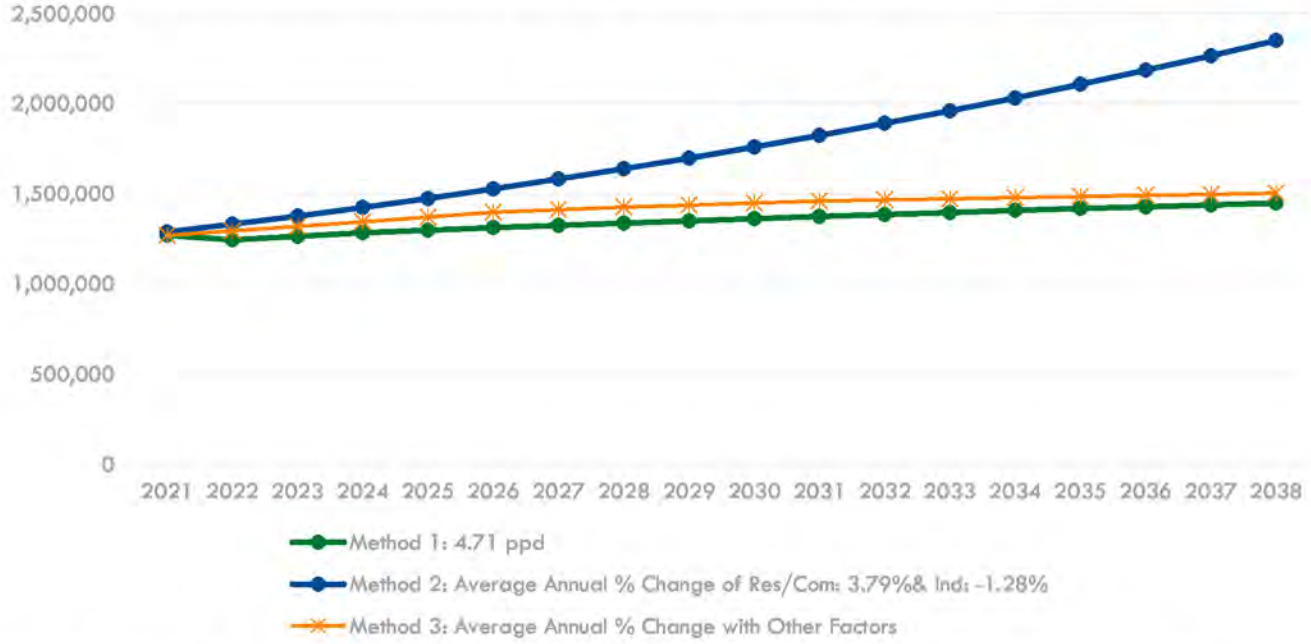
Method 2: An average annual change in tons disposed over the past 5 years, 2017-2021, to be increased annually throughout the planning period:

- Residential/Commercial average annual change: 3.79% until end of planning period.
- Industrial average annual change: -1.28% until end of planning period.
- Excluded waste average annual change: -16.04% until end of planning period.

Method 3: An average annual change in tons disposed over the past 5 years, 2017-2021, to be increased annually throughout the planning period:

- Residential/Commercial average annual change multiplied by 75% at 2.26% until 2026, halved at 1.13% until 2029, and flat 0.50% until end of planning period.
- Commercial average annual change multiplied by 50% at 1.91% until 2026, halved at 0.95% until 2031, and flat 0.40% until end of planning period.
- Industrial projected at a flat 35,920 tons.
- Excluded waste projected at 0 until end of planning period.

Figure D-6. Projected Residential/Commercial Disposal Using Alternative methods:



While the approach used to produce the blue line in Figure D-6 results in a rather modest increase of approximately 154,000 tons disposed from 2017 to 2039, this trend of increasing disposal is inconsistent with the trend of actual tons disposed from 2017 through 2021. A more modest increase in disposal is represented by the

green line in Figure D-5 above, which uses the R/C average 2021 disposal rate of 4.71 ppd to calculate estimated disposal amounts for the planning period. This approach results in an increase of approximately 189,000 tons over the planning period.

After conducting the historical analysis and considering factors that could change historical disposal trends, waste disposal for the planning period is projected based on Method 3 in Table D-5.

Table D-6 Waste Disposal Projections

Year	Residential Waste	Commercial Waste	Industrial Waste	Excluded Waste	Total Waste
	Weight (tons)	Waste (tons)	Weight (tons)	Weight (tons)	Weight (tons)
2021	350,631	882,709	35,920	0	1,269,259
2022	358,547	899,546	35,920	0	1,294,013
2023	366,643	916,706	35,920	0	1,319,268
2024	374,921	934,192	35,920	0	1,345,033
2025	383,386	952,012	35,920	0	1,371,318
2026	392,043	970,172	35,920	0	1,398,134
2027	396,469	979,425	35,920	0	1,411,813
2028	400,944	988,766	35,920	0	1,425,630
2029	402,949	998,197	35,920	0	1,437,066
2030	404,964	1,007,717	35,920	0	1,448,601
2031	406,989	1,017,329	35,920	0	1,460,237
2032	409,024	1,021,398	35,920	0	1,466,341
2033	411,069	1,025,484	35,920	0	1,472,472
2034	413,124	1,029,586	35,920	0	1,478,629
2035	415,190	1,033,704	35,920	0	1,484,813
2036	417,266	1,037,839	35,920	0	1,491,024
2037	419,352	1,041,990	35,920	0	1,497,262
2038	421,449	1,046,158	35,920	0	1,503,526

Residential: Overall average 0.83% annually	Residential projections based on 2017 to 2021 average annual change multiplied by 75% at 2.26% until 2026, halved at 1.13% until 2029, and flat 0.50% until end of planning period.
Commercial: Overall average 0.80% annually	Commercial average annual change multiplied by 50% at 1.91% until 2026, halved at 0.95% until 2031, and flat 0.40% until end of planning period.
Industrial: Flat 35,920 tons	The industrial tons are projected at a conservative flatlined 35,920 tons from 2021.
Excluded: Flat 0 tons	Total disposal refers to the sum of waste direct hauled and transferred. According to Ohio EPA Format 4.1, if excluded waste is 10 percent or less of total disposal in the reference year, then SWACO's are not required to account for excluded waste in the solid waste management plan.

The SWACO Franklin County Landfill receives waste from Franklin county but also receives waste from other solid waste districts. The following table shows the historical waste received from outside SWACO and has a projected flatlined tonnage throughout the planning period.

Table D-7: Waste Imports

Year	SWACO Franklin County Sanitary Landfill Weight (tons)
2017	8,592
2018	7,830
2019	13,906
2020	8,151
2021	8,152
2022	8,152
2023	8,152
2024	8,152
2025	8,152
2026	8,152
2027	8,152
2028	8,152
2029	8,152
2030	8,152
2031	8,152
2032	8,152
2033	8,152
2034	8,152
2035	8,152
2036	8,152
2037	8,152
2038	8,152

Appendix E: Residential/Commercial Recovery Data

Appendix E presents the waste reduction and recycling data for the R/C sectors in the reference year (2021). 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 2021 to the end of the planning period (2039) which are included at the end of this Appendix.

A. REFERENCE YEAR RECOVERY DATA

Tables E-1 through E-4 account for all material being credited to the waste reduction and recycling rate for the residential/commercial sector. These tables were adjusted for double counting. Double counting occurs when the same material is reported by more than one survey respondent, typically both the generator of the material and the processor that receives the material from the generator. Material is "double counted" if the quantities from both respondents are credited to total recovery. In those instances, the total quantity recovered was adjusted to subtract the quantity reported by one source or the other to avoid crediting the material twice.

Table E-1 is reserved for commercial data obtained from SWACO survey efforts. Data was aggregated from businesses that responded to the survey.

Table E-1 Commercial Survey Results

NAICS	WG	EW	LAB	FW	Gl	FM	NFM	CC	MxP	Pl	Tx	W	R	CoM	YW	D/R	HHW	UO	Ink	DCB	Total
42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	-	68	-	-	-	-	-	42	4	-	-	-	-	-	-	-	-	-	-	-	114
45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
81	-	-	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	184	-	-	236
92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unadj. Total	0	68	52	0	0	0	0	42	4	0	0	0	0	0	0	0	0	184	0	0	350
Adj.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adj. Total	0	68	52	0	0	0	0	42	4	0	0	0	0	0	0	0	0	184	0	0	350

Notes: WG = Appliances/White Goods, EW = E-Waste, LAB = Lead-Acid Batteries, FW = Food Waste, Gl= Glass, FM = Ferrous Metals, NFM = Non- Ferrous Metals, CC = Corrugated Cardboard, MP = Mixed Paper, Pl = Plastics, Tx = Textiles, W = Wood, CoM = Single Stream/Commingled, YW = Yard Waste, D/R = Donated or Reused Goods, UO = Used Oil, Ink = Ink Cartridges/Toners, DCB = Dry Cell Batteries, Adj. = Adjusted

Source: SWACO survey data

Sample Calculations (Gl): Total (68 tons) – adjustment (0 tons) = Adjusted total (68 tons)

Table E-2 reports recycling data from scrap yards, brokers, buybacks, processors and MRFs. Processors and MRF quantities reported in Table E-2 are obtained from Ohio EPA MRF Data Reports. No adjustments were made to this data.

Table E-2 Data from Other Recycling Facilities

Program and/or Source of Materials/Data	WG	EW	LAB	FW	Gl	FM	NFM	CC	MxP	Pl	Tx	W	R	CoM	YW	DCB	FB	Ink	Used Oil	Other	Total
Buybacks																					
None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrap Yards																					
SY1	13,630	-	-	-	-	56,825	2,661	-	-	-	-	-	-	-	-	-	-	-	-	-	73,115
SY2	256	-	64	-	-	3,610	94	-	-	-	-	-	-	-	-	-	-	-	-	-	4,024
SY3	-	7,219	-	-	-	1,750	523	-	-	-	-	-	-	-	-	-	-	-	-	-	9,492
SY4	-	-	-	-	-	63,269	3,284	-	-	-	-	-	-	-	-	33	-	-	-	-	66,586
SY5	-	-	-	-	-	11	209	-	-	-	-	-	-	-	-	-	-	-	-	-	220
SY6	-	-	-	-	-	16,430	196	-	-	-	-	-	-	-	-	-	-	-	-	-	16,626
SY7	4,000	-	-	-	-	5,500	2,750	-	-	-	-	-	-	-	-	-	-	-	-	-	12,250
Brokers																					
BR1	-	-	-	-	-	-	-	20	1,299	-	-	-	-	-	-	-	-	-	-	-	1,319
BR2	-	-	-	-	-	-	-	-	390	-	-	-	-	-	-	-	-	-	-	-	390
BR3	-	1	7	-	-	-	-	25	-	-	-	-	-	-	-	6	10	-	-	-	49
BR4	-	-	-	-	-	-	-	640	5,760	-	-	-	-	-	-	-	-	-	-	-	6,400
BR5	-	-	-	-	-	-	-	-	2,719	-	-	-	-	-	-	-	-	-	-	-	2,719
BR6	-	-	-	-	-	-	-	-	4,670	-	-	-	-	-	-	-	-	-	-	-	4,670
BR7	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	42
BR8	-	-	-	-	-	-	-	7,289	-	-	-	-	-	-	11,650	-	-	-	-	-	18,939
BR9	0	-	-	-	6	1,120	59	3,050	-	18	-	1,376	-	99	53	-	-	-	-	-	5,782
BR10	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	1	5
BR11	52	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	2,842	2,905
BR12	-	-	-	109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109
BR13	-	-	-	807	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	807
BR14	-	-	-	-	-	-	314	138	-	17	2,833	-	-	-	-	-	-	-	-	-	3,302
BR15	-	-	-	-	-	-	5	32	-	-	-	-	-	-	-	-	-	-	-	933	971
BR16	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	533	534
BR17	-	-	-	16,996	-	-	-	187	-	-	-	-	-	29	-	-	-	-	-	-	17,212
BR18	-	-	-	-	-	-	-	-	-	-	358	-	-	-	-	-	-	-	-	-	358
BR19	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
BR20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	220	220
BR21	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	24
Processors/MRF's																					
MRF1	-	-	-	-	12,663	1,599	1,335	27,373	30,406	6,327	-	0	-	-	-	-	-	-	-	-	79,702
MRF2	-	-	-	-	116	18	16	161	310	64	-	-	-	-	-	-	-	-	-	-	685
MRF3	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
MRF4	-	-	-	-	19,370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,370
MRF5	-	-	-	-	-	-	-	82	-	-	-	4	-	-	-	-	-	-	-	6	92
MRF6	-	-	-	-	-	-	-	-	133	-	-	-	-	64	-	-	-	-	-	-	196
PR1	-	-	-	-	-	-	-	38,984	-	-	-	-	-	-	-	-	-	-	-	-	38,984
PR2	3	1	-	-	-	-	-	-	-	31	-	-	-	-	-	2	0	-	-	-	37
PR3	-	-	-	-	-	540	236	168,101	1,349	676	-	1,387	-	-	-	-	-	-	-	-	172,289
PR4	-	-	-	-	-	-	-	-	-	-	-	12,000	-	-	-	-	-	-	-	-	12,000
PR5	-	1,837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,837
PR6	-	-	-	-	-	-	-	200	-	20	-	31,200	-	-	-	-	-	-	-	-	31,420

Program and/or Source of Materials/Data	WG	EW	LAB	FW	Gl	FM	NFM	CC	MxP	Pl	Tx	W	R	CoM	YW	DCB	FB	Ink	Used Oil	Other	Total
PR7	-	48	1	-	-	1,012	-	-	-	-	-	-	-	-	-	0	-	-	-	1	1,062
PR8	-	-	-	-	-	-	-	-	-	-	-	36	-	-	-	-	-	-	-	-	36
PR9	-	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57
PR10	-	1	0	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	7
PR11	21	11	3	-	-	915	30	35	-	2	-	4,010	-	-	-	3	-	-	2	-	5,031
PR12	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
PR13	-	-	-	-	-	-	-	-	-	500	-	-	-	-	-	-	-	-	-	-	500
PR14	13	8	-	450	-	105	10	410	20	20	-	-	-	-	54	-	-	-	-	2	1,092
PR15	-	-	-	-	-	-	-	25,114	-	-	-	-	-	-	-	-	-	-	-	-	25,114
Unadj. Total	17,975	9,253	75	18,361	32,156	152,707	11,722	271,842	47,056	7,675	3,202	50,014	-	219	11,758	44	10	2	2	4,538	638,611
Adj.	-	-	-	-	2,044	1,670	832	18,642	10,443	2,173	-	-	-	-	-	-	-	-	-	-	35,805
Adj. Total	17,975	9,253	75	18,361	30,112	151,037	10,890	253,200	36,612	5,502	3,202	50,014	-	219	11,758	44	10	2	2	4,538	602,806

Notes: WG = Appliances/White Goods, EW = E-Waste, LAB = Lead-Acid Batteries, FW = Food Waste, Gl= Glass, FM = Ferrous Metals, NFM = Non- Ferrous Metals, CC = Corrugated Cardboard, MP = Mixed Paper, Pl = Plastics, Tx = Textiles, W = Wood, CoM = Single Stream/Commingled, YW = Yard Waste, D/R = Donated or Reused Goods, UO = Used Oil, Ink = Ink Cartridges/Toners, DCB = Dry Cell Batteries, UO = Used Oil, Adj. = Adjusted

Source: SWACO survey data, Ohio EPA. "Material Recovery Facility and Commercial Recycling Data" 2021

Sample Calculations (Gl): Total (32,150 tons) – adjustment (2,044 tons) = Adjusted total (30,105 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 NAICS codes using Reference USA, a business database. New additions to the surveying list are sent a cover letter and survey via 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.

Quantities reported in Table E-3 were obtained from Ohio EPA reports. No adjustments were needed.

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

Ohio EPA Data Source	Pl	CC	MP	NFM	FM	W	CoM	Oth	Total
Walmart Recycling in Ohio	114	7,810	8	726	-	3,544	-	446	12,649
Home Depot Corporation	2	347	-	-	-	2,832	-	99	3,280
Target Corporate	81	2,895	-	54	-	-	32	-	3,062
Dollar General Corporation	13	1,089	6	-	-	-	-	-	1,109
Kohls Corporate Office & Headquarters	17	510	-	0	-	-	-	6	533
Kroger	454	14,869	-	-	-	-	-	262	15,585
Sam's Club	31	1,759	3	0	-	488	-	103	2,385
REI	-	-	1	-	-	-	165	-	166
CVS	-	278	-	-	-	-	269	-	547
Advance Auto Parts	2	42	-	-	16	-	-	981	1,042
National Tire and Battery	0	0	0	0	1.64	0	0	98.4	100
OEPA1	163	3,509	35	-	-	-	-	-	3,707
Aldi Inc Springfield Division	53	1,190	-	-	-	3,133	-	-	4,375
Meijer	326	5,460	16	-	-	-	-	0	5,802
Save-A-Lot	8	359	-	-	-	-	-	-	367
Walgreens	-	29	-	-	-	-	71	-	100
Unadjusted Total	1,265	40,147	69	780	18	9,996	538	1,996	54,809
Adjustments	-	-	-	-	-	-	-	-	-
Adjusted Total	1,265	40,147	69	780	18	9,996	538	1,996	54,809

Notes: WG = Appliances/White Goods, EW = E-Waste, LAB = Lead-Acid Batteries, FW = Food Waste, Gl= Glass, FM = Ferrous Metals, NFM = Non- Ferrous Metals, CC = Corrugated Cardboard, MP = Mixed Paper, Pl = Plastics, Tx = Textiles, W = Wood, CoM = Single Stream/Commingled, YW = Yard Waste, D/R = Donated or Reused Goods, UO = Used Oil, Ink = Ink Cartridges/Toners, DCB = Dry Cell Batteries, Adj. = Adjusted

Source: SWACO survey data, Ohio EPA. "Material Recovery Facility and Commercial Recycling Data" 2020 and 2021

Note: OEPA-1 refers to a commercial entity that provided data directly to Ohio EPA but did not wish to have their information published. Differences compared to ADR: Sam's Club and national Tire and Battery were updated to version "Ohio Material Recovery Facilities and Commercial Recycling – 2021" published May 26, 2022. Table E-3 decreased a total of 1,068.62 tons.

Sample Calculations: Plastics total (1,280 tons) – Adjustments (0 tons) = Adjusted Total (1,280 tons)

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

Other Programs or Sources of Data	HHW	UO	ST	DCB	LAB	FW	CoM	YW	FB	Unadjusted Total	Adj.	Adjusted Total
Curbside Recycling Services	-	-	-	-	-	-	65,796	-	-	65,796	65,796	-
Drop-off Recycling Locations	-	-	-	-	-	-	6,085	-	-	6,085	6,085	-
Composting Facilities	-	-	-	-	-	4,342	-	272,892	-	277,233	33	277,200
Other Food and Yard Waste Management Activities	-	-	-	-	-	1,952	-	69,423	-	71,375	48,299	23,076
Ohio EPA Food Waste Data						4,761				4,761	-	4,761
Ohio EPA Scrap Tire Data	-	-	23,510	-	-	-	-	-	-	23,510	-	23,510
SWACO Data - SWACO HHW Mobile Collections	43	3	-	2	3	-	-	-	2	53	-	53
SWACO Data - SWACO Permanent HHW Collections	276	9	-	2	9	-	-	-	4	299	-	299
Unadj. Total	319	12	23,510	4	12	11,055	71,881	342,315	6	449,112	120,212	328,900
Adj.	-	-	-	-	-	-	71,881	48,332	-	120,212		
Adj. Total	319	12	23,510	4	12	11,055	-	293,983	6	328,900		

Notes: WG = Appliances/White Goods, EW = E-Waste, LAB = Lead-Acid Batteries, FW = Food Waste, Gl= Glass, FM = Ferrous Metals, NFM = Non- Ferrous Metals, CC = Corrugated Cardboard, MP = Mixed Paper, Pl = Plastics, Tx = Textiles, W = Wood, CoM = Single

Stream/Commingled, YW = Yard Waste, D/R = Donated or Reused Goods, UO = Used Oil, Ink = Ink Cartridges/Toners, DCB = Dry Cell Batteries, Adj. = Adjusted

Source: 2021 Ohio EPA Scrap Tire Report, SWACO internal program data, Table B-1a-b, Table B-2a-d, Table B-5, Table B-6

Note: Differences compared to ADR: HAULER/GROCER FOOD WASTE DATA were updated to version 2021 "Ohio EPA Compost Facility Planning Analytical Report". Table E-4 increased a total of 1,112.97 tons.

Sample Calculations: Curbside Recycling Services total (65,796)– Adjustments (65,796) = Adjusted Total (0)

Quantities reported in Table E-4 is a compilation of quantities diverted through programs and services. Adjustments were made to exclude 71,881 tons of commingled recyclables due to tonnage included in MRF reports and yard waste 33 ton adjustment for industrial business yard waste.

During the reference year, the District diverted 48,163 tons of material from the residential/commercial sector. Table E-5 reports the quantities of materials diverted. Commingled recyclables and cardboard are the two largest material categories recycled for the reference year.

Table E-5 Reference Year Residential/Commercial Material Reduced/Recycled

Material	Quantity (tons)
Appliances/ "White Goods"	17,975
Household Hazardous Waste	319
Used Motor Oil	198.0600
Electronics	9,321
Scrap Tires	23,510
Dry Cell Batteries	48
Lead-Acid Batteries	139
Food	29,416
Glass	30,112
Ferrous Metals	151,055
Non-Ferrous Metals	11,670
Corrugated Cardboard	293,389
All Other Paper	36,685
Plastics	6,766
Textiles	3,202
Wood	60,010
Rubber	-
Commingled Recyclables (Mixed)	758
Yard Waste	305,741
Other (Aggregated)	6,552
Total	986,865

Source: 2021 ADR Calculation Spreadsheets, SWACO survey data, 2020-2021 Ohio EPA MRF Reports, 2021 Ohio EPA Scrap Tire Report, 2021 SWACO program data, 2021 Ohio EPA Compost Report

Table E-6 reports quantities diverted for each program/source.

Table E-6 Quantities Recovered by Program/Source

Program/Source of R/C Recycling Data	Quantities (Tons)
Commercial Survey	350
Data from Other Recycling Facilities	524,585
Ohio EPA Commercial Retail Data	54,809
Curbside Recycling Services	65,796
Drop-off Recycling Locations	6,085
Compost Facilities Food Waste and Other Food Processing	28,885
Compost Facilities Yard Waste	228,902
Community Food Waste	531
Community Yard Waste	48,298
Ohio EPA Food Waste Data	4,761
Ohio EPA Scrap Tire Data	23,510
SWACO Data - SWACO HHW Mobile Collections	53
SWACO Data - SWACO Permanent HHW Collections	299
Total	986,865

* Data from Other Recycling Facilities was reduced in this table to show curbside and drop-off tons.

B. HISTORICAL RECOVERY

SWACO diverts an average of 45,817 tons of material per year, or on average 1.08 pounds per person per day.

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

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Curbside Recycling Services	Drop-off Recycling Locations	Compost Facilities Food Waste and Other Food	Compost Facilities Yard Waste	Community Food Waste	Community Yard Waste	Ohio EPA Food Waste Data	Ohio EPA Scrap Tire Data	SWACO Data - SWACO HHW Mobile Collections	SWACO Data - SWACO Permanent HHW Collections	Totals
2017	-	491,011	44,556	66,879	7,088	21,214	224,832	12	51358	4,319	17,834	80	172	929,355
2018	-	498,860	51,934	66,828	6,017	22,597	265,582	0	55131	2,744	11,005	50	144	980,891
2019	-	508,769	45,644	63,605	5,373	21,295	234,778	152	52288	3,808	23,579	44	206	959,541
2020	-	562,440	39,930	68,388	6,007	29,325	188,036	302	54016	4,103	21,542	44	206	974,339
2021	350	524,585	54,809	65,796	6,085	28,885	228,902	531	48,298	4,761	23,510	53	299	986,865

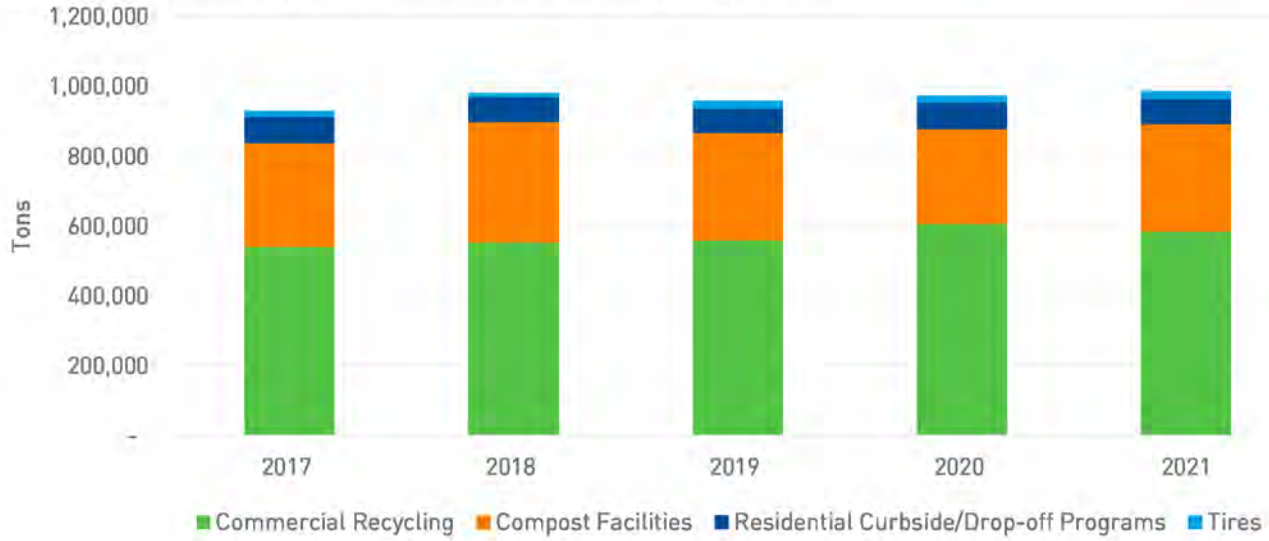
Total recovery includes recycling, composting, and waste reduction from incineration. SWACO's historical recovery for the R/C sector over a five-year period spanning from 2017 to 2021 is presented in the following table:

Table E-7b. Historical Recycling Analysis

Year	Population	Residential/ Commercial Recycling (Tons)	Tires (Tons)	Composting (Tons)	Total (Tons)	Average Pounds/ Person/Day	Annual Percent Change (%)	Annual Tonnage Change (Tons)
2017	1,337,411	614,104	17,834	297,417	929,355	3.81		
2018	1,356,439	626,576	11,005	343,310	980,891	3.96	5.5%	51,536
2019	1,363,507	627,448	23,579	308,513	959,541	3.86	-2.2%	(21,350)
2020	1,379,979	681,118	21,542	271,679	974,339	3.87	1.5%	14,799
2021	1,383,836	656,739	23,510	306,616	986,865	3.91	1.3%	12,526
Average over 5 Year Period					966,198	3.88	1.5%	14,378

An examination of the recovery patterns over this five-year period (2017-2021) reveals that a high of 986,865 tons was recovered in 2021; however, only 5 years prior, 929,355 tons were recovered, which represents a low for the stated period. Over the five-year period, recovery increased by an average of 966,198 tons, or 1.6%, annually. The recovery of 986,865 tons in 2021 was approximately 4.0% greater than the 2017-2021 average of 7,367 tons. The following figure presents the District's historical R/C recovery totals from 2017 to 2021.

Figure E-1 Historical Recycling by General Material Category: 2017-2021



Source(s): Tables E-7

The data analysis in Tables E-8 show residential and commercial programmatic historical and projected recycling data from 2021 to 2038.

Table E-8 Historical and Projected Residential/Commercial Recovery by Program/Source

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Curbside Recycling Services	Drop-off Recycling Locations	Compost Facilities Food Waste and Other Food Processing	Compost Facilities Yard Waste	Community Food Waste	Community Yard Waste	Ohio EPA Food Waste Data	Ohio EPA Scrap Tire Data	SWACO Data - SWACO HHW Mobile Collections	SWACO Data - SWACO Permanent HHW Collections	Totals
2017	-	491,011	44,556	66,879	7,088	21,214	224,832	12	51,358	4,319	17,834	80	172	929,355
2018	-	498,860	51,934	66,828	6,017	22,597	265,582	-	55,131	2,744	11,005	50	144	980,891
2019	-	508,769	45,644	63,605	5,373	21,295	234,778	152	52,288	3,808	23,579	44	206	959,541
2020	-	562,440	39,930	68,388	6,007	29,325	188,036	302	54,016	4,103	21,542	44	206	974,339
2021	350	524,585	54,809	65,796	6,085	28,885	228,902	531	48,298	4,761	23,510	53	299	986,865
2022	350	540,323	55,906	69,085	6,146	29,174	231,191	574	48,781	4,999	23,898	56	304	1,010,787
2023	350	556,533	57,024	72,540	6,330	29,465	233,503	620	49,269	5,249	24,870	59	317	1,036,128
2024	350	573,229	58,164	75,441	6,584	30,939	235,838	651	49,762	5,512	25,866	61	329	1,062,725
2025	350	590,425	59,327	78,459	6,781	33,414	238,196	781	50,260	5,677	26,713	63	340	1,090,787
2026	350	614,042	60,514	81,597	6,917	36,755	240,578	976	50,762	5,848	27,269	65	347	1,126,020
2027	350	644,745	61,724	84,045	6,986	40,431	242,984	1,269	51,270	5,906	27,830	66	354	1,167,960
2028	350	683,429	62,959	86,567	7,056	43,665	245,414	1,776	51,783	5,965	28,398	66	362	1,217,789
2029	350	731,269	64,218	89,164	6,985	47,158	247,868	2,220	52,300	5,965	28,684	66	365	1,276,614
2030	350	775,145	65,502	91,838	6,915	50,931	250,347	2,886	52,823	5,965	28,971	66	369	1,332,110
2031	350	813,903	66,812	95,512	6,846	54,496	252,850	3,463	53,352	5,965	29,223	66	372	1,383,211
2032	350	854,598	68,149	99,332	6,778	56,131	255,379	4,156	53,885	5,965	29,476	66	375	1,434,640
2033	350	888,782	69,512	103,306	6,778	57,815	257,932	4,779	54,424	5,965	29,728	66	379	1,479,816
2034	350	924,333	70,902	105,372	6,778	59,549	260,512	5,496	54,968	5,965	29,981	66	382	1,524,654
2035	350	952,063	72,320	107,479	6,778	61,336	263,117	6,046	55,518	5,965	30,233	66	385	1,561,656
2036	350	980,625	73,766	109,629	6,778	63,176	265,748	6,651	56,073	5,965	30,456	66	388	1,599,670
2037	350	1,000,237	75,242	111,821	6,778	65,071	268,406	7,316	56,634	5,965	30,678	66	391	1,628,955
2038	350	1,020,242	76,746	114,058	6,778	67,023	271,090	8,047	57,200	5,965	30,901	66	394	1,658,860

In Table E-8, actual tonnage was used for 2017 through 2021. Projections for each program/source were calculated using the following assumptions and methodology and percentages shown in Table E-9:

- Commercial survey data is projected flat as SWACO mainly relies on broker and processor data for businesses.
- Data from Other Recycling Facilities is projected with the focus of Recycling Business Champion program startup.
- Ohio EPA Commercial Retail Data is projected to increase 2.0 percent annually. This could be conservative. Very dependent on retailer outreach conducted by Ohio EPA.
- Curbside Recycling Services is projected with the focus of changes made with the curbside programs such as the City of Columbus changing from biweekly to weekly collections.
- Drop-off Recycling Locations is projected with the focus of changes made with the curbside programs.
- Compost Facilities Food Waste and Other Food Processing is projected with the focus of a new organics facility startup.
- Compost Facilities Yard Waste is projected to increase 1.0 percent annually.
- Community Food Waste is projected with the focus of a new organics facility startup.
- Community Yard Waste is projected to increase 1.0 percent annually.
- Ohio EPA Food Waste Data is projected to increase 1.0 percent annually.
- Ohio EPA Scrap Tire Data is projected to increase 1.0 percent annually.
- SWACO Data - SWACO HHW Mobile Collections is projected to increase 0.5 percent annually.
- SWACO Data - SWACO Permanent HHW Collections is projected to increase with population growth annually.

Table E-9 Projection Percentages for Residential/Commercial Recovery by Program/Source

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Curbside Recycling Services	Drop-off Recycling Locations	Compost Facilities Food Waste and Other Food Processing	Compost Facilities Yard Waste	Community Food Waste	Community Yard Waste	Ohio EPA Food Waste Data	Ohio EPA Scrap Tire Data	SWACO Data - SWACO HHW Mobile Collections	SWACO Data - SWACO Permanent HHW Collections
2022	0%	3.0%	2.0%	5.0%	1.0%	1.0%	1.0%	8.0%	1.0%	1.0%	0.5%	5.0%	1.7%
2023	0%	3.0%	2.0%	5.0%	3.0%	1.0%	1.0%	8.0%	1.0%	1.0%	0.5%	5.0%	4.1%
2024	0%	3.0%	2.0%	4.0%	4.0%	5.0%	1.0%	5.0%	1.0%	1.0%	0.5%	5.0%	4.0%
2025	0%	3.0%	2.0%	4.0%	3.0%	8.0%	1.0%	20.0%	1.0%	1.0%	0.5%	3.0%	3.3%
2026	0%	4.0%	2.0%	4.0%	2.0%	10.0%	1.0%	25.0%	1.0%	1.0%	0.5%	3.0%	2.1%
2027	0%	5.0%	2.0%	3.0%	1.0%	10.0%	1.0%	30.0%	1.0%	1.0%	0.5%	1.0%	2.1%
2028	0%	6.0%	2.0%	3.0%	1.0%	8.0%	1.0%	40.0%	1.0%	1.0%	0.5%	1.0%	2.0%
2029	0%	7.0%	2.0%	3.0%	-1.0%	8.0%	1.0%	25.0%	1.0%	1.0%	0.5%	0.0%	1.0%
2030	0%	6.0%	2.0%	3.0%	-1.0%	8.0%	1.0%	30.0%	1.0%	1.0%	0.5%	0.0%	1.0%
2031	0%	5.0%	2.0%	4.0%	-1.0%	7.0%	1.0%	20.0%	1.0%	1.0%	0.5%	0.0%	0.9%
2032	0%	5.0%	2.0%	4.0%	-1.0%	3.0%	1.0%	20.0%	1.0%	1.0%	0.5%	0.0%	0.9%
2033	0%	4.0%	2.0%	4.0%	0.0%	3.0%	1.0%	15.0%	1.0%	1.0%	0.5%	0.0%	0.9%
2034	0%	4.0%	2.0%	2.0%	0.0%	3.0%	1.0%	15.0%	1.0%	1.0%	0.5%	0.0%	0.8%
2035	0%	3.0%	2.0%	2.0%	0.0%	3.0%	1.0%	10.0%	1.0%	1.0%	0.5%	0.0%	0.8%
2036	0%	3.0%	2.0%	2.0%	0.0%	3.0%	1.0%	10.0%	1.0%	1.0%	0.5%	0.0%	0.7%
2037	0%	2.0%	2.0%	2.0%	0.0%	3.0%	1.0%	10.0%	1.0%	1.0%	0.5%	0.0%	0.7%
2038	0%	2.0%	2.0%	2.0%	0.0%	3.0%	1.0%	10.0%	1.0%	1.0%	0.5%	0.0%	0.7%

Appendix F: Industrial Recovery Data

Appendix F presents the reduction and recycling data for the industrial sector in the 2021 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 2021 to the end of the planning period (2038) which are included at the end of this Appendix.

A. REFERENCE YEAR RECOVERY DATA

Tables F-1 through F-4 account for all material being credited to the waste reduction and recycling rate for the industrial sector.

Table F-1 Industrial Survey Results

NAICS	FW	Gl	FM	NFM	CC	MP	Pl	W	FB	Total
22	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-
Unadj. Total	-	-	-	-	-	-	-	-	-	-
Adj.	-	-	-	-	-	-	-	-	-	-
Adj. Total	-	-	-	-	-	-	-	-	-	-

Notes: WG = Appliances/White Goods, EW = E-Waste, LAB = Lead-Acid Batteries, FW = Food Waste, Gl= Glass, FM = Ferrous Metals, NFM = Non- Ferrous Metals, CC = Corrugated Cardboard, MP = Mixed Paper, Pl = Plastics, Tx = Textiles, W = Wood, CoM = Single Stream/Commingled, YW = Yard Waste, D/R = Donated or Reused Goods, UO = Used Oil, Ink = Ink Cartridges/Toners, DCB = Dry Cell Batteries, Adj. = Adjusted

Source(s): District industrial survey results.

Sample Calculations (Gl): Total (0 tons) – adjustment (0 tons) = Adjusted total (0 tons)

Table F-1 accounts for material credited for waste reduction and recycling as reported by the industrial businesses. In some instances, an industrial business did not respond to the reference year survey but did respond to a previous survey. Supplemental data was used in this table when the business was verified as operating in the reference year, the nature of the business did not significantly change, and the business still produced the same type of recyclables. Some materials reported as recycled are considered non-creditable. These materials include: train boxcars, construction and demolition debris, metals from vehicles, liquid industrial waste, and hazardous waste. Adjustments were made on Table F-1 to exclude these materials.

Table F-1 accounts for material credited for waste reduction and recycling as reported by industrial businesses. Some materials reported as recycled are considered non-creditable. These materials include train boxcars, construction and demolition debris, metals from vehicles, liquid industrial waste, and hazardous waste.

Table F-2 Data from Other Recycling Facilities

Source of Data	FW	Gl	FM	NFM	CC	MP	Pl	W	CoM	Total
Buybacks										
None	-	-	-	-	-	-	-	-	-	-
Scrap Yards										
SY1	-	-	6,928	11,439	-	-	-	-	-	18,367
SY2	-	-	413	947	-	-	-	-	-	1,360
SY3	-	-	-	-	-	-	-	-	-	-
SY4	-	-	98,705	670	-	-	-	-	-	99,375
SY5	-	-	60	1,186	-	-	-	-	-	1,246
SY6	-	-	14,570	270	-	-	-	-	-	14,840
SY7	-	-	12,500	2,000	-	-	-	-	-	14,500
SY8	-	-	18,986	5,004	100	-	-	-	-	24,090
SY9	-	-	-	103	-	-	-	-	-	103
Brokers										
None	-	-	-	-	-	-	-	-	-	-
Processors/MRF's										
MRF1	-	21	8	187	2,476	1,045	13	13	-	3,763
PR1	-	-	3	194	-	3,573	267	-	-	4,036
PR2	-	-	49,300	-	90	-	-	17	55	49,462
PR3	-	-	-	-	5,420	1,114	-	-	-	6,534
PR4	-	-	-	-	-	-	-	-	-	-
PR5	150	-	-	-	-	-	-	-	-	150
PR6	1,722	-	-	-	-	-	-	-	-	1,722
PR7	-	-	45	-	126	3	145	3	10	332
PR8	5,398	-	-	-	-	-	-	-	-	5,398
PR9	-	2,137	245	240	1,831	-	313	62	-	4,828
PR10	-	-	171	-	18	1	-	-	-	190
PR11	-	-	10	380	91	-	-	5	-	486
PR12	102,307	-	-	-	-	-	-	-	-	102,307
PR13	-	-	-	-	-	3	-	-	-	3
Unadj. Total	109,576	2,158	201,942	22,621	10,152	5,739	738	100	65	353,091
Adj.	-	-	19,241	5,624	1,931	-	-	5	-	26,801
Adj. Total	109,576	2,158	182,702	16,997	8,221	5,739	738	95	65	326,290

Notes: WG = Appliances/White Goods, EW = E-Waste, LAB = Lead-Acid Batteries, FW = Food Waste, Gl= Glass, FM = Ferrous Metals, NFM = Non- Ferrous Metals, CC = Corrugated Cardboard, MP = Mixed Paper, Pl = Plastics, Tx = Textiles, W = Wood, CoM = Single Stream/Commingled, YW = Yard Waste, D/R = Donated or Reused Goods, UO = Used Oil, Ink = Ink Cartridges/Toners, DCB = Dry Cell Batteries, Adj. = Adjusted

Source: SWACO survey data, Ohio EPA. "2021 Material Recovery Facility and Commercial Recycling Data" 2021

Sample Calculations (FM): Total (201,942) – adjustment (19,241) = Adjusted total (182,702)

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 NAICS codes using Reference USA, a business database. New additions to the surveying list are sent a cover letter and survey 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 Other Recycling Programs/Other Sources of Data

Other Recycling Programs or Other Sources of Data	FW	Gl	FM	NFM	CC	MP	Pl	W	CoM	Unadj. Total	Adj.	Adjusted Total
Composting Facilities	-	-	-	-	-	-	-	130	-	130	-	130
Unadjusted Total	0	0	0	0	0	0	0	130	0	130	0	130
Adjustments	-	-	-	-	-	-	-	-	-	-		
Adjusted Total	0	0	0	0	0	0	0	130	0	130		

Notes: WG = Appliances/White Goods, EW = E-Waste, LAB = Lead-Acid Batteries, FW = Food Waste, Gl= Glass, FM = Ferrous Metals, NFM = Non- Ferrous Metals, CC = Corrugated Cardboard, MP = Mixed Paper, Pl = Plastics, Tx = Textiles, W = Wood, CoM = Single Stream/Commingled, YW = Yard Waste, D/R = Donated or Reused Goods, UO = Used Oil, Ink = Ink Cartridges/Toners, DCB = Dry Cell Batteries, Adj. = Adjusted

Source: 2021 Ohio EPA Compost Report

Sample Calculations: Industrial Composting (130) – Adjustments (0) = Adjusted Total (130).

Assumptions: Industrial Food Waste Composting was taken from Ohio EPA's compost report. Food waste reported by haulers, grocery stores, organic processing facilities were credited to the R/C sector.

Table F-4 Industrial Waste Reduced/Recycled in Reference Year

Material	Quantity (tons)
Food	109,576
Glass	2,158
Ferrous Metals	182,702
Non-Ferrous Metals	16,997
Corrugated Cardboard	8,221
All Other Paper	5,739
Plastics	738
Textiles	-
Wood	226
Rubber	-
Commingled Recyclables (Mixed)	65
Ash	-
Non-Excluded Foundry Sand	-
Flue Gas Disulfurization	-
Other (Aggregated)	0.1
Total	326,421

Source(s): Tables F-1, F-2, and F-3

Table F-5 reports the total tons diverted for each program/source.

Table F-5 Quantities Recovered by Program/Source

Program/Source of Industrial Recycling Data	Quantity (Tons)
Industrial survey	0
Data from other recycling facilities	326,290
Composting Facilities	130
Total	326,421

Source(s): Tables F-1, F-2, F-3, and F-4

B. HISTORICAL RECOVERY

The tonnage recovered in the industrial sector followed a consistent trend from 2018 to 2020. In 2018, there was a significant, 59.7%, increase in number of tons recovered. This appears to be mainly due to the number of respondents to the survey and the amount report in the surveys.

Table F-6 a Historical Industrial Recovery by Program/Source

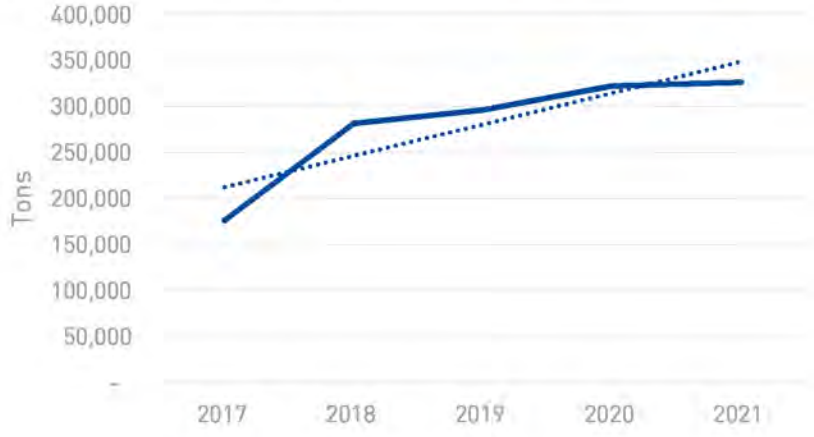
Year	Industrial survey	Data from other recycling facilities	Composting Facilities	Totals
2017	-	176,381	-	176,381
2018	-	281,675	-	281,675
2019	-	296,145	-	296,145
2020	-	322,224	-	322,224
2021	0	326,290	130	326,421

Table F-6b Historical Industrial Recovery by Program/Source

Year	Population	Industrial Recycling (Tons)	Average Pounds/ Person/Day	Annual Percent Change (%)	Annual Tonnage Change (Tons)
2017	1,337,411	176,381	0.72		
2018	1,356,439	281,675	1.14	59.7%	105,294
2019	1,363,507	296,145	1.19	5.1%	14,471
2020	1,379,979	322,224	1.28	8.8%	26,078
2021	1,383,836	326,421	1.29	1.3%	4,197
Average over 5 Year Period		280,569	1.12	18.7%	37,510

Source(s): District Industrial Surveys for 2017 – 2021, "2021 Material Recovery Facility and Commercial Recycling Data" 2017-2021

Figure F-1 Historical Recycling Analysis: Industrial



When considering the five-year period in the aggregate, recovery increased by an average of 37,510 tons, or 18.7% annually. SWACO's recovery of 326,421 tons in 2021 was approximately 16.3% more than the 2017-2021 average of 280,569 tons. The following figure presents the SWACO's historical industrial recovery totals from 2017 to 2021.

C. INDUSTRIAL RECOVERY PROJECTIONS

According to the Ohio EPA's Plan Format v4.1, there is no industrial recycling goal during the reference year. During the reference year, the District achieved a 90% industrial diversion rate. The District projects a quarter of the average annual percentage change in tons recovered from 2017-2021 (5.08% / 4 = 1.27%) for 2022 through 2024. For 2025-2028, projects half of the average annual percentage change in tons recovered from 2017-2021 (5.08% / 2 = 2.54%). For 2029-2030, projects at the average annual percentage change in tons recovered from 2017-2021 (5.08%). The District projects a flat 413,878 tons from 2030 throughout the remainder of the planning period. The District's industrial recovery projections are presented in Table F-7.

Table F-7 Industrial Recovery Projections by Program/Source

Year	Industrial Recycling Tons
2021	326,421
2022	330,568
2023	334,768
2024	339,021
2025	347,635
2026	356,469
2027	365,527
2028	374,814
2029	393,862
2030	413,878
2031	413,878
2032	413,878
2033	413,878
2034	413,878
2035	413,878
2036	413,878
2037	413,878
2038	413,878

Appendix G: Waste Generation

A. HISTORICAL YEAR WASTE GENERATED

The historical waste generation for the District from 2017 through 2021 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 increased as well as recycling has increased during this time period. However, significant fluctuation occurred in these trends for both Residential/Commercial (R/C) and industrial sectors in 2019. The per capita generation rate for R/C generation experienced an increase from 8.25 to 8.79 pounds per person per day (ppd).

Table G-1a Reference Year and Historical Waste Generated

Year	Population	Residential/ Commercial				Industrial			Total (tons)	Annual % Change in Total Tons
		Disposed (tons)	Recycled (tons)	Generated (tons)	Per Capita Generated (ppd)	Disposed (tons)	Recycled (tons)	Generated (tons)		
2017	1,337,411	1,084,623	929,355	2,013,978	8.25	58,521	176,381	234,902	2,248,880	-
2018	1,356,439	1,224,663	980,891	2,205,554	8.91	89,619	281,675	371,294	2,576,848	14.6%
2019	1,363,507	1,140,956	959,541	2,100,497	8.44	107,770	296,145	403,915	2,504,412	-2.8%
2020	1,379,979	1,181,787	974,339	2,156,126	8.56	38,477	322,224	360,701	2,516,827	0.5%
2021	1,383,836	1,233,339	986,865	2,220,204	8.79	35,920	326,421	362,340	2,582,545	0.9%

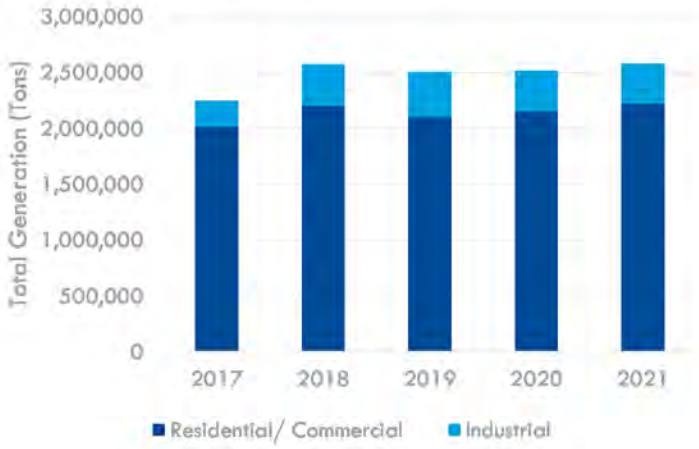
Source(s) of Information:
Disposal from Appendix D
Recycled from Appendices E and F
Populations: Annual district reports

Sample Calculations:
Waste Generation = disposed + recycled = generated
Per Capita Generation = ((generated * 2,000) / 365) / population

Waste Generated = Waste Disposed + Waste Recycled

Total waste generation by the District was calculated by adding the quantities of waste disposed from Appendix D and quantities of recycled from Appendices E and F. Quantities resulting from the disposal and recycling as presented in Table G-1 accurately represent waste generation for the District. Excluded waste was not included in the table as it represented under 10% of total disposal. From 2017 to 2018, there was an increase of 14.6% of total generation due to the increase in both disposal and recycling in both R/C and industrial sectors. Waste generation remained relatively consistent from 2018 to 2021, shown in Figure G-1.

Figure G-1 Historic Waste Generated



The following table compares the daily per capita generation rates of the District and other urban Ohio solid waste management districts (SWMDs). The statewide statistics were also included for reference.

Table G-1b Generation Trends for Urban Ohio SWMDs

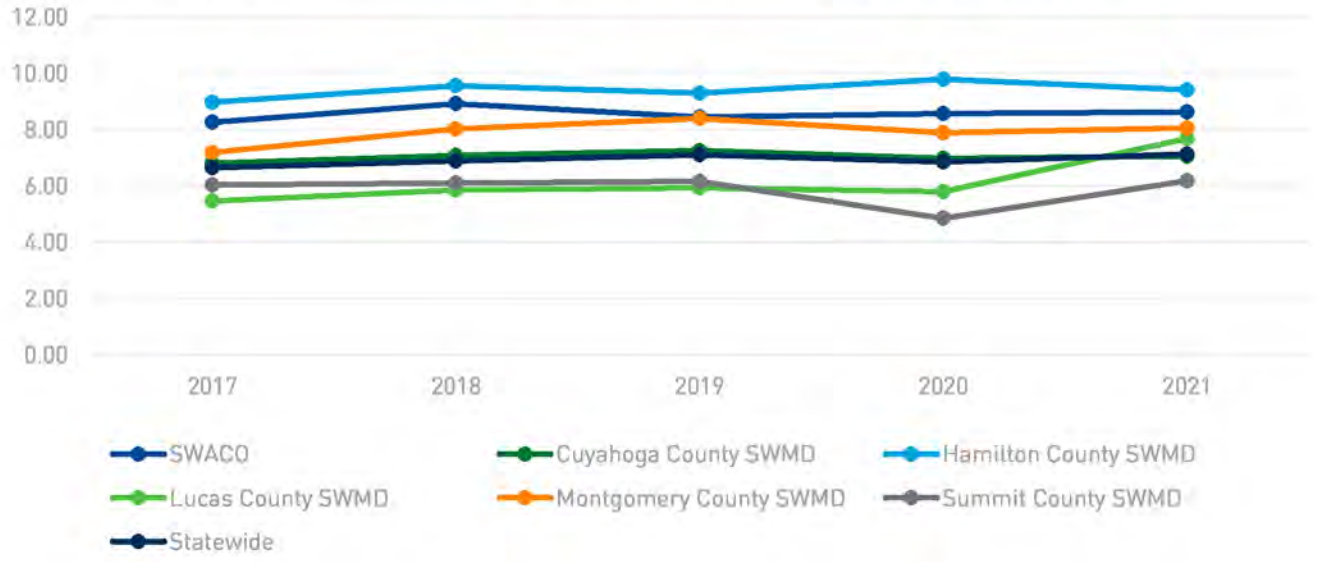
Reference Year 2021	SWACO	Cuyahoga County SWMD	Hamilton County SWMD	Lucas County SWMD	Montgomery County SWMD	Summit County SWMD*	Statewide
Population	1,383,836	1,264,817	818,939	429,191	535,840	540,255	11,758,775
Residential/Commercial Diversion Rate	45%	24%	33%	36%	24%	28%	28%
Industrial Diversion Rate	90%	70%	88%	78%	93%	38%*	53%
Total Waste Generation (Disposal + Recycling) P/P/P/D	10.05	10.04	16.15	10.68	11.64	6.99	14.20
Total Diversion Rate	52%	38%	56%	48%	46%	29%	41%

*Summit County (also known as Summit-Akron or ReWorks) did not report industrial recycling in 2021. Industrial recycling reported for 2020 was used for this analysis.

Residential Generation Analysis

Total residential/commercial waste generation in the District has increased approximately 163,000 tons or 8% since 2017 as illustrated in Figure G-2. Of the total generation, disposal increased approximately 105,000 tons or 10% over a 5-year period, while recycling increased nearly 58,000 tons or 6%. Compared to other urban SWMDs, SWACO has the second highest, to Hamilton County, average pounds/person/day generation and higher than the average statewide generation for the residential/commercial sector.

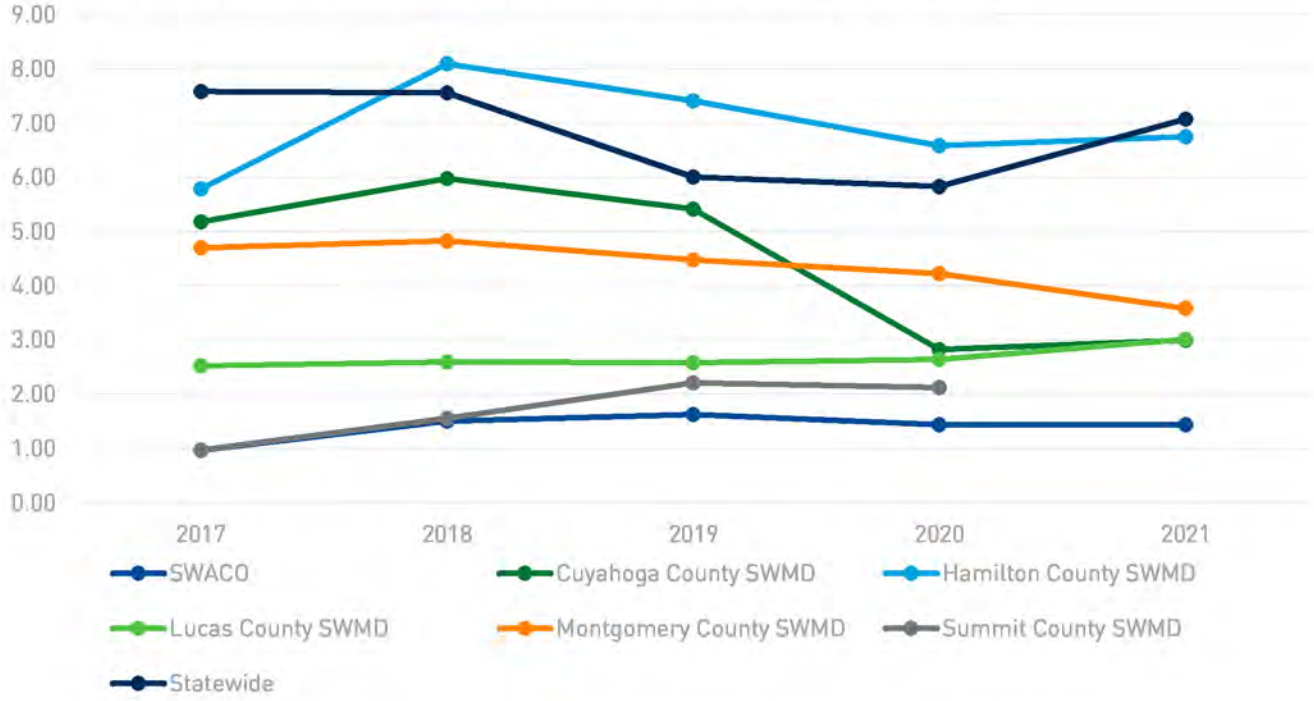
Figure G-2 Historic Residential/Commercial Total Waste Generation Rates for Urban Ohio SWMDs:



Industrial Generation Analysis

Total industrial waste generation in the District has increased approximately 128,000 tons or 54% since 2017 as illustrated in Figure G-2. Of the total generation, disposal decreased approximately 23,000 tons or 39% over a 5-year period, while recycling increased nearly 150,000 tons or 85%. Compared to other urban SWMDs, SWACO has the lowest average pounds/person/day generation and lower than the average statewide generation for the industrial sector.

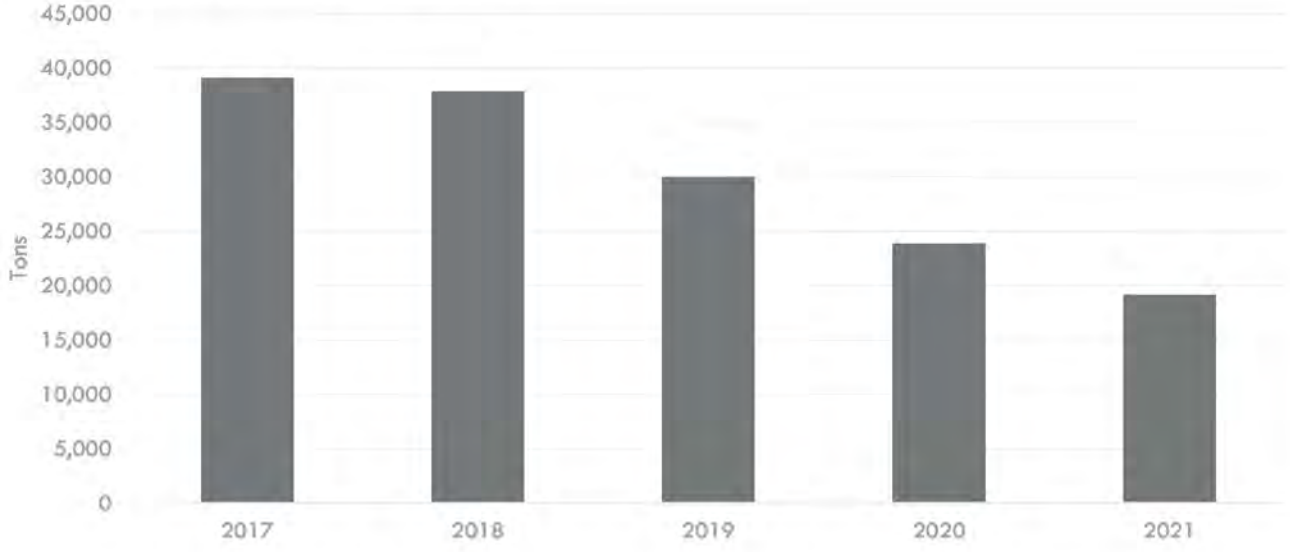
Figure G-3 Historic Industrial Total Waste Generation Rates for Selected Ohio SWMDs



Exempt Waste

The total tons of excluded waste generated in the District is shown in Figure G-5. The excluded tons generated falls under 10% of the total waste stream. Excluded waste accounted for an average of 1.2% of the total material generated in the County.

Figure G-4 Historic Excluded Waste Generated



B. GENERATION PROJECTIONS

Projections for the District have been developed in Appendices D, E, and F for disposal and recycling for the residential/commercial and the industrial sector. Table G-2, summarizes these projections which are presented in detail in Appendices D, E and F.

Table G-2a Generation Projections

Year	Population	Residential/ Commercial				Industrial			Total (tons)
		Disposed (tons)	Recycled (tons)	Generated (tons)	Per Capita Generated (ppd)	Disposed (tons)	Recycled (tons)	Generated (tons)	
2021	1,383,836	1,233,339	986,865	2,220,204	8.79	35,920	326,421	362,340	2,582,545
2022	1,406,721	1,258,094	1,010,787	2,268,881	8.84	35,920	330,568	366,488	2,635,369
2023	1,429,607	1,283,348	1,036,128	2,319,477	8.89	35,920	334,768	370,687	2,690,164
2024	1,452,492	1,309,113	1,062,725	2,371,838	8.95	35,920	339,021	374,941	2,746,779
2025	1,471,521	1,335,398	1,090,787	2,426,185	9.03	35,920	347,635	383,555	2,809,740
2026	1,486,834	1,362,215	1,126,020	2,488,235	9.17	35,920	356,469	392,388	2,880,623
2027	1,502,148	1,375,894	1,167,960	2,543,853	9.28	35,920	365,527	401,446	2,945,299
2028	1,517,461	1,389,711	1,217,789	2,607,500	9.42	35,920	374,814	410,734	3,018,234
2029	1,532,774	1,401,146	1,276,614	2,677,760	9.57	35,920	393,862	429,782	3,107,542
2030	1,548,088	1,412,681	1,332,110	2,744,791	9.72	35,920	413,878	449,798	3,194,589
2031	1,561,579	1,424,317	1,383,211	2,807,529	9.85	35,920	413,878	449,798	3,257,327
2032	1,575,070	1,430,422	1,434,640	2,865,062	9.97	35,920	413,878	449,798	3,314,860
2033	1,588,561	1,436,552	1,479,816	2,916,368	10.06	35,920	413,878	449,798	3,366,166
2034	1,602,052	1,442,710	1,524,654	2,967,364	10.15	35,920	413,878	449,798	3,417,162
2035	1,615,543	1,448,894	1,561,656	3,010,550	10.21	35,920	413,878	449,798	3,460,348
2036	1,627,428	1,455,104	1,599,670	3,054,775	10.29	35,920	413,878	449,798	3,504,573
2037	1,639,313	1,461,342	1,628,955	3,090,297	10.33	35,920	413,878	449,798	3,540,094
2038	1,651,199	1,467,607	1,658,860	3,126,467	10.38	35,920	413,878	449,798	3,576,264

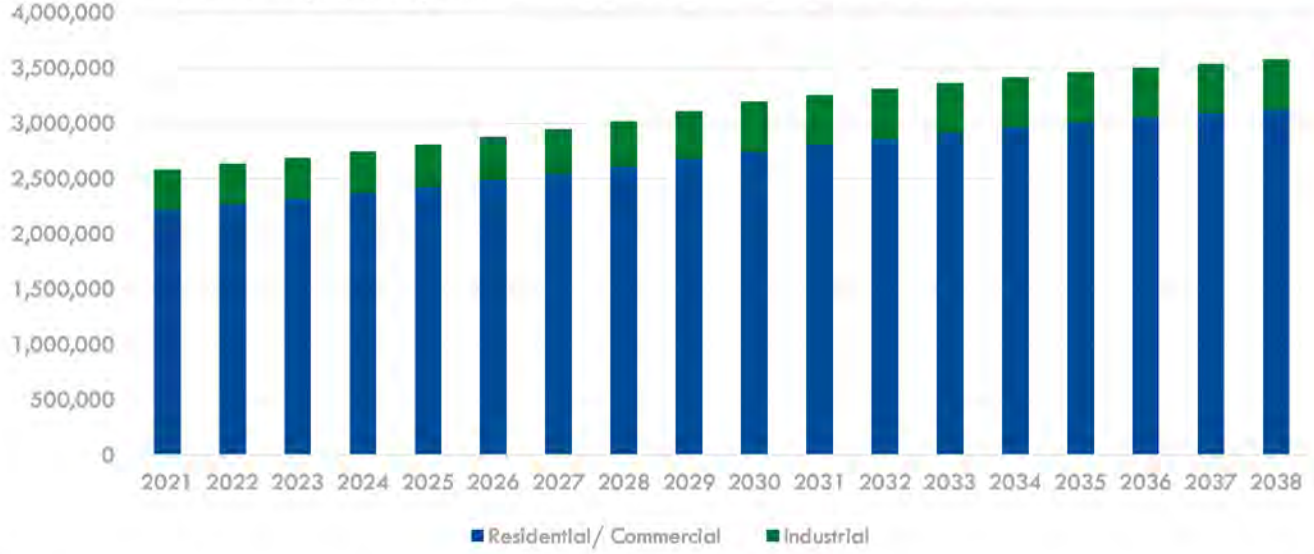
Source(s) of Information:
Disposal from Appendix D
Recycled from Appendices E and F
Populations: Annual district reports

Sample Calculations:
Waste Generation = disposed + recycled = generated
Per Capita Generation = ((generated * 2,000) / 365) / population

Table G-2b Generation Projections for Disposal and Recycling

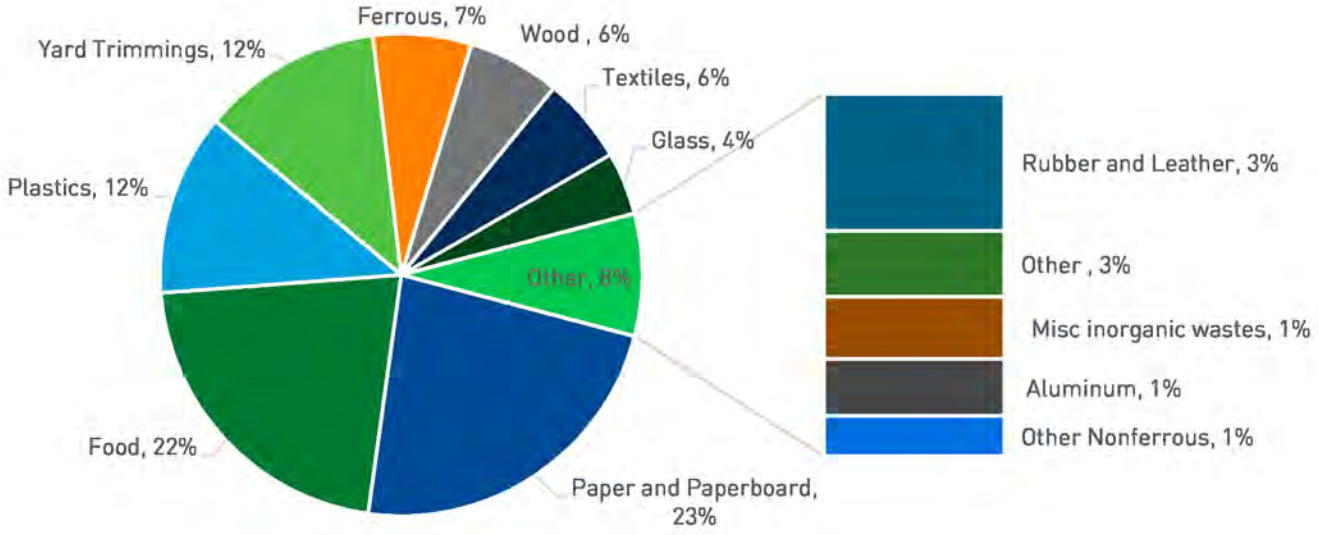
Sector	Type	Current Plan Projected Tons
Residential	Disposal	Residential projections based on 2017 to 2021 average annual change multiplied by 75% at 2.26% until 2026, halved at 1.13% until 2029, and flat 0.50% until end of planning period.
	Recycling	Curbside Recycling Services is projected with the focus of changes made with the curbside programs such as the City of Columbus changing from biweekly to weekly collections. Drop-off Recycling Locations is projected with the focus of changes made with the curbside programs. Community Food Waste is projected with the focus of a new organics facility startup. Community Yard Waste is projected to increase 1.0 percent annually. SWACO Data - SWACO HHW Mobile Collections is projected to increase 0.5 percent annually. SWACO Data - SWACO Permanent HHW Collections is projected to increase with population growth annually.
Commercial	Disposal	Commercial average annual change multiplied by 50% at 1.91% until 2026, halved at 0.95% until 2031, and flat 0.40% until end of planning period.
	Recycling	Commercial survey data is projected flat as SWACO mainly relies on broker and processor data for businesses. Data from Other Recycling Facilities is projected with the focus of Recycling Business Champion program startup. Ohio EPA Commercial Retail Data is projected to increase 1.0 percent annually. This could be conservative. Very dependent on retailer outreach conducted by Ohio EPA. Compost Facilities Food Waste and Other Food Processing is projected with the focus of a new organics facility startup. Compost Facilities Yard Waste is projected to increase 1.0 percent annually. Ohio EPA Food Waste Data is projected to increase 1.0 percent annually. Ohio EPA Scrap Tire Data is projected to increase 1.0 percent annually.
Industrial	Disposal	The industrial tons are projected at a conservative flatlined 35,920 tons from 2021.
	Recycling	For 2022-2024, projects a quarter of the average annual percentage change in tons recovered from 2017-2021 (5.08% / 4 = 1.27%). For 2025-2028, projects half of the average annual percentage change in tons recovered from 2017-2021 (5.08% / 2 = 2.54%). For 2029-2030, projects at the average annual percentage change in tons recovered from 2017-2021 (5.08%). For 2030-2038, projects a flat 413,878 tons.
Excluded	Disposal	Total disposal refers to the sum of waste direct hauled and transferred. According to Ohio EPA Format 4.1, if excluded waste is 10 percent or less of total disposal in the reference year, then SWACO's are not required to account for excluded waste in the solid waste management plan.

Figure G-5 Generation Projections by Residential/Commercial and Industrial Sectors



In the Advancing Sustainable Materials Management: 2018 Tables and Figures, estimated the total generation of waste into 13 material categories (Figure G-6),

Figure G-6 EPA Total Generation Estimation, 2018



The percentages were applied to the total estimated generation over the planning period in Table G-3.

Table G-3 Composition of Residential/Commercial Waste based on 6 EPA Total Generation Estimation, 2018

Material	Paper and Paper-board	Glass	Ferrous	Alum-inum	Other Non-ferrous	Plastics	Rubber and Leather	Textiles	Wood	Other	Food	Yard Trimmings	Misc inorganic wastes	R/C waste generated
%	23.1%	4.2%	6.6%	1.3%	0.9%	12.2%	3.1%	5.8%	6.2%	1.5%	21.6%	12.1%	1.4%	100.0%
2021	284,901	51,800	81,400	16,033	11,100	150,467	38,234	71,534	76,467	18,500	266,401	149,234	17,267	1,233,339
2022	290,620	52,840	83,034	16,355	11,323	153,487	39,001	72,969	78,002	18,871	271,748	152,229	17,613	1,258,094
2023	296,453	53,901	84,701	16,684	11,550	156,569	39,784	74,434	79,568	19,250	277,203	155,285	17,967	1,283,348
2024	302,405	54,983	86,401	17,018	11,782	159,712	40,583	75,929	81,165	19,637	282,768	158,403	18,328	1,309,113
2025	308,477	56,087	88,136	17,360	12,019	162,919	41,397	77,453	82,795	20,031	288,446	161,583	18,696	1,335,398
2026	314,672	57,213	89,906	17,709	12,260	166,190	42,229	79,008	84,457	20,433	294,238	164,828	19,071	1,362,215
2027	317,831	57,788	90,809	17,887	12,383	167,859	42,653	79,802	85,305	20,638	297,193	166,483	19,263	1,375,894
2028	321,023	58,368	91,721	18,066	12,507	169,545	43,081	80,603	86,162	20,846	300,178	168,155	19,456	1,389,711
2029	323,665	58,848	92,476	18,215	12,610	170,940	43,436	81,266	86,871	21,017	302,648	169,539	19,616	1,401,146
2030	326,329	59,333	93,237	18,365	12,714	172,347	43,793	81,936	87,586	21,190	305,139	170,934	19,778	1,412,681
2031	329,017	59,821	94,005	18,516	12,819	173,767	44,154	82,610	88,308	21,365	307,653	172,342	19,940	1,424,317
2032	330,427	60,078	94,408	18,595	12,874	174,511	44,343	82,964	88,686	21,456	308,971	173,081	20,026	1,430,422
2033	331,844	60,335	94,812	18,675	12,929	175,259	44,533	83,320	89,066	21,548	310,295	173,823	20,112	1,436,552
2034	333,266	60,594	95,219	18,755	12,984	176,011	44,724	83,677	89,448	21,641	311,625	174,568	20,198	1,442,710
2035	334,694	60,854	95,627	18,836	13,040	176,765	44,916	84,036	89,831	21,733	312,961	175,316	20,285	1,448,894
2036	336,129	61,114	96,037	18,916	13,096	177,523	45,108	84,396	90,216	21,827	314,303	176,068	20,371	1,455,104
2037	337,570	61,376	96,449	18,997	13,152	178,284	45,302	84,758	90,603	21,920	315,650	176,822	20,459	1,461,342
2038	339,017	61,639	96,862	19,079	13,208	179,048	45,496	85,121	90,992	22,014	317,003	177,580	20,546	1,467,607

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

Appendix H: Strategic Evaluation

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 2020 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 program evaluation. Additional best practice research and/or benchmarking will be used when evaluating existing and new programming.

In this Appendix, the status of Franklin County reduction and recycling efforts were evaluated in the context of factors presented in 13 analyses. This strategic program evaluation was performed on the following analyses:

- H-1: Residential Recycling Infrastructure Analysis
- H-2: Commercial/Institutional Sector Analysis
- H-3: Industrial Sector Analysis
- H-4: Residential/Commercial Waste Composition Analysis
- H-5: Economic Incentive Analysis
- H-6: Restricted and Difficult to Manage Waste Analysis
- H-7: Diversion Analysis
- H-8: Special Program Needs Analysis
- H-9: Financial Analysis
- H-10: Regional Analysis
- H-11: Data Collection Analysis
- H-12: Education/Outreach Analysis
- H-13: Recyclable Material Processing Capacity Analysis

H-1 Residential Recycling Infrastructure Analysis

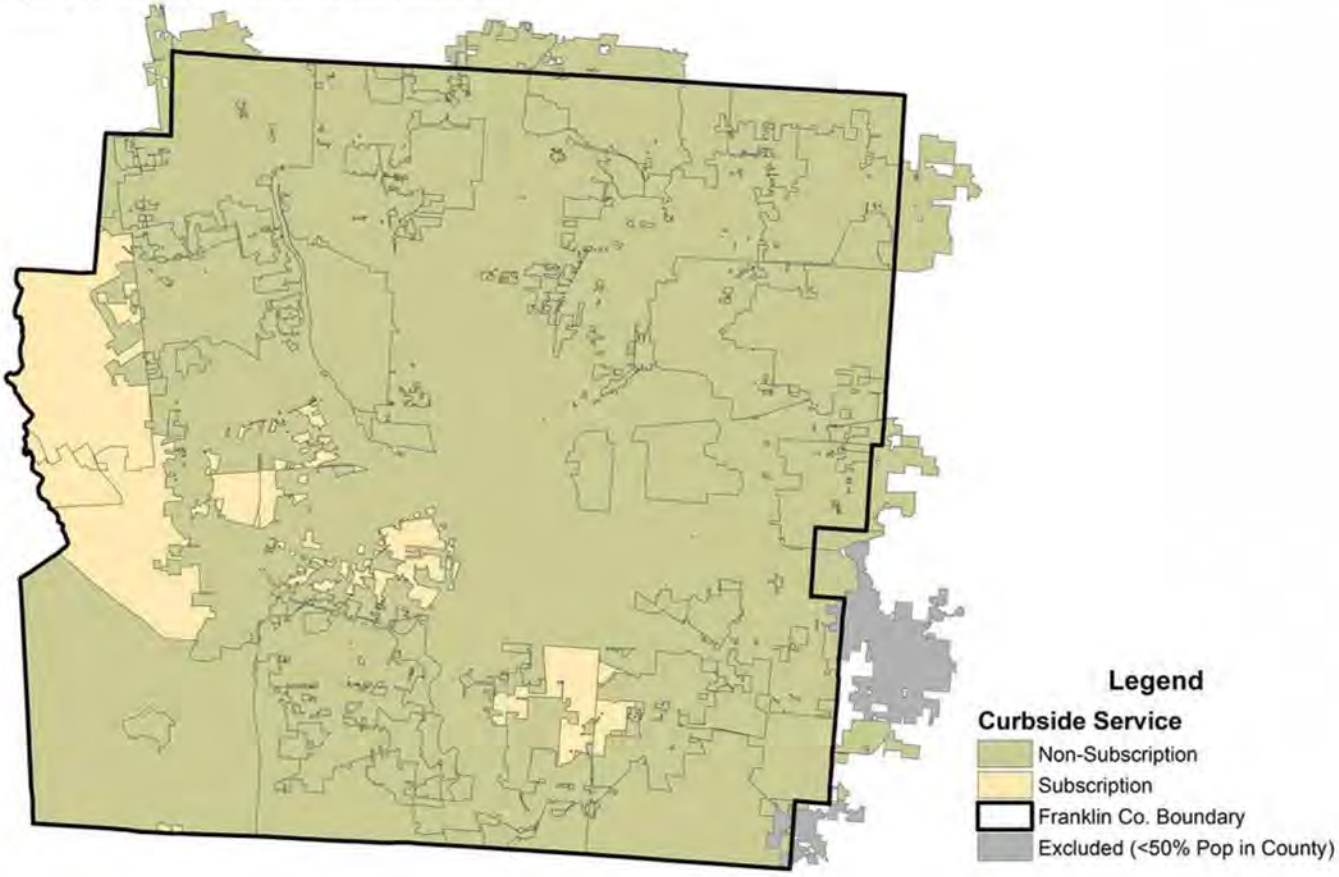
This evaluation of the SWACO's existing residential recycling infrastructure determines whether the needs of the residential sector are being met and if the infrastructure is adequately performing. There are many materials that can be recycled. SWACO's waste management system relies on various collection systems and programs to divert materials from the landfill to be recycled. The residential recycling infrastructure consists of curbside programs, drop-off recycling programs, special event drop-offs, take-back retailers, reuse centers, thrift stores, and a network of food banks. SWACO's role in instituting this network of available opportunities varies.

A. CURBSIDE PROGRAMS

Geographical

Curbside recycling is a decentralized system of for-profit and government agency operations. SWACO does not operate/provide for curbside recycling services. SWACO encompasses 41 political entities. All entities have access to curbside with 36 of the 41 in a non-subscription curbside recycling program. These are achieved through contracts between the municipality and the hauler. The remaining five entities have access by subscription with local haulers in the area.

Figure H-1.1 Map of Curbside Communities



Functionality

All communities in Franklin County have access to non-subscription or subscription curbside recycling for single-family households.

Comparison of Reference Year to Currently Approved Plan

As shown in Table H.1, recycling increased since the last plan update from 64,939 to 65,796 tons; a 1.3% increase.

Table H-1.1 Community Curbside Recycling

Community	2014 Tons	2021 Tons	Households	2021 lbs./ Household	Type of Curbside
Bexley (City)	1,322	1,247	4,300	580	Non-subscription
Blendon Township	336	550	2,450	449	Non-subscription
Brice (Village)	5	5	46	219	Non-subscription
Canal Winchester (City)	N/A	575	3,000	384	Non-subscription
Clinton Township	159	219	1,431	307	Non-subscription
Columbus (City)	33,983	30,842	205,000	301	Non-subscription
Dublin (City)	5,165	4,620	14,200	651	Non-subscription
Gahanna (City)	2,568	2,578	10,038	514	Non-subscription
Grandview Heights (City)	882	980	3,500	560	Non-subscription
Grove City (City)	2,106	3,556	15,646	408	Non-subscription
Groveport (City)	225	234	2,153	218	Non-subscription
Hamilton Township	N/A	204	800	511	Non-subscription
Hilliard (City)	2,589	2,943	9,856	597	Non-subscription
Jackson Township	-	-	1,800	408	Non-subscription
Jefferson Township	648	1,081	5,000	432	Non-subscription
Lockbourne (Village)	N/A	17	94	355	Non-subscription
Madison Township	438	408	3,100	263	Non-subscription
Marble Cliff (Village)	N/A	N/A		N/A	Non-subscription
Mifflin Township	N/A	163	1,000	327	Non-subscription
Minerva Park (Village)	40	159	563	566	Non-subscription
New Albany (City)	1,048	914	3,500	522	Non-subscription
Norwich Township	308	444	1,377	645	Non-subscription
Perry Township	99	452	1,500	603	Non-subscription
Plain Township	243	461	800	1,152	Non-subscription
Pleasant Township	263	430	1,836	469	Non-subscription
Reynoldsburg (City)	2,010	2,077	9,950	417	Non-subscription
Riverlea (Village)	78	65	233	558	Non-subscription
Sharon Township	N/A	120	765	313	Non-subscription
Truro Township	13	46	310	296	Non-subscription
Upper Arlington (City)	4,608	4,252	13,320	638	Non-subscription
Urbancrest (Village)	25	38	200	376	Non-subscription
Valleyview (Village)	23	-	275	-	Non-subscription
Washington Township	270	137	386	708	Non-subscription
Westerville (City)	3,137	3,144	11,250	559	Non-subscription
Whitehall (City)	544	951	5,527	344	Non-subscription
Worthington (City)	1,615	1,662	5,200	639	Non-subscription
Brown Township	N/A	N/A	750	N/A	Subscription
Franklin Township	189	223	2,800	159	Subscription
Harrisburg (Village)	N/A	N/A	154	N/A	Subscription
Obetz (City)	N/A	N/A	1,633	N/A	Subscription
Prairie Township	N/A	N/A	6,936	N/A	Subscription
Total	64,939	65,796	352,679		

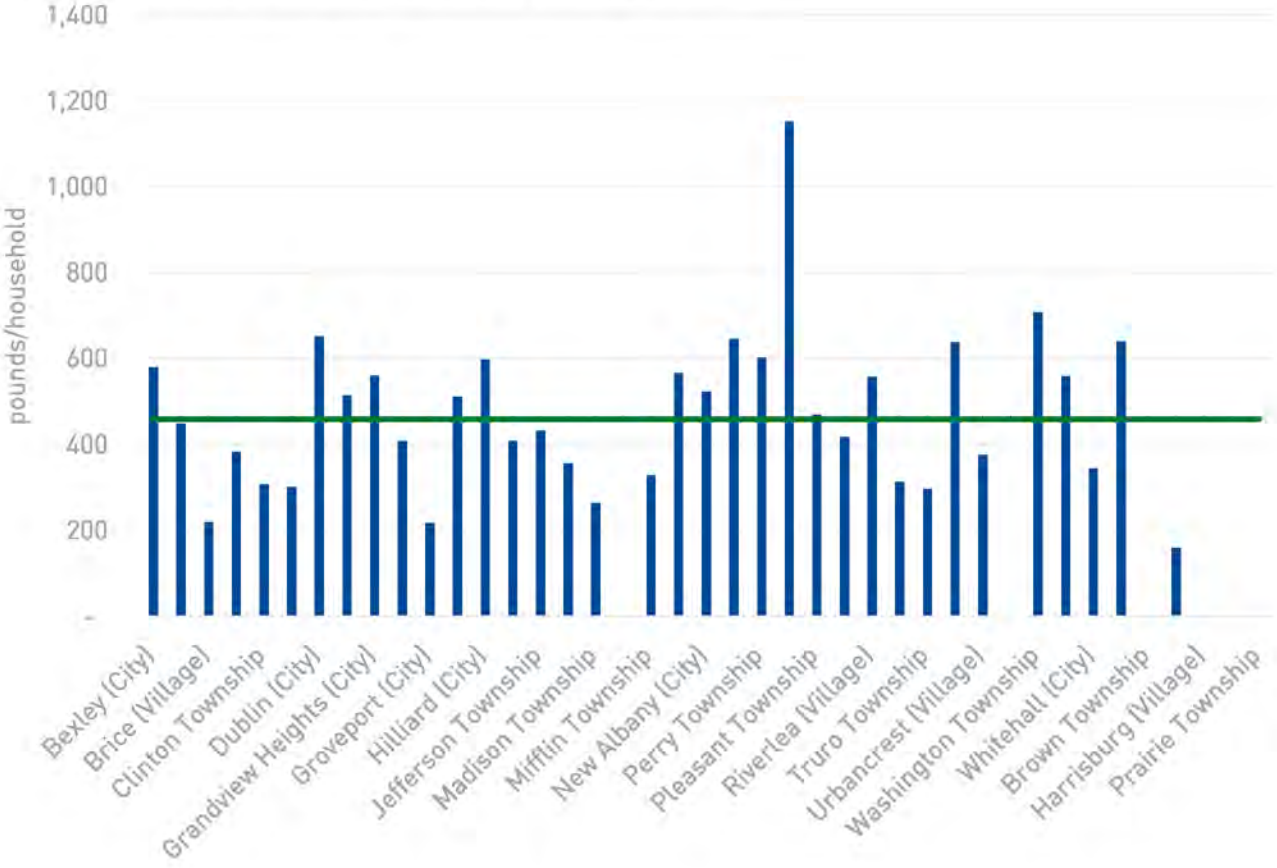
Participation/Performance

While the Policy Committee sees the measured tonnage growth successful, the SWOT identified concerns to improve community participation in the curbside programs. As shown in Figure H-1.2, a benchmark of 459 pounds per household was established. However, a number of communities recovery falls below this benchmark.

The Columbus curbside program generates almost half of the total tons generated in the District. The historical recovery rate declined but 2021 was not a valid representative year. Columbus has dedicated resources to promoting their RecyColumbus program and claims over 75% participation. Columbus had in the past won local, regional and national awards for its work for their combined intensive neighborhood level grassroots activities with smart media outreach to improve recycling rates. The program won a prestigious award-Green City of the Year 2013 by Waste & Recycling News. The District will continue to partner with the City to enhance participation and recovery. The District will focus on assisting with the buildout, performance review, and adjustments for the following ongoing RecyColumbus progamming:

- Sustainable Columbus and solid waste management's contribution to Columbus Climate Action Plan
- GreenSpot Community Membership education program
- Community Backyards Compost Bid promotion and rebate program
- GreenSpot Neighborhood promotion program
- GreenSpot and the Arts and Kids promoting recycling and repurposing
- Promotion of weekly curbside program, clean neighborhoods, and healthy environment programming.

Figure H.1.2 Community Pounds per Household Recycled in 2021



The Recycling Partnership in the 2020 State of Curbside recycling estimates that the average single-family household generates 768 pounds of recyclable material per year in the United States. An estimated average pounds of recyclable material from non-subscription curbside programs is 459 pounds while subscription programs collect 331 pounds per household. For SWACO, 22 of the 41 entities reported higher average pounds per household than the national average.

On average from 2017 to 2021, 66,299 tons of recycles come from curbside recycling programs. This accounts for approximately 6.7% of the residential/commercial recycling stream.

Figure H-1.3. Historical Trend for Curbside Recycling

As mentioned earlier in this section, SWACO does not directly operate/provide 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. During 2021 SWACO assisted Consortiums #1 and #3 with re-bidding their curbside trash, recycling, and yard waste contracts (16 communities), as well as providing assistance to Worthington in re-bidding their contract.

In 2021, twenty-four communities were participating in one of three community consortiums. A total of 31 of the 41 communities participate in some form of contract assistance from SWACO.

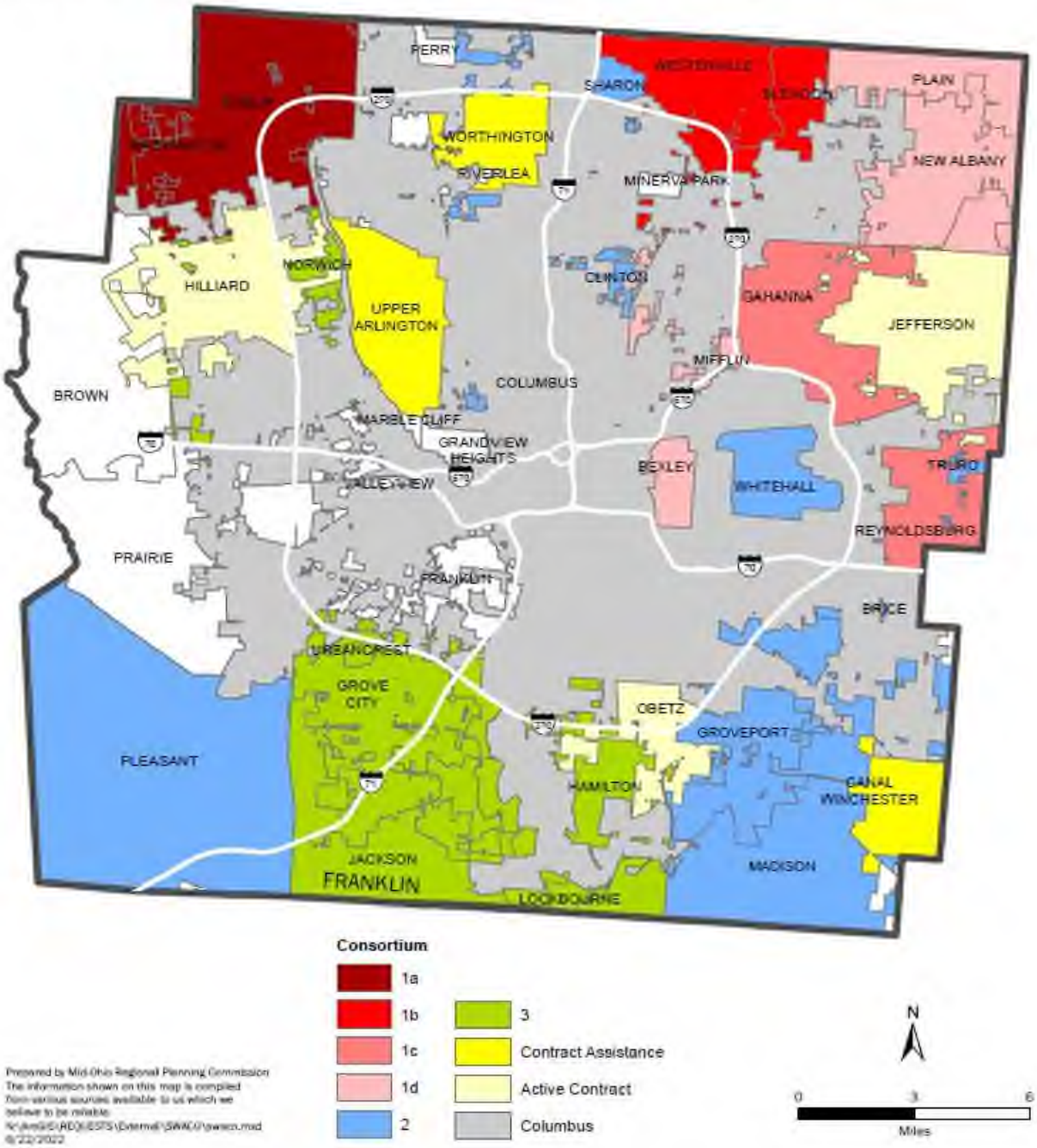
The community consortiums are fluid in the sense the communities may opt out of the consortium upon contract expiration and may join another consortium or be independent. According to data collected by SWACO, approximately 23,643 tons of recyclable materials were collected from the three consortiums in 2021 or 36% of curbside recycling tonnages.

While the consortium communities are accounting for less in collected tonnages, they are some of the better performing curbside programs. Ten of the eighteen communities shown in Figure H-1.2 performing at 459 pounds/household/year or above are participating in a community consortium. The program has helped to create uniform polices and support the adoption of best practices for residential recycling.

Eastman & Smith LTD, contracted legal counsel, assisted with consortiums by creating a memorandum to SWACO. SWACO's costs to fund the outreach and contract services for community consortiums range from $25,000-75,000 depending on the contract cycles.

SWACO provides contract assistance through the "Consortium" program and directly to communities through individual engagement.

Figure H-1.4 Residential Recycling Contract Assistance / Consortium Program



Prepared by Mid-Ohio Regional Planning Commission
The information shown on this map is compiled from various sources available to us which we believe to be reliable.
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6/22/2022

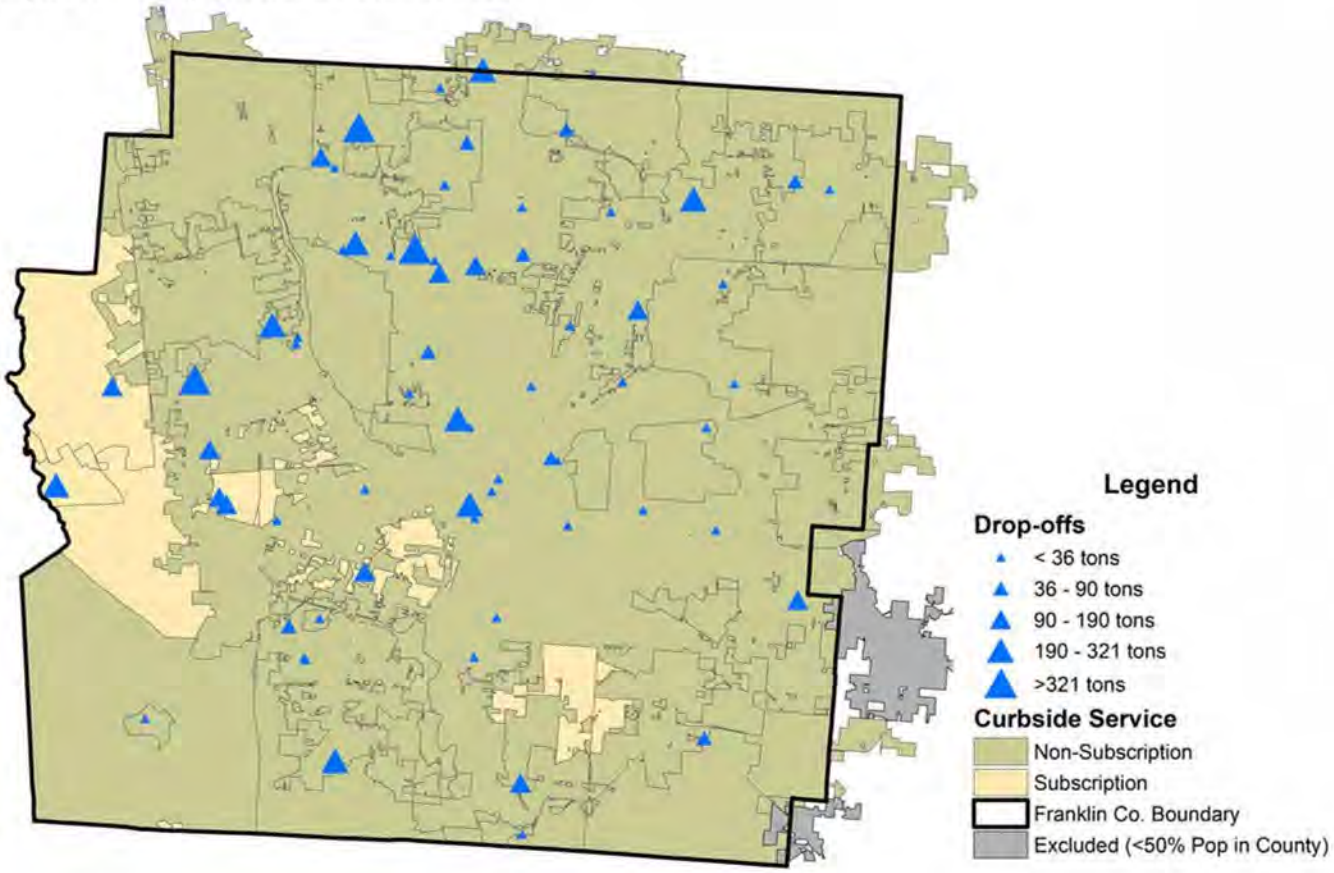
B. DROP-OFF PROGRAMS

Geographical

SWACO's Recycling Drop-Off Program is essential for assisting residents without curbside service (such as multi-family housing) and additional material or overflow from curbside recycling programs. In 2021, SWACO provides all drop-off containers and hauling services for 64 recycling drop-off locations and is operated by SWACO employees with 3 drivers and 1 maintenance personnel.

SWACO collaborates and continues to analyze optimal drop-off recycling locations. Factors such as contamination, open dumping, and host property support. Illegal dumping in the drop-off containers remains a problem with 21 tons of material cleaned up annually.

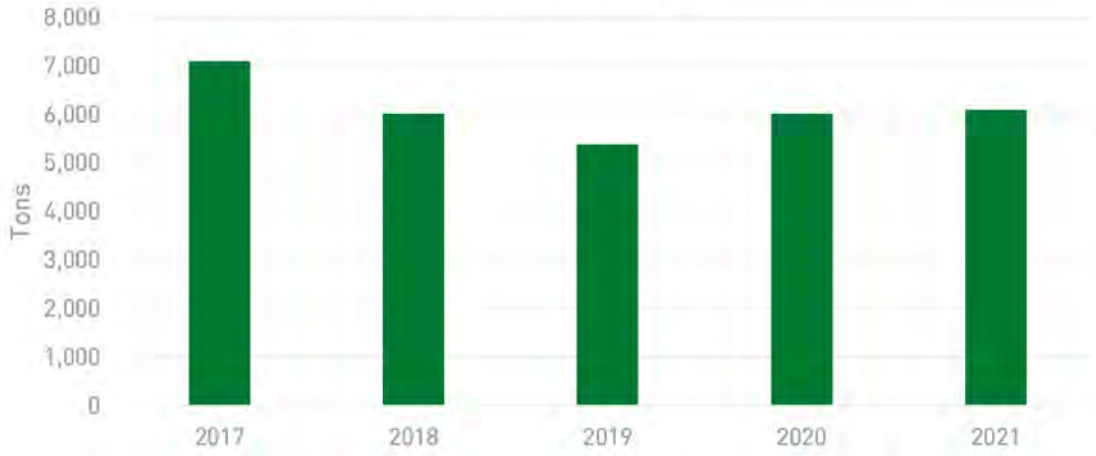
Figure H-1.5 Map of Curbside Communities



Participation/Performance

Recycling tonnages reported historically are shown in Figure H-1.6. There was a dip in 2019 but the programs have increased including the pandemic COVID-19 showing an increase in to 2020. This follows a similar trend in the curbside recycling tonnages for 2019 through 2021. Some of the increase may be attributed to the Recycle Right campaigns performed.

Figure H.1.6 Historical Trend for Drop-off Recycling Tonnages



Estimated recovery pounds per household was calculated by dividing total pounds recovered by total number of households and population in Franklin County. 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 23.4 pounds per household in 2021.

Table H-1.2. Estimated Drop-off Recovery per Household

Category	Drop-off Analysis
2021 Tonnage Recovered	6,085
2021 Pounds Recovered	12,170,260
2021 Franklin County Population	1,383,836
2021 Estimated Pounds/Person	8.8
2021 Franklin County Households	519,237
2021 Estimated Pounds/Household	23.4

Notes:
Sample Calculation: 12,170,260 pounds / 519,237 households = 23.4 pounds/person
Source: SWACO data, Appendix C, and Census data Households, 2016-2020

Individualized 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. Each location is estimated based on pick up and number of bins at each site. Site location and container placement relied on arrangements with property owners and rarely combined demographic data, census data and known recycling service opportunities.

Drop-off recycling appears to be less effective than curbside. Drop-off recycling assists with filling the gap between curbside programs and areas which do not have this type of access such as multi-family housing. 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.

C. MULTI-FAMILY

Throughout the county, 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 for multi-family households. At this time, the multi-family residential recycling infrastructure is not clearly defined other than SWACO's drop-off recycling containers. Further complicating data analysis, 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.

Many drop-offs are strategically provided at apartment or condominium complexes or in proximity purposely targeting multi-family households. It is uncertain how many of these households use the opportunity. 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.

In 2021 and 2022, SWACO was working on pilots for multifamily recycling at several complexes in the city of Columbus to determine the cost, impact and feasibility of offering these services. The pilot is limited in size and scope to ensure the most accurate results, however SWACO is always interested in connecting with property managers of complexes that wish to offer recycling.

D. CONCLUSIONS AND OPPORTUNITIES

Curbside Recycling

- Curbside compost pilots may complement traditional curbside diversion programs. Additional acceptable materials has been determined to improve participation and recovery.
- Educational opportunities with new accepted material implementation. Education need to compliment and reinforce stickers on carts/containers.
- Approximately 60,000 tons of residential recyclables are diverted annually. However, roughly 85,000-98,000 tons of residential recyclables are landfilled annually. The current capture rate for recyclables is approximately 40%.
- 92% of the population agrees that it reflects well on their community when they recycle.
- Surveys report 78% find recycling at home convenient and easy while nearly 75% agree that keeping track of what can be recycled is confusing.
- Columbus program performance is below the benchmark recovery rate. District will continue support of the new weekly curbside collection program promotion and the City's Green Spot promotion program that includes a home composting rebate program.

Drop-off Recycling

- Drop-offs provide recycling opportunity to single-family households, multi-family households, schools, and businesses.
- 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 recycling drop-off program continues to provide value to Franklin County residents and businesses.
- Additional locations are needed to geographic address gaps in program access.
- Gradual promotional strategy could increase amounts collected.
- New recycling access at apartment complexes could decrease program usage over the next 5-7 years.
- Enforcement strategies could be bolstered to reduce illegal dumping.
- May require purchasing 1-2 new trucks over the next 5-7 years.
- Labor and recycling processing costs are the largest operational expenses. Vehicle expenses (fuel & maintenance) are also significant.
- Suggested cameras at less busy sites to assist pick up frequency.
- SWACO works with the community/city-owned property for drop-off locations.

- Increase landfilling costs to incentivize other forms of waste diversion.
- Some challenges with locating suitable host sites. Host sites sometimes request removal of the drop-offs.

Multi-family Recycling

- Pilot programs can be compared to near drop-off recycling locations to assist with impact assessment.
- Drop-off additions may be strategically placed in close proximity to multi-family housing and gaps geographically.

H-2 Commercial/Institutional Sector Analysis

Evaluation of the SWACO'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 goal of this analysis is to determine if the commercial/institutional sector is already adequately served or if additional programing 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.

A. GEOGRAPHICAL

SWACO 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.

B. 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.

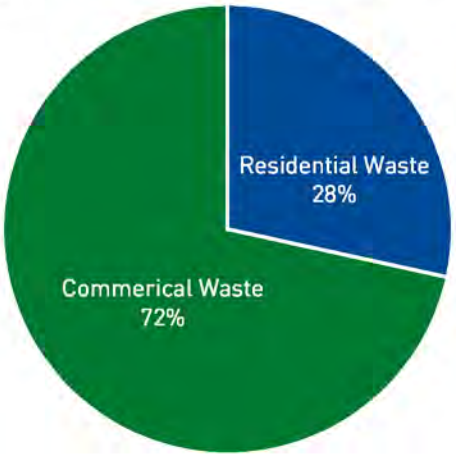
A total of 1,291,317 tons were landfilled in 2021, consisting of residential, commercial, and industrial wastes.

Table H-2.1 Total Waste Disposed in Reference Year

	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Direct Hauled	632,756	35,920	1,075	669,751
Transferred	600,583	0	18,052	618,634
Incinerated	29	2,902	0	2,932
Total	1,233,368	38,822	19,127	1,291,317

To better understand the composition and characteristics of the materials disposed of in SWACO's waste stream, a waste characterization study was conducted in 2019. 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-2.1.

Figure H-2.1 Commercial vs. Residential Waste



Taking total waste landfilled of 977,451 tons, subtracting the residential curbside community data of 350,361 tons calculates an estimated 883,007 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-2.1.

Table H-2.2. Estimated Commercial Landfilled Tonnages per Material Category

Composition Material Categories	% Disposed	Estimated 2019 Tons Landfilled
Food Waste	14.9%	102,767
Fibers	28.5%	196,709
Plastics	9.1%	62,708

Sample Calculation: 690,207 tons of commercial waste x 28.5% fiber composition = 196,709 tons
Source: Cascadia and MSW Consultants 2018-2019 Waste Characterization Stu
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.

C. DIVERSION STATISTICS

Commercial recycling data is collected from buybacks (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 buybacks (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-2.3. Estimated Commercial Recycling

Data Sources	Tons
Processors	211,310
MRFs	100,046
OHIO EPA Retail Data	55,878
Total	367,234
Scrap Yards (mix of residential and commercial)	Possible Additional 109,198

Source: SWACO survey data, Ohio EPA. "Material Recovery Facility and Commercial Recycling Data" 2021

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 jurisdiction. Fiber materials were identified as approximately 29% of the total material landfilled and were primarily generated by commercial businesses.

D. 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

E. COMMERCIAL CONSTITUENTS AND PROGRAM GOALS

Commercial Business, 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 ensure 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.

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-2.4 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 Josephinium	

Source: 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.

SWACO updated its school district solid waste and recycling consortium in 2017. The program started in 2012 and is ongoing. With assistance from SWACO and a contracted law firm, Franklin County school districts and the Educational Service Center of Central Ohio have cooperated in a joint bid process for the collection, transportation and delivery, disposal and/or processing of solid waste and recyclable materials, including paper, cardboard, carton containers, plastic bottles & tubs, glass bottles and jars, and metal cans – from entering the landfill. SWACO and Eastman & Smith provide technical assistance and legal advice throughout each year, as

needed. The joint bidding process occurs every 3 – 5 years. School districts in the 5-year consortium reformulated in 2017 include: Bexley, Columbus, Educational Service Center of Central Ohio, Groveport Madison, Hilliard City Schools, New Albany Plain Local, Reynoldsburg, South-Western, Upper Arlington, Westerville, and Whitehall City Schools. This cooperative bidding program allows school systems to leverage their collective buying power by cooperatively bidding for trash, recycling, and potentially other services, resulting in lower costs and high-quality services. At the conclusion of the process, each school system has an opportunity to enter in to their own, individual contract for services to fit their needs. SWACO manages the bidding process and does the legwork to make it as simple as possible for school systems to participate in the process at no cost to them. The current program limitations include garnering enough interested bidders and maintaining outreach, education, and participation with custodial departments and staff.

Figure H-2.1 School Recycling Champions

The School Recycling Champion program was created to assist schools in Franklin County in beginning or improving their recycling programs. The program is designed to help schools build a successful, sustainable, comprehensive program that can serve as a model to other schools within or outside of the school district. As such, funding under this program is currently limited to one elementary, intermediate and/or middle, and high school in each school district within SWACO's jurisdiction.

School Recycling Champion Results:

- 2018 – 2019 SY – 3 pilot schools (Columbus School for Girls, Columbus City Schools, South-Western City Schools)
- 2019 - 2020 SY – 1 school (Westerville City Schools). 3 approved schools put on hold due to pandemic
- 2020 – 2021 SY – 6 approved applicants placed on hold due to pandemic
- 2021 – 2022 SY – 5 schools (Immaculate Conception, Columbus City Schools, 2 Reynoldsburg City Schools, South-Western City Schools)
- Total Spent 2018-2022: $14,500

The drop-off recycling program provides and services drop-off recycling dumpsters at 16 school districts. These were placed to help meet the access goal as well increase recycling by capturing 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. SWACO recognizes the benefit of involvement and interaction with local universities in diversion efforts.

The Ohio State University has a declared goal of 90% diversion of waste from landfills by 2025, plus has a zero-waste stadium. In FY 21, the Ohio State University main campus reached a diversion rate of 35.8%. Numbers from this year were impacted by closures and venue limitations due to COVID-19. Roughly 100 tons of landfill (12 tons), recycling (38 tons), and compost waste (49 tons) were sent to a non-designated facility for disposal or sorting through the SWACO Waiver.

One of the larger material categories for potential diversion is food waste. Commercial and institutional generators may be producing larger quantities of food waste.

Limited outlets for processing and handling food waste currently exist within Franklin County, 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. One such organization, Food Rescue US – Columbus Chapter, diverted over 2.8 million pounds (1400 tons) from the landfill in 2021 from the network of Columbus-based entities such as the Columbus Recreation and Parks Department's GoLunch Program, DNO Produce, and Gourmet Fresh Catering, according to the City of Columbus Local Food Action Plan – 2021 Annual Report.

In 2020, SWACO received a $60,000 federal grant from the US Environmental Protection Agency to study food waste behaviors and the positive benefits that education programs can have. SWACO's *Save More Than Food* campaign provides resources and education on ways to reduce food waste and organics. SWACO has conducted market research interviews with food waste generating businesses across Central Ohio to characterize waste across different businesses, current practices to reduce surplus food, and research strategies to prevent food and improve diversion. This outreach will help inform future programs, technical assistance, and resources SWACO develops to assist commercial, institutional, and other entities to reduce food waste. This research commenced towards the end of 2021 and has continued through 2022.

SWACO has developed an extensive list of grade and high school programming in order to minimize food waste in a school environment including:

- Food Waste from Farm to Fork
- Points for Prevention
- SWACO Landfill Tour
- Zero Waste Lunch Poster
- Student Pre- and Post- engagement assessments
- Building a Share Table in Central Ohio K-12 Schools

Results have been positive and impactful:

- Hilliard City Schools cafeteria composting diverted 146,000lbs of compostable material from 14 elementary and two 6th-grade schools.
- Columbus City Schools school garden programs composted 55,660 lbs. of cafeteria food scraps
- New Albany High School diverted 186.8 lbs. of cafeteria food waste to onsite composting (1 day per week cafeteria collection)

SWACO has identified that the relationship with schools offers an ideal opportunity to implement increased food waste diversion activities. To accommodate the growth and scale food waste educational activities in classrooms throughout the District, additional staffing capacity may be necessary. SWACO expects to support schools with implementing readily available food waste reduction activities such as share tables and food donation and will coordinate with schools to evaluate school consortium contracting for collection of food waste when infrastructure and services are available.

Event Venues

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.

SWACO will work with stadiums, concert halls, and other event venues to review and enhance waste reduction efforts. In 2021, work was conducted with the Columbus Crew and Ohio EPA to develop a grant application for the Crew to establish recycling within their new stadium. The grant was approved in 2021 and SWACO has continued to work with the Crew to implement their new program. Additional engagement with Nationwide Arena (Columbus Blue Jackets) was conducted in 2021 and continue to work with them into 2022.

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.

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. SWACO and the City of Columbus worked with The Recycling Partnership to pilot a multifamily recycling program at nearly 10,000 housing units in Columbus and across Franklin County. Results from the pilot will be used to create an industry-leading sustainable multifamily recycling program to provide greater access to easy and convenient recycling opportunities. Learnings from the pilot and a new Franklin County Multifamily Housing Recycling Program will be available in late 2022.

Due to the COVID-19 pandemic, many operations saw a change in disposal tonnage. Commercial entities saw a decrease in the amount of waste being generated, both landfill and recyclable material. SWACO was also impacted by significant supply chain disruptions. With the delivery of COVID-19 vaccines, SWACO assisted local hospitals with diverting EPS cooler packaging, made of low-density polystyrene, used for vaccine storage from the landfill. Phoenix Recycling, Eco Development, and Fabricated Packaging materials accepted the EPS packaging and collaborated with hospitals to develop collection strategies.

F. CONCLUSIONS AND OPPORTUNITIES

Commercial

- Cardboard & paper processing capacity available in the region.
- Bagged and mixed recycling processing has limitations & hauling.
- There is demand for technical assistance for recycling system set-up and education/training employees.
- There is desire for funding and incentives for establishing programs.
- There is desire from businesses to recycle harder to recycle materials.
- Policies and requirements should be explored.
- High demand for composting services but limited competition and capacity to offer services.

- Proven case studies for effective food waste reduction and diversion.
- Increased technical support and financial incentives will be needed to assist Franklin County food business diversion activities.
- Composting infrastructure will be needed to increase competition and capacity.
- Additional food rescue/donation education and infrastructure could help to feed residents in need.
- Providing technical support to food businesses to establish best practices for food waste reduction and diversion.
- Incentivizing and piloting start-up of composting services, providing containers for collection of organics, food donation, and training for employees.
- Focus on businesses who want to compost.

Institutional

- Program participants receive recycling containers, signage, and education assistance from SWACO.
- Programs are dependent on teachers and school-level administrators, and it is challenging to scale up from pilot schools to district-wide implementation.
- Recycling School Consortium Program benefits include better pricing structures by combining the waste volumes, improved quality of services, inclusion of new or expanded recycling services.
- SWACO continuing to develop partnerships with hospitals, higher education and providing technical; assistance with consortiums.

H-3 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 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.

A. INDUSTRY BASE

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

Table H-3.1 Largest Manufacturers by Columbus Region: Employees

Company	Full-time Employees
Honda	11,077
Whirlpool Corporation	2,519
Abbott Nutrition	2,055
TS Tech	1,789
Worthington Industries	1,625
Ariel Corporation	1,500
Stanley Electric	1,385
Scotts Miracle-Grow	1,100
Hikma	1,026
Owens Corning	1,000
Vertiv	921
Lancaster Colony Corporation	892
Mars Petcare	836
Mettler-Toledo	800
The Oneida Group	731
Cardington Yutaka Technologies	725
Jefferson Industries Corporation	648
Anheuser-Busch InBev	640
Anomatic Corporation	632
Ashland	595

Note that Honda and Whirlpool do not have facilities in Frankin County but employ a large number of Franklin County residents. 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. An in-depth survey of this sector in the future could help to establish a baseline of the existing conditions as well as identify needs and opportunities. Below is a summary of publicly available sustainability goals and/or reports, as it relates to materials management, set by entities included in Table H-3.1.

Honda

- Reduce Waste-to-Landfill
  - Leftover steel used in other production applications.
  - Sand left over from aluminum and ferrous operations used for local gardens.
  - Cafeterias working to reduce waste.
- More Equals Less
  - Carbon extracted from coke is used to produce iron for casting steel engine and drivetrain parts.

Source: ohio.honda.com/our-planet

Whirlpool Corporation

- 90% of sites achieved Zero Waste to Landfill Gold or Platinum in 2021

Source: whirlpoolcorp.com/environmental-sustainability/

ScottsMiracle-Gro

- Product Stewardship & Safety
    - Optimize Packaging Design: Redesign selected packaging to reduce the amount of plastic material used.
        - Milestone target: 3% reduction
    - Source Packaging Sustainably: Triple the amount of recycled content in plastic packaging.
        - Milestone target: 15% recycled content
    - Support Packaging Recycling: Increase consumer brand packaging that can be recycled or reused.
        - Milestone target: 50% achievement

Source: scottsmiraclegro.com/responsibility/environmental-social-and-governance/

- Waste
    - In 2021, prioritized setting goals and identifying further opportunities where ScottsMiracle-Gro can contribute to reducing waste.
    - Plants have implemented range of recycling initiatives, including wooden pallets, cardboard and plastic.
    - Developing new food waste composting program at headquarters in Marysville, Ohio.

Source: scottsmiraclegro.com/responsibility/environmental-social-and-governance/operating-sustainably/

Hikma

- Recycling at Columbus, US
    - Boosted recycling efforts to include labels, folding cartons, and other material. Previously, printed materials only went to incineration. Working with a shredding supplier, 29 tons of waste are recycled rather than incinerated.

Source: hikma.com/media/3210/sr2021-may-12-2022-final.pdf

Owens Corning

- 2030 Goals for Waste Management
    1. Reduce was intensity by 50% by improving efficiency and process design.
    2. Repurpose or recycle remaining waste, also recycling waste back into current processes wherever possible.
    3. Zero Waste-to-Landfill

Source: owenscorning.com/en-us/corporate/sustainability/docs/2022/2021-Owens-Corning-Sustainability-Report.pdf

Vertiv

- Vertiv Facilities
    - Recycling programs in place at its manufacturing and office facilities for used oil, electronic waste, used batteries, waste metals includes copper, aluminum, steel, waste cardboard, and used lamps.

Source: vertiv.com/en-us/about/sustainability/

Lancaster Colony Corporation

- Waste Disposed
    - In 2020, 83,909 tons of non-hazardous waste disposed in landfill.
- Waste Intensity
    - In 2020, waste intensity was 63 tons per million dollars in sales.

Source: lancastercolony.com/sustainability/environment/default.aspx

Mars

- 100% reusable, recyclable, or compostable packaging.
- Reduce use of new "virgin" plastic by 25%.
- Incorporate 30% recycled content into plastic packaging.

Source: mars.com/sustainability-plan/healthy-planet/sustainable-packaging

Mettler Toledo

- In 2018, waste intensity was 1.8 tons per million dollars in sales.
- Goals
    - By 2025, reduce waste intensity by 2025
    - By 2025, achieve zero waste to landfill.
    - Use more recyclable materials for packaging.
    - Educate and support customers for end-of-life products.

Source: youtu.be/AdKtNT0WYZ4

Anheuser-Busch

- By 2025, 100% of packaging will be made from majority recycled content or returnable.

Source: anheuser-busch.com/community/initiative/circular-packaging/

The following programs targeting the industrial (and commercial) sector are expected to be implemented:

- SWACO does not have a dedicated program exclusively for industrial entities, but business resources (Tookit, Waste Assessment tool, etc.) are available and applicable to industrial entities. Our Business Recycling Administrator is also available to provide technical assistance to these entities.
- Create and deliver a targeted outreach campaign. The outreach campaign will be aimed at manufacturing industries in Franklin County and will inform them of relevant resources and services
- 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
- 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
- Convene meetings and special events, such as business roundtables, conferences, and symposiums, which cover topics including best practice, contract assistance, and information on local/national trends.
- Providing additional educational collateral materials describing programs suitable to this audience.
- Develop and promote case studies on examples of best practice in waste reduction and diversion specific to this sector

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

B. CONCLUSIONS AND OPPORTUNITIES

Industrial

- Target food in headquarters/manufactures.
- Best practices and benchmarking should be identified when considering future programming options.

- The impact of past programs targeted towards this sector is difficult to determine. Thoughtful measurement of future programs will be important.

H-4 Residential/Commercial Waste Composition Analysis

This evaluation looks at the wastes that typically make up the largest portions of the residential/commercial waste stream and determines whether SWACO currently has or should have programs to address those wastes.

A. COMPOSITION

Generation Composition

Municipal solid waste (MSW) also referred to as residential/commercial waste includes common items thrown away after being used such as packaging, food, grass clippings, sofas, computers, tires, and refrigerators. According to US EPA's "Advancing Sustainable Materials Management: Facts and Figures 2018" wastes that typically make up the largest portions of the residential/commercial waste stream are paper and cardboard (23.1%), food (21.6%), plastics (12.2%), and yard trimmings (12.1%).

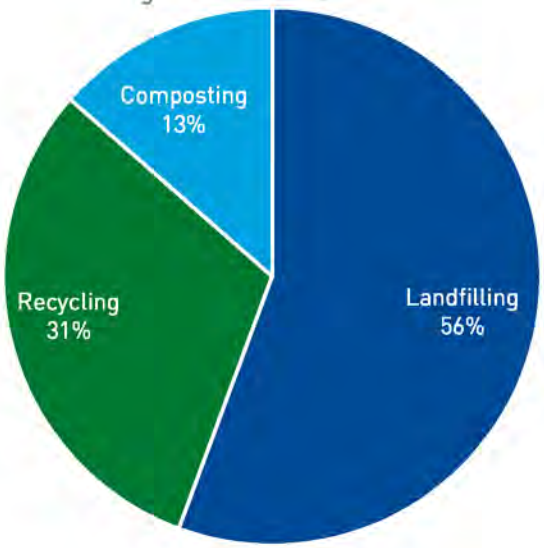
Table H-4.1 US EPA 2018 Estimated Residential/Commercial Waste Generated by Material for 2021

Material	US EPA % Generated	Estimated SWACO Tons Generated
Paper and Cardboard	23%	512,857
Food	22%	479,555
Yard Trimmings	12%	268,639
Plastics	12%	270,860
Rubber, Leather, Textiles	9%	197,594
Metals	9%	195,374
Wood	6%	137,650
Glass	4%	93,247
Other	3%	64,385
Total	100%	2,220,160

Source(s) of Information:
Generation from Appendix G
US EPA. Advancing Sustainable Materials Management: 2018 Fact Sheet. December 2020.

SWACO's residential and commercial sectors generated 2,156,126 tons of municipal solid waste in 2021. Applying the US EPA waste generation estimates to the SWMD's waste generation gives an approximation of materials generated. As shown in Table H-4.1 paper, food, and yard trimmings are the three largest categories of materials generated. This evaluation looks at the availability of and need for programs to recover these three largest categories.

Figure H-4.1 Managed Residential/Commercial Waste 2021



Disposal Composition

Table H-4.2 US EPA 2018 vs. SWACO 2019 Estimated Waste Disposal by Material

Material	US EPA % Generated	Estimated Tons Disposed	SWACO % Disposed	Estimated Tons Disposed
Paper and Cardboard	23.1%	284,901	28.3%	349,035
Food	21.6%	266,401	14.7%	181,301
Yard Trimmings	12.1%	149,234	3.7%	45,634
Plastics	12.2%	150,467	16.6%	204,734
Rubber, Leather, Textiles	8.9%	109,767	4.0%	49,334
Metals	8.8%	108,534	3.3%	40,700
Wood	6.2%	76,467	8.4%	103,600
Glass	4.2%	51,800	3.0%	37,000
Other	2.9%	35,767	18.0%	222,001
Total	100%	1,233,339	100%	1,233,339

Source(s) of Information:
Generation from Appendix G
US EPA. Advancing Sustainable Materials Management: 2018 Fact Sheet. December 2020.
Solid Waste Authority of Central Ohio Waste Characterization Study, Final Report. November 2019.

The SWMD disposed 1,233,339 tons of municipal solid waste in 2021. About 48,163 tons were recycled and composted, which leaves a large amount of material still being landfilled. Applying the US EPA waste disposal estimates to the SWMD's waste landfilled gives an approximation of materials landfilled. As shown in Table H.4.2 food waste, plastics, paper and paperboard are the three largest categories of materials being landfilled.

In 2018, SWACO contracted with Cascadia Consulting Group (Cascadia) and Mid-Atlantic Solid Waste (MSW)to perform a four-season 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.

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-4.3 Estimated Waste Composition based SWACO 2019 Estimated Waste and Annual District Report

Material	Estimated Tons Disposed	Estimated Tons Recycled	Estimated Tons Generation
Paper and Cardboard	349,035	330,829	679,863
Food	181,301	28,303	209,604
Yard Trimmings	45,634	305,741	351,374
Plastics	204,734	6,782	211,517
Rubber, Leather, Textiles	49,334	3,202	52,535
Metals	40,700	162,724	203,424
Wood	103,600	60,408	164,009
Glass	37,000	30,112	67,112
Other	222,001	58,721	280,722
Total	1,233,339	986,821	2,220,160

Source(s) of Information:
Generation from Appendix E and Appendix G
Solid Waste Authority of Central Ohio Waste Characterization Study, Final Report. November 2019.

Table H-4.4 Community Reported Disposal Data

Community	Tons of MSW Landfilled in 2021	Tons of MSW Landfilled in 2014
Columbus	214,448	295,731
Grove City and Jackson Township	15,818	14,129
Dublin	11,461	10,912
Upper Arlington	10,512	6,459
Westerville	10,180	10,007
Hilliard	9,969	8,456
Gahanna	9,832	9,278
Reynoldsburg	9,385	9,511
Whitehall	5,873	5,884
Madison Township	5,041	4,120
Jefferson Township	4,756	2,871
Worthington	4,172	unreported
Bexley	4,034	4,009
New Albany	3,703	2,818
Franklin Township	3,448	3,046
Canal Winchester	3,015	unreported
Blendon Township	2,671	unreported
Obetz	2,632	unreported
Grandview Heights/Marble Cliff	2,531	2,218
Pleasant Township	2,405	2,194
Groveport	2,345	3,686
Hamilton Township	1,746	unreported
Clinton	1,586	1,306
Norwich Township	1,459	1,394
Perry Township	1,271	206
Plain Township	1,236	unreported
Mifflin	1,098	
Sharon Township	832	unreported
Minerva Park	765	126
Washington Township	713	unreported
Harrisburg	651	unreported
Truro Township	425	465
Riverlea Village	233	207
Urbancrest	221	173
Lockbourne	110	unreported
Brice	55	34
Brown	unreported	unreported
Prairie	unreported	unreported
Valleyview	unreported	229
TOTAL	350,631	399,469

A Waste Characterization Study done in 2019 revealed a 24% non-recoverable material rate (Figure 4.2). This information assisted with SWACO's goal to reach 75% diversion by 2032. With understanding the composition of materials in the disposal stream, SWACO can work with waste generators such as residents to focus on recoverable materials. The top 3 materials entering the county landfill included- Food Scraps (15%), Corrugated Cardboard (10%) and other Compostable Fiber (8%), all of which can either be recovered through existing programs or have the potential to be captured and diverted if new programs and services are established. The results of the Waste Characterization Study reinforce the need to improve diversion from the landfill through reuse, recycling and composting and demonstrate the economic value of these wasted materials.

SWACO has a goal to increase Franklin County's diversion from 50% to 75% by 2032 and the study identified food waste and cardboard as presenting the greatest opportunities to increase Franklin County's diversion. SWACO has a variety of programs and activities that are designed to help our local businesses and communities reduce waste and divert more material, including our Recycle Right, Make a Difference educational campaign, community consortiums, a recycling cart initiative, business programming, as well as our economic development efforts.

Figure 4.2 Waste Characterization Study in 2019 Composition

B. SPECIFIC WASTE STREAMS

The following analyses focus on three waste streams: yard waste, food waste, and fiber/paper. Table 4.5 shows the historical tonnages and percent of the recovered materials.

Table 4.5 Historical Tonnages for Yard Waste, Food Waste, and Fiber/Paper

Year	Yard Waste	% of Recovered Materials	Food Waste	% of Recovered Materials	Paper	% of Recovered Materials	Carboard	% of Recovered Materials	Total Recovered Materials
2017	276,298	30%	21,227	2%	85,330	9%	240,940	26%	929,355
2018	329,935	36%	22,597	2%	79,981	9%	254,977	27%	980,891
2019	297,528	32%	21,447	2%	89,142	10%	261,687	28%	959,541
2020	268,659	29%	29,628	3%	71,124	8%	269,520	29%	974,339
2021	305,741	33%	28,303	3%	36,686	4%	294,143	32%	983,172
Average	295,632	32%	24,640	3%	72,452	8%	264,254	28%	965,460

Yard Waste

Composting and technologies (anaerobic digesters, in-vessel technologies, etc.) are available options to manage yard trimmings. These management methods can be small, medium, or large scale. Two service providers, Waste Management and Rumpke, provide yard waste collection service to customers. Hauling trucks do not have truck scales so individual hauler quantities are not available. Compost facilities (all classes) track material volumes delivered and report to Ohio EPA, which is how SWACO tracks composting activities.

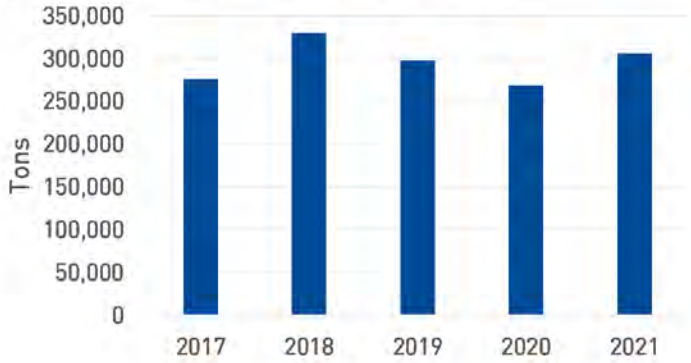
Based on the waste composition study minimal yard waste, 3.7%, is landfilled. The yard waste management program is successful in diverting large tonnages of yard waste. In 2021, reports indicated 87% of yard waste was diverted. Figure H-4.2 shows an increasing trend in yard waste composting.

Yard Waste Analysis

Historically yard waste averages 32 percent of the recycled stream. Historical tonnages recycled are shown in Table H-4.5.

Composting can be small, medium, or large scale. A diversely developed system reinforces sustainability and environmental stewardship. SWACO works with municipalities, consortiums, and contracts to assist in providing opportunities for yard waste management.

Figure H-4.3 Historical Yard Waste Recycling



Food Waste

There are several available options to manage food waste including waste minimization, donation, composting, and technologies (anaerobic digesters, in-vessel technologies, etc.). Waste minimization is a management method is including in programing at SWACO and teaching about making better use of food through storage, portion size, recipe suggestions for leftovers can help prevent food waste.

Based on the waste composition study, approximately 14.7% of waste landfilled is food waste and as demonstrated earlier in Table H-4.2, an estimated 181,301 tons of food waste is being landfilled. Food waste is a diversion opportunity.

Adequate infrastructure for collecting and processing food waste has increased over the past 5 years and continues to be 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.

Food waste rescue and food waste minimization efforts are underway within the county. 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 county. Most food waste composting in 2021 was directed to out-of-district facilities.

Food Waste Analysis

Historically food waste recycling has been inconsistent as shown in Table H-4.2.

Food waste is a difficult stream to manage in large part because of the collection methods and monitoring of composting and technology approaches.

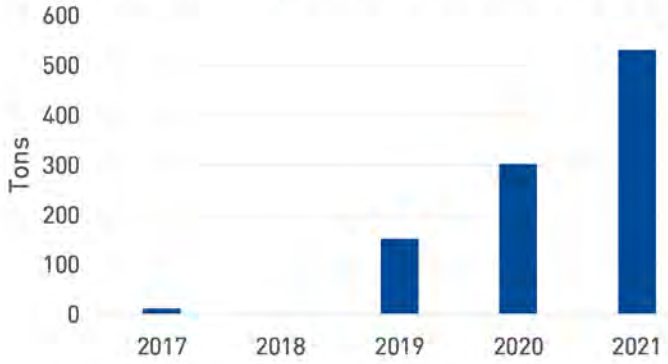
There has been an increase of interest in food waste composting and collection.

The following community have food waste collection opportunities in 2021:

- Bexley - Curbside Collection
- Dublin - Drop-off Collection
- Grandview Heights - Drop-off Collection
- Grove City - Drop-off Collection
- Hilliard - Drop-off Collection
- Westerville - Drop-off Collection
- Worthington - Drop-off Collection
- Upper Arlington - Drop-off Collection

Figure H-4.3 Historical Food Waste Recycling

Figure H-4.4 Historical Community Food Waste Recycling



Fiber/Paper

Waste minimization and recycling are two available options to manage paper waste. Waste minimization stops the waste before it starts, and recycling is separating the materials from the waste stream and using them as virgin feedstock to manufacture new products. Waste minimization is a management method that is also promoted by SWACO. Recycling of paper comes down to available collection methods. Paper is one of the common suites of materials accepted by all service providers through curbside and drop-off collections. Single-family households have curbside recycling arranged by an incorporated political jurisdiction or consortium. Multi-family and commercial businesses have opportunities, but the extent of the service outreach is unknown. It is assumed many gaps exist in collection services to these entities. Drop-off recycling containers are available throughout Franklin County.

Based on the waste composition study, fiber materials are the largest material category landfilled. Approximately 28%, or 349,035 tons of this waste stream is landfilled. The 2021 ADR reported a total of 330,829 tons of fibers diverted. At this time, almost 50% of the fiber waste stream is being diverted from the landfill.

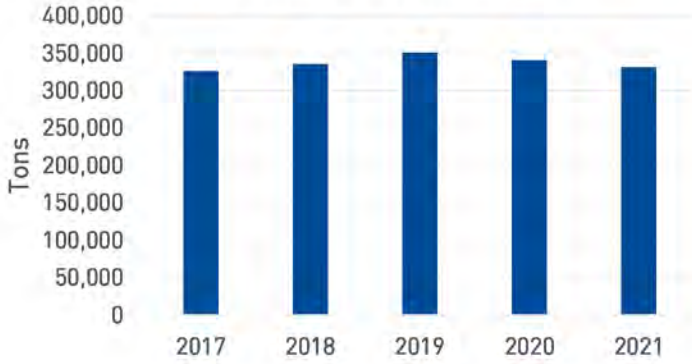
Fibers have a significant recovery potential. Fibers are accepted from the residential sector through curbside and drop-off programs. Recovery programs and opportunities of fibers in the commercial sector are largely unknown. Education institutions participating in the school consortiums or that are 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.

Fiber Analysis

Paper, including cardboard, is one of the largest streams of materials reported as recycled historically as shown in Table H-4.5. On average, paper accounts for approximately 36 percent of the recycled stream.

There are available programs, however the SWOT analysis exercise identified opportunities in the commercial sector with economics identified as a barrier.

Figure H-4.5 Historical Fiber Waste Recycling



C. CONCLUSIONS AND OPPORTUNITIES

- The majority of residential/commercial waste is landfilled, 55.6%.
- City of Columbus was responsible for 61.2% of residential municipal solid waste landfilled.
- Forty-nine percent of fibers are being diverted, yet it is still the largest material stream landfilled.
- According to the waste composition study in 2019, 28.3% of material landfilled is fibers. Estimated calculations demonstrate the commercial sector is landfilling the majority.
- The waste composition study reports 3.7% of material landfilled is yard waste. The yard waste program successfully diverts 80% of estimated yard waste from the landfill through composting.
- SWACO has sponsored the implementation of food waste collection programs and is working toward further expanding their role with a compost facility during the first 5 years of the planning period.
- Support end market development through grants, business assistance, or other programs.
- SWACO provides educational materials and technical assistance for yard, food, and fiber waste.

H-5 Economic Incentive Analysis

Economic incentives encourage increased participation in recycling programs. In accordance with Goal 7 of the 2020 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 additional 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.

Economic incentives in the form of grants and technical assistance can reduce the cost of recycling, increase tonnage, and develop local end markets for recycled-content products.

A. COMMUNITY CONSORTIUMS

SWACO encourages communities to join a community solid waste and recycling consortiums by providing contract assistance through the "Consortium" program. Consortiums increase negotiating power to reduce costs for solid waste, recycling, and yard waste collection services, and communities that have joined consortiums are able to save money on contracted waste hauler costs. The consortiums also increase the number of communities providing non-subscription curbside service as well as contribute to the annual increase in curbside tonnages. Although no additional non-subscription programs were added in 2021, 36 out of the 41 communities in SWACO's jurisdiction do now have non-subscription (automatic) curbside recycling provided to single family homes. Of the 36 communities with non-subscription curbside, 24 participate in a consortium.

In 2021, SWACO assisted Consortiums #1 and #3 with re-bidding their curbside trash, recycling, and yard waste contracts (16 communities) and helped Worthington in re-bidding their contract. The District continues to provide input to the remaining communities that do not have non-subscription (automatic) curbside recycling programs and encourages all communities to join a consortium.

Table H-5.1 Solid Waste Consortiums with SWACO Assistance

Consortium #1	Consortium #2	Consortium #3
Bexley	Groveport	Grove City
Dublin	Whitehall	Jackson Twp
Gahanna	Village of Brice	Village of Urbancrest
New Albany	Clinton Twp	Norwich Twp
Reynoldsburg	Madison Twp	Village of Lockbourne
Westerville	Pleasant Twp	Hamilton
Blendon Twp	Truro Twp	
Mifflin Twp	Sharon Twp	
Plain Twp		
Washington Twp		
56,720 HH	14,775 HH	19,916 HH

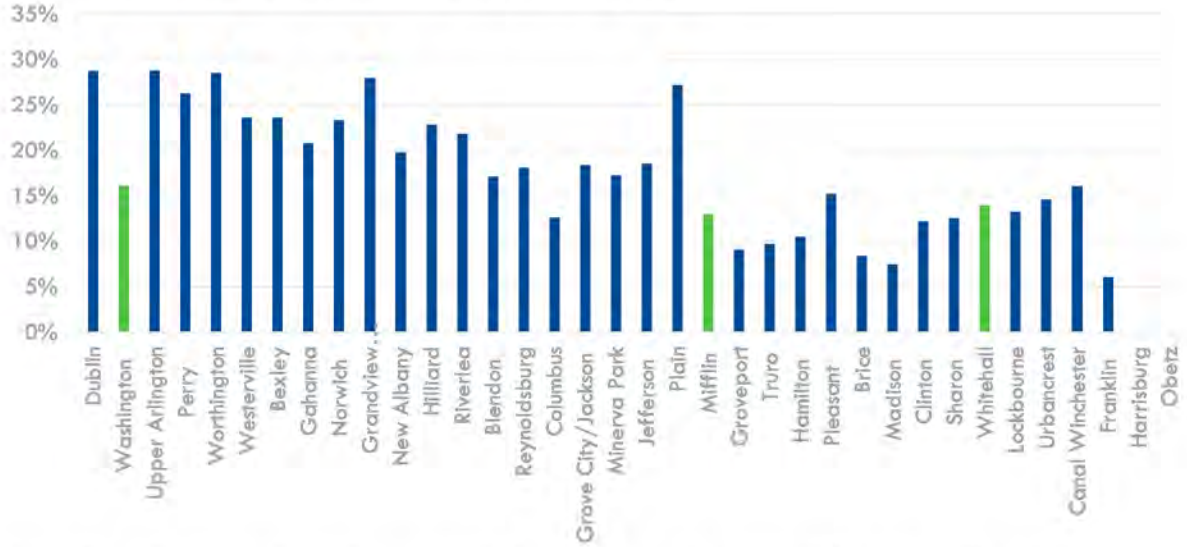
B. PAY-AS-YOU-THROW (PAYT)

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, like other household utilities (electricity, water, gas). PAYT can been effective in reducing waste and increasing recycling while seeing significant savings in tipping fees depending on the community.

The household's variable billing can be calculated based on container weight, size of container and service frequency, or in some cases, size of container and service frequency using Radio Frequency Identification (RFID).

Non-PAYT communities often charge a flat rate, regardless of their waste generation. Three communities in the District currently participate in volume-based disposal: Mifflin Township, Washington Township, and Whitehall. These communities are currently not reporting the highest diversion rates in the District. Figure H-5.1 shows the comparison to communities with reporting recycling and trash tonnage. SWACO promotes volume-based disposal programs through the community consortium process.

Figure H.5.1 Community Diversion Rate for Recycling/ in 2021



Notes: The calculation above does not include yard waste. Recycling / (Recycling + Trash)

C. GRANTS AND TECHNICAL ASSISTANCE

Community Waste Reduction Grant

These grant funds can be provided to public entities in Franklin County. Grant funds can be used for waste reduction or diversion infrastructure projects, capital improvements, and other activities.

Awarded fifteen (15) Community Waste Reduction Grants in 2021 totaling $215,055 to the

- City of Columbus
- City of Dublin
- City of Grandview
- City of Grove City
- City of Hilliard
- City of Westerville
- Columbus City Schools
- Community Development for All People
- COSI
- Form 5 Prosthetics
- Habitat for Humanity
- Ohio Dept. of Rehab & Correction -Franklin Medical Center
- Ohio Health

- Ohio Wildlife Ctr
- Franklinton Farms

For reference year 2021, two (2) grant recipients had to cancel their projects due to staffing capacity and the pandemic. An additional four (4) recipients requested to extend the timeline of their projects into 2022. Of the thirteen (13) grant awards, six (6) focused on recycling, two (2) focused on recycling and food waste composting, one (1) focused on education, one (1) focused on the development of a community zero waste plan, and three (3) community food waste drop-off locations were approved.

Event Waste Reduction Grant

These grant funds support large-scale public event organizers that establish best practices for reducing waste, increasing recycling and composting and generate public awareness about waste reduction activities.

Awarded three (3) Event Waste Reduction Grants in 2021 with a total of $7,314 was reimbursed to these organizations:

- Our Lady of Perpetual Help Church summer parish festival for event recycling and food waste collection
- What? Music and Art Festival for even recycling
- Final Third Foundation for event recycling

Market Development Programs

SWACO may consult with businesses to enhance markets for recyclable materials and conduct market studies to understand economics of reuse and recycling in the District. SWACO regularly interacts with businesses within the jurisdiction that either generate recyclable materials, process recyclable materials, or use recyclable materials. One consistent topic of conversation is to understand any challenges or barriers that they are facing to recycle or use more recycled materials, and the status of recycling markets for the materials that they generate or use.

In 2021, SWACO continued to develop a Green Business Park on property that is owned by SWACO that is designed to attract and support business that can create value out of waste materials either through processing materials or using recycled materials as a feedstock for their business.

This Green Economy Business Park is a key part of the District's vision to build a more economically and environmentally sustainable future for our region. The Business Park is proposed to be built on 350 acres of SWACO-owned land. The goal is to bring together the recycled materials supply chain through research, technology and advanced manufacturing through a capital investment of $350 million to $500 million. SWACO models and projections show that the site, once developed, could create between 2,000 and 3,500 manufacturing jobs, producing between $1.6 million and $4.2 million in local tax revenues for the local community. If approved, the Green Economy Business Park will cement the Central Ohio region as an economic leader in the emerging market for recyclables and sustainable manufacturing. SWACO will conduct market studies to understand the economics of reuse and recycling and research how increased diversion will drive new business.

Special Project Funding

SWACO occasionally assists with projects that may include but not limited to research, infrastructure improvements, or pilot projects. In 2021 SWACO worked closely with the Columbus Crew and Ohio EPA to develop an Ohio EPA grant application for recycling equipment and containers in the new downtown Columbus Crew Stadium. The Crew was awarded the grant by Ohio EPA in 2021.

Recycled-Content Support Assistance

SWACO may assist with funding that will foster businesses that manufacture and market recycled-content products. In 2021, SWACO collaborated with Rev1 Ventures to help identify and support innovative businesses, technologies, and start-ups in the waste field. SWACO and Rev1 provided technical assistance and guidance to 8 local start-up and/or social enterprises on how to grow or expand their business.

Economic Incentives and Other

SWACO may assist financial support to help the commercial sector recover materials. In 2021, SWACO piloted a new financial assistance program currently branded as the Business Recycling Champion program. It is designed to help businesses with purchasing indoor containers, indoor and outdoor signage, and service start-up support. In order to be eligible for the incentives a business has to develop a business recycling plan using a Toolkit provided by SWACO. Full implementation of the program will occur in 2022.

D. 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.

E. CONCLUSIONS AND OPPORTUNITIES

- Twenty four 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 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 including contract assistance, economic grants, and education support. There are opportunities for SWACO to improve and enhance each of these components.
- Conducting a brief survey of the business sectors to ascertain their awareness of SWMD programs.

H-6 Restricted and Difficult to Manage Waste Streams Analysis

A. OVERVIEW

This section includes the analysis of Restricted and Difficult to Manage Waste streams as per Goal 6 of the 2020 State Plan which requires SWMDs to provide management strategies - at a minimum - to include:

- Scrap tires
- Yard waste
- Lead-acid batteries
- Household hazardous waste
- Obsolete/end-of-life electronic devices

Note that yard waste management is discussed in:

- Appendix H7 – Diversion Analysis
- Appendix H10 – Regional Analysis

In this section, SWACO provides details on other non-traditional recovery programs including:

- Political Sign Recycling
- Food Waste
- Education
- Appliances
- Pharmaceuticals
- Construction and Demolition Waste
- Mattresses, Textiles, and Carpet

B. INCREASING DIVERSION

SWACO diverted more than half (51%) of the waste stream materials from landfilling in 2021. However, 76% of the landfilled materials had the potential to be reused, recycled, or composted. Creative and aggressive programming to divert landfilled materials will be needed to reach SWACO's goal of 75% diversion by 2032. SWACO currently collaborates with dozens of partners committed to helping reach this goal including partners that assist in developing strategies and alternative management options to address Goal 6 materials. SWACO was successful in diverting significant tonnages of Goal 6 materials but will focus on strategies to further improve diversion and control costs.

Although not required by the state to collect all 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 funded programs. All of the management opportunities expect that the onus is on the residents and the producer of the waste stream to be responsible and properly manage these wastes:

C. SCRAP TIRE MANAGEMENT

The Solid Waste Authority of Central Ohio (SWACO) recognized that an effective scrap tire management strategy would not only contribute to waste minimization but could also provide economic value to the region. To assess the value of scrap tires as a resource, SWACO contracted in 2018 with DSM Environmental Services to do a thorough analysis of Ohio's scrap tire waste stream. DSM identified that Ohio generates approximately 12 million used tires per year, with an estimated 1.3 million tires from Franklin County.

Ohio's Scrap Tire Law gives Ohio EPA the authority to regulate scrap tires until they are properly disposed, recycled into another product or converted into energy. Through Ohio EPA's registration program, tire dealers and repair shops know they are dealing with legitimate scrap tire businesses rather than illegal dumpers when disposing of used tires.

Scrap Tires as A Resource

Collection outlets for used tires are multiple and include retailers, municipal drop-offs, SWACO facilities and mobile drop-offs. After collection, most tires are transported for processing. Liberty Tire's Recycling facility in Grove City processes the majority of the tires collected in the region to produce crumb rubber products for use in a wide variety of molded products including welcome mats, railroad ties, acoustical underlays, and portable speed bumps. In addition to molded rubber products and coatings, crumb rubber enhances surfaces such as highways and horse tracks, as well as civil engineering applications substituting for stone aggregates. The Grove City facility produces civil engineering products for use in landfill construction in Ohio. The facility provides 36 jobs and processes roughly 5.5 million tires annually. In nearby Shelby County Boomerang Rubber, Inc. (Botkin's, Ohio) manufactures truck bed mats, splash guards and agricultural mats from post-industrial uncured rubber scrap. They also grind their own cured flash (trim) and add it back into the product feedstock (see www.boomerangrubber.com). Through these two examples, a partial closed loop for tires can be found in Ohio. SWACO has established multiple strategies for managing scrap tires.

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.

Drop-Off at Franklin County Sanitary Landfill 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. 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. Volumes have stabilized since 2019 although the impact from COVID is yet to be evaluated.

Figure H-6.1 Historical Scrap Tire Tons

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.

D. LEAD-ACID BATTERIES

U.S. EPA gathers and analyzes data from generators and recyclers of all nonferrous metals. In 2018, the estimated amount of recycled battery lead was about 99 percent primarily because lead-acid batteries have a high recycling value and states like Ohio have laws requiring retailer take-back.

The management of lead-acid batteries is critical not only to recovery this valuable resource but to also prevent soil and ground water contamination. Each lead acid battery contains up to 18 pounds of lead and about one gallon of corrosive lead-contaminated sulfuric acid. Lead acid batteries can be found in automobiles, boats, snowmobiles, motorcycles, golf carts, all-terrain vehicles, wheelchairs, and other large transportation vehicles. They may also be used in non-automotive situations such as backup power in basement sump-pumps or as uninterruptible power supplies for computers or other critical equipment.

In addition, most of today's plug-in and hybrid electric vehicles and energy storage (on and off-grid) use Li-ion batteries to either store power for the hybrid system or to power the electric motors.

Figure H-6.1 Historical Lead Acid Battery Tons

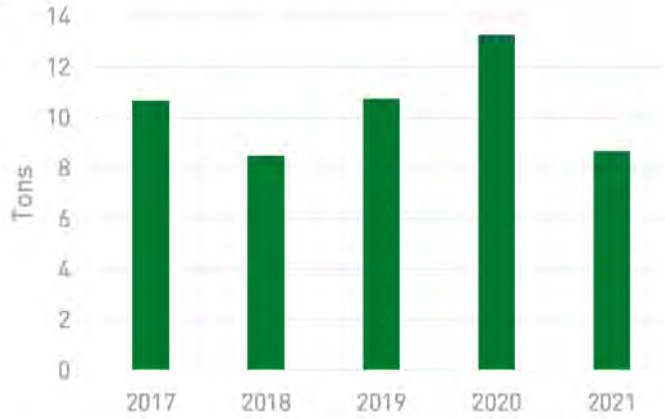


Table 6.2 Industrial Survey Results – Reference Year

Material	Quantity (tons)
Food	109,576
Glass	2,158
Ferrous Metals	182,702
Non-Ferrous Metals	16,997
Corrugated Cardboard	8,221
All Other Paper	5,739
Plastics	738
Textiles	-
Wood	226
Rubber	-
Commingled Recyclables (Mixed)	65
Ash	-
Non-Excluded Foundry Sand	-
Flue Gas Disulfurization	-
Other (Aggregated)	0.1
Total	326,421

Lead-acid batteries have a strong recycling infrastructure in the district even though data collected is limited. In 2021, a total of 8.67 tons were collected from the SWACO Permanent HHW facility and another 3.2 tons were recovered from mobile events. 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 OEPA and the commercial businesses to collect battery recycling data. Despite the regulatory limitation, SWACO annually surveys Franklin County scrap yards, and processors known to accept nonferrous materials including lead batteries. As detailed in Appendix F – Industrial Recovery Table F-1, there were 16,997 tons of nonferrous metal recovered in the base year of which the majority is assumed to be from lead acid batteries.

Lead acid battery tonnages collected at the SWACO Permanent HHW site are steady although the impact on collection due to COVID is yet to be identified.

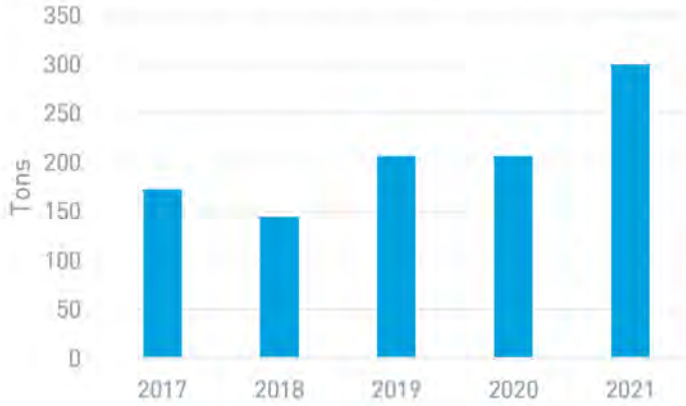
E. HOUSEHOLD HAZARDOUS WASTE

SWACO has several strategies for managing HHW which primarily include such materials as paint, solvents, automobile products, DIY products, household batteries, gasoline, turpentine, spray paint, fertilizer, pool chemicals, household cleaners, antifreeze, and other reactive and corrosive liquids and solids. Collection events are the typical management strategy for these materials.

In order to keep HHW out of the landfill, SWACO contracts Environmental Enterprises Incorporated (EEI) to offer free residential recycling for HHW at the full time Household Hazardous Waste Center located on 8th Ave. in Columbus. SWACO also partners with local communities to offer several mobile collection events each year. Collection events are advertised and promoted through social media, paid advertising, newsletters, and the SWACO website. Information regarding take-back options for certain materials is available on the website.

Business hazardous waste is regulated differently by the OEPA than household hazardous waste. Therefore, businesses are not eligible to participate in HHW collection programs and should contact EEI, Inc. directly at 614-294-1300 to inquire about the cost to collect or accept their hazardous materials.

Figure H-6.2 Historical Permanent HHW Drop Off Tons



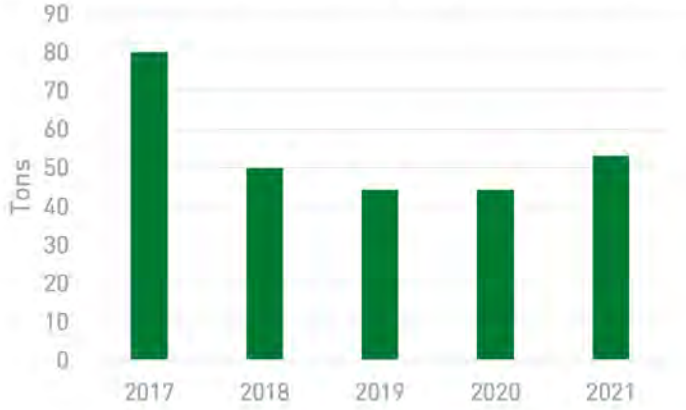
Latex and water-based paints are not considered hazardous and are not accepted as part of SWACO's free HHW program. Paint hardeners, available at most hardware stores, or kitty litter may be added to left over latex paint in order to solidify the unused product and the dried paint may be disposed with normal household rubbish.

Permanent HHW Drop Off Collection Site

The Permanent HHW Collection site remains a successful program and experienced record participation in 2021.

Notes: Tonnages shown include all materials accepted including lead-acid batteries.

Figure H-6.3 Historical Mobile HHW Drop Off Collection Tons



Mobile HHW Drop Off Collection Sites

SWACO sponsored three collection events in 2021 that were successful at diverting a total 3.2 tons of batteries and 53 tons of mixed HHW.

The Mobile HHW Collections have also been successful and the total of the three 2021 events was an increase over the previous three years.

HHW Education

Improperly disposed HHW poses a serious environmental risk. For instance, motor oil or chemicals poured down a storm drain can pollute large bodies of water including drinking water sources. Informing the public of

these dangers and providing outlets for proper disposal or recycling is a priority. Education on using less-harmful ingredients and more environmentally friendly products is included in educational materials available on the webpage and social media outlets.

F. POLITICAL SIGNS

SWACO started a political sign collection program in 2017. All paper and plastic signs and accompanying metal stands are accepted free of charge at the Athletic Complex in Columbus on the Saturday after the election. An average of 1.75 tons of political sign material was collected for 2020 and 2021. Candidates are encouraged to pick up their own campaign signs for future reuse.

Grove City held its first collection event in 2022 and Bexley, Upper Arlington, and New Albany are also partnering with SWACO for future events. For residents who can't make any of the central Ohio events, SWACO instructs households that paper signs can go in the curbside recycling, plastic ones go to film recyclers, and the metal stands themselves go to scrap metal recyclers.

G. APPLIANCES

Appliances, denoted in Appendix E as white goods, have a strong recycling infrastructure in the district. 17,975 tons were recovered in 2021. Residents primarily rely on curbside collection arranged with their local hauler. Frequently, local 'pickers will remove scrap metal from the curb prior to the weekly collection by the hauler. Many appliance stores will also remove old appliances for recycling or reuse at no charge upon delivery of a new unit. Scrap metal has experienced record value, and the markets remain strong. SWACO promotes reuse and recycling of appliances with a list of 14 locations that sill accept appliances: https://recycleright.org/recycling-locations/?category=28. Appliances are also accepted at the FCSL for a charge of $20 for each appliance. However, the Freon must be removed from the appliance by a licensed Freon recycler. The appliance must be tagged by the recycler as "Freon free."

H. 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 and retailers that offer take-back programs. SWACO established a contract for the collection and processing of e-waste and all 41 political subdivisions, schools within the County, and Franklin County agencies can use this program to divert e-waste by hosting mobile collections and/or using permanent drop-off facilities.

Figure H-6.4 Historical Electronic Drop Off Collection Tons

NOTE: 2019 E Waste tonnages are estimates based on historical data.

In 2021, SWACO partnered with TCL (television manufacturer) and MRM (a TV recycling trade organization) to sponsor an E-waste collection event that resulted in 6,500 lbs. of e-waste being collected. SWACO also partnered with the County Auditor's office on an e-waste collection event that resulted in 6,543 lbs. of e-waste collected.

I. 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 for processing food waste in the District. Processors diverting District food waste are located out-of-district and only one in-district facility is permitted to handle food waste but does not accept food waste.

SWACO conducted an analysis of the local waste stream and identified that nearly 1 million pounds of food waste arrived at the SWACO landfill each day, making food the single largest source of landfill material. Landfilling this material alone cost Franklin County residents and businesses just over 6 million dollars, but the total economic loss is even greater. Based on existing models, the systemic economic loss from food waste generated in Franklin County is estimated at $106 million (http://www.fao.org/policy-support/policy-themes/food-loss-food-waste/en/. Much of this waste food could have been prevented or perhaps rescued and donated.

As a result of this analysis, SWACO determined that food waste recovery would be an important sustainable program to meet the aggressive diversion goals.

SWACO formed the Central Ohio Food Waste Initiative (COFWI) in September 2018 to bring together a diverse set of organizations to help build a unified approach towards reducing food waste and leveraging it to benefit our region. COFWI takes a wholistic approach to combat food waste by creating solutions geared towards food waste prevention, rescuing and redistributing edible food, and recycling food through composting and other technologies.

A report was created as the result of a series of collaborative engagements with partnering organizations who see value in reducing food waste in the central Ohio region. Based on those engagements and the input gathered, the document serves as a pathway of opportunities and solutions for the regional community to coalesce and pursue. The intent of the report was to provide a living framework for collaboratively advancing the front lines on food waste, which requires a flexible and adaptive approach. With collective input, several projects have been identified to initiate immediately and are outlined within the full report available at www.COFWI.org.

Collective Impact of Food Waste Recovery

Central Ohio is fortunate to have established agencies, organizations, and businesses involved in food waste prevention, rescue and recycling. During 2017, a collaborative stakeholder process led to the development of the Local Food Action Plan (LFAP) which was initiated by Franklin County and the City of Columbus. One of the four

core topic areas in the LFAP was reducing food waste. The Ohio State University has also launched the Food Waste Collaborative to help advance solutions within the University and hosts an annual summit on the issue. SWACO, Mid-Ohio Foodbank and the local chapter of Food Rescue U.S.A worked together to redirect potentially wasted edible food to those who need it. Other local collaborators who have been engaged on the issue include retailers, such as Kroger, who recently committed to zero waste goals and food waste reduction strategies, as well as the Ohio Restaurant Association and Ohio Grocers Association, to name a few.

National Focus on Food Waste

Central Ohio's food waste diversion efforts are receiving national support. In 2020, SWACO received a $60,000 federal grant from the US Environmental Protection Agency to study food waste behaviors and the positive benefits that education programs like SMTF can have. Under the grant, SWACO partnered with the City of Upper Arlington and The Ohio State University in 2021 to study the behaviors of hundreds of households before and after receiving SMTF educational materials.

In addition, The Foodservice Packaging Institute (FPI), with several partners, have released the CompostAble Chicago report, which evaluated how venues utilizing compostable foodservice items are, under the right operating conditions, expected to achieve successful consumer-facing front of house (FOH) composting programs. The study evaluated four foodservice venues in the Chicago area — a full-service restaurant, a museum quick-serve café, a school cafeteria and a university quick-serve café — collecting data on both operating conditions within the venues, and the nature of their waste streams.

RRS developed the venue evaluation framework and the waste characterization methodology. RRS also led the waste sorts that quantified components of all waste streams including the amount of food scraps and material types across thirty-five other categories and mapped the results against each venue's operational attributes and best practices for FOH composting with the use of compostables.

The study's findings suggest venues that adopt compostable foodservice packaging, under favorable operating conditions, should be expected to collect more food scraps in FOH compost streams. In addition, contamination levels were also seen to trend lower with stronger adoption of compostable items. In addition to researching the relationship between compostable foodservice packaging and food scrap recovery, RRS also developed through the project a Guide Methodology for project teams to follow for continued, expanded research. The published materials also include a guide and template for collecting data from additional venues to grow the body of data for analysis. The full Compostable Chicago report including the methodology guide and data collection template is available at www.recyclefsp.org/compostable-chicago-form.

Education - Preventing Wasted Food at Home Webinar

SWACO established an active outreach program that focuses on food waste minimization. Webinars focus on the family chef or those that are just branching into the world of home cooking. SWACO's Save More Than Food campaign has the tools and information to help families stretch their food as far as possible to help save money, as well as conserve resources this holiday season including strategies for preventing food waste such as planning, reinventing leftovers, and properly storing foods, and compost scraps.

SAVE MORE THAN FOOD
MAKE A DIFFERENCE

Public-Private Partnerships

SWACO is researching an opportunity for a public-private partnership for a composting facility and collection program to serve our region and to cut in half the amount of food waste entering our landfill.

The benefits of a regional curbside composting program are vast: Not only would this program reduce the materials going into our landfills, but it would also transform waste into a valuable, nutrient-rich soil amendment that can be used by communities, businesses and residents. Through the right partnerships, SWACO can help Central Ohio's food waste become part of the circular economy. For residents without access to a convenient drop off program, SWACO partners with the Franklin County Soil and Water Conservation District to provide home composting systems at a reduced cost to residents who also participate in composting training.

The Central Ohio Food Waste Initiative, a collaborative group focused on food waste prevention and led by SWACO, has a goal to cut Central Ohio's food waste in half by 2030. The Initiative created the Food Waste Action Plan which outlined 20 strategies to help reduce waste, one of which was the development of Save More Than Food (SMTF), a public education campaign geared toward changing the way people think about the food on their dinner plates. SMTF was launched in the third quarter of 2020 and is anchored by an immersive consumer focused website which has provided information and resources to thousands of residents. The initiative is supported by a robust marketing campaign featuring messages about how to reduce waste and its many benefits. These messages have been seen millions of times in Central Ohio.

Results are evident. Today, 29% of residents report composting food or yard waste either at home or at one of our community's 10 drop off programs. Results and initiatives are described on the website: SaveMoreThanFood.org. SWACO provided funding to the OSU

Another example of best practices is the Wexner Medical Center that piloted the use of Winnow, a technology that uses AI to evaluate food waste and provide feedback on methods for reducing the amount of food waste generated. This pilot should be complete in 2022

Other food waste management Considerations

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 in-district $29.65/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 soil additive; 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 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 of 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 residents 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.

J. PHARMACEUTICALS

SWACO determined that the best option for safely disposing of prescription medicines is at a prescription drug drop-off site. A common practice of flushing unused medication leaves trace chemicals in wastewater which can add to toxicity and increase treatment expenses. Consequently, SWACO partners with 11 communities in Franklin County to make permanent collection sites available year-round. Each site accepts dry prescription pills with no questions asked. IDEA National Prescription Drug Take-Back Days.

Figure H-6.5 Historical Pharmaceutical Collection Tons

NOTE: 2019 Pharmaceutical tonnages are estimates based on historical data.

SWACO also supports the DEA National Prescription Drug Take-Back Days, held in April and October each year, by partnering with different communities in Franklin County to host collection events. These events give people a safe, convenient and responsible way to dispose of unused or expired prescription drugs. SWACO was a partner in the 2021 National Prescription Drug Take Back Day and was successful at collecting 5,299 lbs. at the spring and 2.6 tons the fall event.

Education

SWACO provides Franklin County residents with information about and access to safe disposal options for expired, unused or unwanted prescription drugs. Proper disposal is important because it helps protect the

environment, our groundwater, our loved ones and our communities. Education material emphasized the importance of disposing of unneeded medicine to prevent harm to children, pets, teens and adults if accidentally ingested or misused. Educational materials also include the link to the DEA website where a list by zip code of 24 locations that will accept unneeded pharmaceuticals.

Opioids

SWACO is a member of the Ohio Opioid Education Alliance, a group of more than 40 corporate, association and community partners working together to combat the opioid epidemic. Through its "Don't Live in Denial, Ohio" campaign, the alliance is educating people about the dangers of opioid abuse and trying to prevent the next generation of kids from abusing prescription opioids.

As an organization responsible for our community's waste management, SWACO is committed to spreading the message about the safe disposal of prescription opioids and other medicines. Holding on to leftover medicine is a dangerous practice, as nearly half of the young people who inject heroin start by misusing prescription pain medicine. The website Don't Live in Denial, Ohio offers details on avoiding harm from illicit opioids.

K. 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.

L. YARD WASTE

The waste composition study reports 3.7% of material landfilled is yard waste. The yard waste program successfully diverts 80% of estimated yard waste from the landfill through composting.

SWACO dedicates extensive resources to managing yard waste including these strategies:

- Reduction strategies,
- Donation programs,
- Backyard composting
- Yard waste drop off
- Seasonal yard waste collection programs
- Other new technologies and polices which are described in Appendix H10.

Other references to yard waste management can be found in these plan appendices:

- H7 Diversion Analysis
- H10 Regional Analysis
- H11 Data Collection

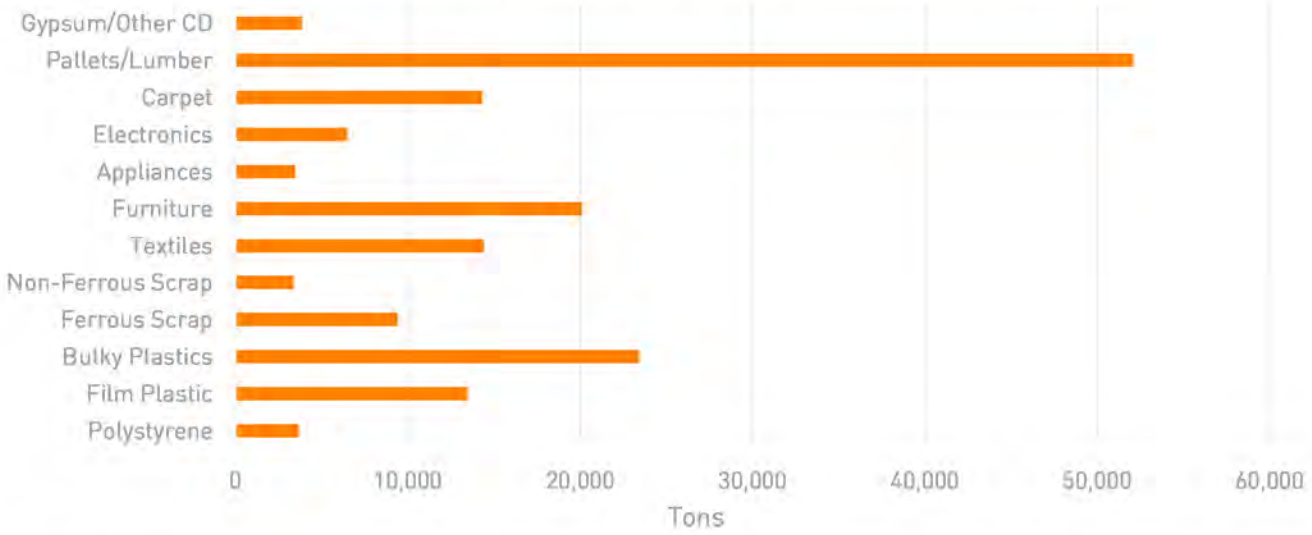
Composting and technologies (anaerobic digesters, in-vessel technologies, etc.) are available options to manage yard trimmings. These management methods can be small, medium, or large scale. Two service providers, Waste Management and Rumpke, provide yard waste collection service to customers. Hauling trucks do not have truck scales so individual hauler quantities are not available. Compost facilities (all classes) track material volumes delivered and report to Ohio EPA, which is how SWACO tracks composting activities.

M. OTHER DIFFICULT TO MANAGE WASTES

There is a lengthy list (e.g., textiles, mattresses, carpet, 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 residents and businesses can recycle and dispose of various difficult to manage waste stream items. Recently, additional research has begun to identify similar new services offered in the District. Making this formation more accessible is a near term goal.

Industrial, commercial, and institutional (ICI) stakeholders are another key target for difficult to manage waste. SWACO staff presented statistics in August 2022 regarding estimated tonnages of ICI waste streams that have recovery potential.

Figure H-6.6 Institutional, Commercial, and Industrial (ICI) Hard-to-Recycle Landfill Composition



The findings and recommendations stated that there is a growing demand for solutions from all business sectors, at all levels of current recycling activity including hard to recycle waste. SWACO also identified that expanded programming would be needed to offer technical assistance, financial support, connecting to processors, and other material specific connections.

N. CONCLUSION AND OPPORTUNITIES

- Exploring HHW best practices will be a priority for SWACO during this planning period. As stated in our 2021 Impact Report, SWACO is committed to researching best sustainable practices for management HHW including cost reduction, cradle to grave costs of materials, and the effectiveness of waste minimization programs through an analysis started in 2021. An emphasis on expanded education including nontoxic alternatives will also be explored
- Education on retailer take-back programs and available outlets has increased and an updated list of opportunities will need to be continually refreshed.
- Yard waste management practices appear to be successful and pervasive. SWACO will continue to monitor volumes and will consider some of the options as outlined in Appendices H7, H10, and H11.
- SWACO collaborates with many organizations to promote scrap tire collection drives which have been successful. SWACO's emphasis will be on the further market development of scrap tires to complete the circular economy of this valuable resource. the Franklin County Community

- Yard Waste and Food Waste Compost facility reporting will need to be enhanced in order to determine processing capacity and to track recovered tonnages. SWACO will also further investigate a processing strategy that is cost effective compared to the relatively inexpensive option of landfilling.
- Best practices for difficult to manage waste will also be a continuing effort. Expanded education on collection, reuse, and exchange programs will need to be an emphasis and an analysis of the cost per ton of recovery for these targeted materials.
- Construction and Demolition recycling is an opportunity that the district could consider exploring. Before any analysis can occur, enhanced reporting would be needed since this is a largely unregulated industry. Although OEPA monitors CDD disposal sites, there is little reporting that occurs to the district on the sources, material varieties, or current reuse practices.
- SWACO has seen continued success in collection programs throughout the spectrum of difficult to manage waste. As enhanced programming is considered, SWACO will be sensitive to the cost/ton for collection and processing this material and will closely examine the value of education to reuse and minimize these waste streams at the source.

H-7 Diversion Analysis

Waste diversion is defined as the amount of waste recycled and the amount of waste diverted from entering the waste stream through source reduction activities. Waste diversion activities include waste minimization (also called source reduction), reuse, recycling, and composting. The diversion analysis takes a look at the diversion programs, infrastructure, rate and trends, and materials.

A. DIVERSION PROGRAMS AND INFRASTRUCTURE

Table H-7.1 provides an abbreviated list of the diversion programs and infrastructure within the District for year 2021.

Table H-7.1 Diversion Programs and Infrastructure

	Waste Minimization	Reuse	Recycle	Compost
Generating Sector	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.)
Collection	Not applicable	Self-haul, Not- For-Profit hauling, Charity hauling, or not applicable because in-house reuse	Decentralized: Public, Private, and Self-haul Curbside Drop-off Scrap Recyclers Private hauler collection routes	Decentralized: Public and Self- haul
Diversion Programs	Limited Education	Limited Education	Education 2 MRF's private owned/operated	YW Management Community collection (21 programs)
Outlet Opportunity/ Facilities	Not applicable	Various reuse centers and thrift stores throughout Franklin County	Contracted HHW outlets Various scrap yards	9 registered Class IV 1 registered Class II 1 registered Class III

As shown in Table H-7.1, 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 36 non-subscription curbside programs and 64 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 32 collection programs and 13 privately owned compost facilities, three of which is a Class II are permitted to process or accept food waste that can accept food waste and animal waste. 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-7.2, identifies the infrastructure outlet/facility available to manage/recycle the listed materials.

Table H-7.2. Material recycling at available infrastructure outlets within the District:

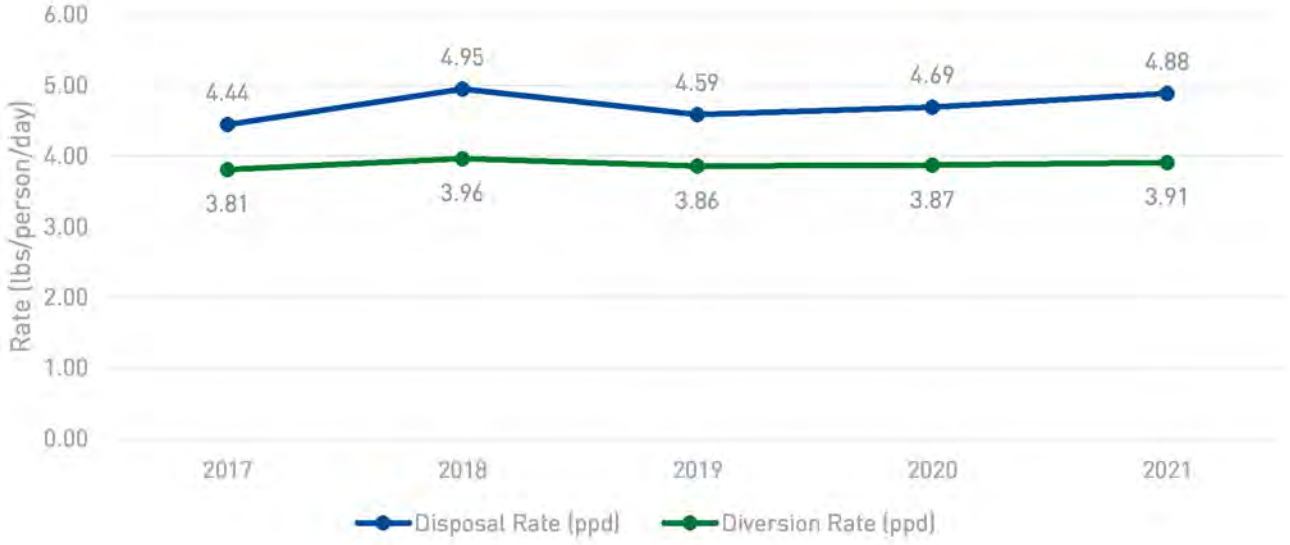
Material	Curbside	Drop-Off	ReUse Centers and	Retailer Take Back	Scrap Recyclers	MRF	HHW Facility and Events	Compost Facilities	Landfill	Transfer Facilities	C&D Landfill	Other[1]
White Goods (appliances)				X	X							
Batteries (household)				X			X					
Batteries (lead- acid)				X	X		X					
Glass	X	X			X	X						
Tins Cans	X	X			X	X						
Aluminum Cans	X	X			X	X						
Cardboard	X	X			X	X						
Other Paper	X	X			X	X						
Plastic #1-7	X	X			X	X						
Tires				X					X	X		X
Textiles			X									
Used oil				X			X					
Wood				X	X							
Electronics			X	X	X							
Paint							X					
HHW[2]							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: [1]Other: Tires accepted at Community Clean-up Events; food waste is diverted through recovery practices; pharmaceuticals collected at partner locations.
[2]See SWACO website for active list of materials accepted.

B. DISPOSAL RATE AND TRENDS

Population is increasing and the per capita waste generation and disposal rate are decreasing as shown in Figure H-7.1.

Figure H-7.1. Historical Residential/Commercial Disposal Rate and Diversion Rate (pounds/person/day)



The greatest contributing factor of the decreasing per capita generation rate is decreased disposal. The disposal and diversion rates have remained fairly stable in the past 5 years. Figure H-7.2 depicts the historical waste diversion, disposal and generation rates.

Figure H-7.2. Residential/Commercial Disposal and Diversion Tonnage, and Population

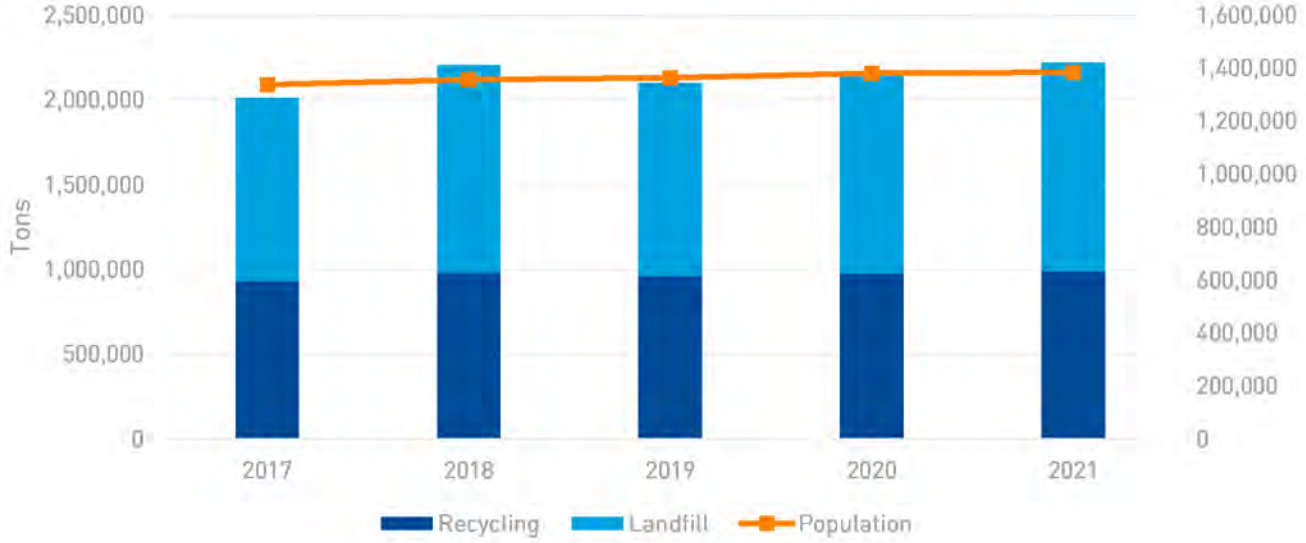


Figure H-7.3 shows the diversion achieved over the past seven years in comparison to the State residential/commercial waste diversion goal, represented by the flat line. The higher peaks in 2017 and 2019 are attributed to increased volumes reported by material recovery facilities. SWACO has consistently demonstrated a residential/commercial diversion rate at or above the state goal.

Figure H-7.3. Residential/Commercial Diversion Rate

One factor of a flat diversion may be a result of the changing waste stream. Evolving materials such as ascetics/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-weighing."

Fortuitously, materials such as #5 plastics (polypropylene), paper cups, aluminum cups, and plastic cups have recently been added to the acceptable recyclable materials by the local MRF. Additional materials added to the acceptable recycling list requires a lot of education to inform the public.

Some programs have achieved more diversion, and some have not as shown in Table H-7.3. Additional program analysis is provided in various sections of this Appendix.

Table H-7.3. Historical Program Recycling

Year	2017	2018	2019	2020	2021
Curbside Recycling Services	66,879	66,828	63,605	68,388	65,796
Drop-off Recycling Locations	7,088	6,017	5,373	6,007	6,085
Composting Facilities	287,684	332,207	327,210	242,052	277,200
Other Food and Yard Waste Management Activities	5,174	5,569	4,523	9,578	23,076
Ohio EPA Scrap Tire Data	17,834	11,005	23,579	21,542	23,510
SWACO Data - SWACO HHW Mobile Collections	80	50	44	44	53
SWACO Data - SWACO Permanent HHW Collections	172	144	206	206	299
Commercial Survey	28,625	48,825	18,183	78,529	350
Data from Other Recycling Facilities	471,262	458,313	471,174	508,065	530,926
Ohio EPA Commercial Retail Data	44,556	51,934	45,644	39,930	55,878
Total Tons	929,355	980,891	959,541	974,339	983,172

C. DIVERTED MATERIALS

Figure H-7.4 shows the residential/commercial diversion achieved by material in the reference year. The greatest diverted material is yard waste.

Figure H-7.4. Residential/Commercial Diversion by Material

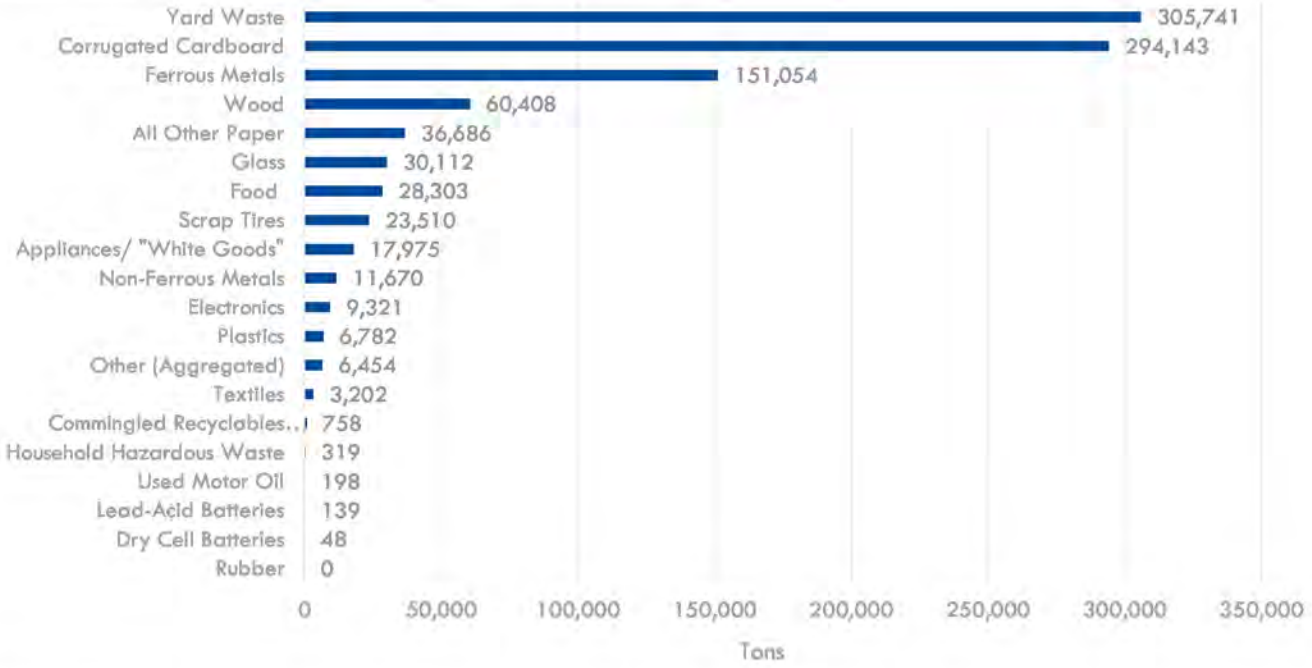


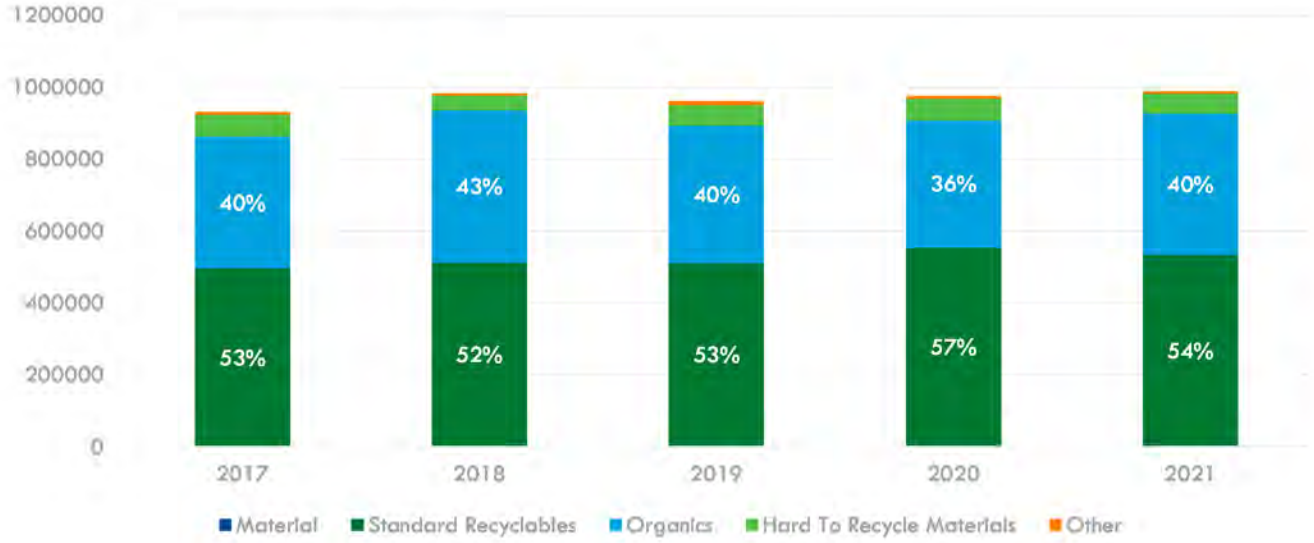
Table H-7.4 shows the historical residential/commercial diversion in tons.

Table H-7.4. Residential/Commercial Historical Waste Diversion

Material	2017	2018	2019	2020	2021
Standard Recyclables					
Ferrous metals	112,861	110,177	101,946	150,162	151,054
Non-ferrous metals	12,658	6,856	14,485	14,671	11,670
Cardboard	240,940	254,977	261,687	269,520	294,143
Other paper	85,330	79,981	89,142	71,124	36,686
Plastic	13,104	20,899	9,564	8,319	6,782
Glass	28,696	30,266	31,384	34,928	30,112
Commingled	272	7,419	648	5,273	758
Subtotal	493,862	510,575	508,856	553,998	531,204
Organics					
Yard waste	276,298	329934.9	297,528	268658.9	305,741
Food	21,227	22,597	21,447	29,628	28,303
Wood	70,087	70,970	63,698	54,043	60,408
Subtotal	367,612	423,502	382,673	352,329	394,452
Hard To Recycle Materials					
White goods	32,955	18027	15,162	19488.18	17,975
Batteries (dry cell & lead acid)	191	186	93	184	187
HHW	621	628	216	215	319
Rubber	0	0	0	0	0
Tires	17,834	11,005	23,579	21,544	23,510
Textiles	2,838	3,176	3,546	3,557	3,202
Used oil	354	629	274	202	198
Electronics	5,772	6,346	13,938	14,604	9,321
Subtotal	60,565	39,996	56,808	59,795	54,711
Other	7,316	6,818	11,464	8,218	6,454
TOTAL TONS	929,355	980,891	959,801	974339.4	986,821

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 54% (531,204 tons), organics make up 40% (394,452 tons), hard-to-recycle make up 6% (54,711 tons) and other make-up less than 1% (6,454 tons) of the waste diverted from the landfill.

Figure H-7.5. Waste Diversion 2017 - 2021



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.

D. POTENTIAL DIVERSION

SWACO issued a 2021 Impact Report that highlighted new recycling achievements and future plans for continuous improvements. https://swacoimpactreport.org/ In this report, SWACO commits to continuing sustainable expansion of recycling infrastructure within Central Ohio. To fully meet SWACO's desires for greater waste diversion, significant additional capacity for recyclables and organics processing is required. As Franklin County's population continues to grow and the economy remains strong, the amount of waste being generated both on a community and individual level has increased. Materials being sent to the landfill have remained relatively the same materials being reused, recycled or composted continues to increase. Franklin County's diversion rate (50%) now exceeds the national average (34%).

Characterization Study

SWACO contracted with RRS in 2019 to conduct a Waste Characterization Study of landfilled materials. The study found that a high percentage of landfill materials could have been diverted. More than three-fourths (76%) of landfilled materials had the potential to be reused, recycled or composted and together have an estimated value of $21 million. The study also found that of those discarded materials, the items presenting the biggest opportunities for increasing diversion were food scraps and corrugated cardboard. Future plans will focus on providing assured processing capacity for the Top 10 items most commonly found in Franklin County's waste stream:

- Food Scraps – 15%
- Corrugated Cardboard – 10%

- Other Compostable Items & Fiber – 9%
- Magazines, Newspaper, Office and other paper – 8%
- Bulky & Durable Goods - 7%
- Construction & Demolition - 4%
- Plastic Containers - 4%
- Wood Pallets – 4%
- Textiles – 4 %
- Yard Waste - 3%

The SWACO 2021 Impact Report identifies the strategic direction needed to achieve a 75% diversion goal in Central Ohio. Processing Capacity Strategic Goals were identified that would be critical to achieving the 75% diversion goals within the next ten years. Processing Capacity goals include:

Table H-7.5. Opportunities for Diversion based on the 2019 Waste Characterization Study

Material	Estimated Percent	Estimate Tons based on 2021 Disposal
Corrugated Cardboard	10.4%	102,629
Magazines, Newspaper, Office & Printing Paper, Mail	3.4%	33,552
Other Recyclable Paper	3.3%	32,565
Aseptic Containers & Gable Top Cartons	0.1%	987
Polycoated Fiber-based Food Service Packaging	0.9%	8,881
Non-polycoated Fiber-based Food Service Packaging	0.7%	6,908
Other Compostable Fiber	7.7%	75,985
Other Fiber – Non-Recyclable/Non-Compostable	1.8%	17,763
#1 PET Bottles & Jugs	1.6%	15,789
Other #1 PET Packaging	0.3%	2,960
#2 HDPE Natural Bottles & Jugs	0.3%	2,960
#2 HDPE Colored Bottles & Jugs	0.4%	3,947
Other #2 HDPE Packaging	0.1%	987
#5 PP Packaging	0.9%	8,881
Other Rigid Plastic Containers, Packaging & Small Product	0.7%	6,908
Expanded Polystyrene	0.6%	5,921
Plastic Bags – Recyclable	0.1%	987
Other Plastic Film – Recyclable	1.3%	12,829
Other Plastic Film – Non-Recyclable	5.6%	55,262
Plastic Durable & Bulky Items	3.1%	30,591
Other Plastic – Non-Recyclable	1.6%	15,789
Glass Bottles & Jars	1.8%	17,763
Other Glass & Ceramics	1.2%	11,842
Steel Cans	0.6%	5,921
Aluminum Cans	0.6%	5,921
Aerosol Containers	0.1%	987
Ferrous Metal Scrap	1.2%	11,842
Non-Ferrous Metal Scrap	0.5%	4,934
Other Metal – Non-Recyclable	0.3%	2,960
Edible Food Scraps – Non-Packaged	6.5%	64,143
Edible Food Scraps – Packaged	4.1%	40,460
Non-Edible Food Scraps	4.1%	40,460
Yard Waste	3.1%	30,591
Other Compostable Organics	0.6%	5,921
Animal By-Products	1.8%	17,763

Material	Estimated Percent	Estimate Tons based on 2021 Disposal
Other Organics – Non-Compostable	0.8%	7,895
Clothing	1.8%	17,763
Non-Clothing Textiles	1.5%	14,802
Shoes, Leather, Rubber	0.7%	6,908
Mattresses & Box Springs	0.4%	3,947
Large Appliances	0.1%	987
Small Appliances	0.6%	5,921
Furniture	2.1%	20,723
Tires	0.2%	1,974
CRT TVs & Monitors	0.2%	1,974
Other Electronics	0.7%	6,908
Latex & Water-based Paint	0.0%	0
Oil-based Paint	0.0%	0
Medical Products	0.5%	4,934
Pesticides & Herbicides	0.0%	0
Batteries	0.0%	0
Other Potentially Harmful Wastes	0.1%	987
Carpet	2.2%	21,710
Carpet Padding	0.5%	4,934
Wood Lumber & Products, Treated	3.2%	31,578
Wood Lumber, Untreated	1.1%	10,855
Wood Pallets	4.1%	40,460
Paving, Concrete, Bricks, & Other Aggregates	0.2%	1,974
Asphalt Shingles	0.0%	0
Gypsum	0.3%	2,960
Other Construction & Demolition Materials	1.9%	18,750
Disposable Diapers	2.2%	21,710
Fines	2.2%	21,710
Other Materials	1.0%	9,868
Total	100%	986,821

The column labeled "Estimate Tons based on 2021 Disposal" demonstrates potentially available material for diversion. Since the materials are disposed there is room for program improvement to capitalize on the diversion. Table H-7.5 is an estimate exercise demonstrating diversion opportunity based on the 2019 Waste Characterization Study. 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.

E. CONCLUSIONS AND OPPORTUNITIES

- Education and outreach related to address waste minimization and reuse are limited compared to recycle right campaigns.
- 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 focus on specific material recovery and/or divert more materials.

H-8 Special Program Needs Analysis

Ohio Revised Code Section 3734.57(G) gives Districts the authority to fund activities that are not related to achieving the goals of the state solid waste management plan, or other programs that are not addressed in either the state plan or law.

Areas of "Special Program Needs" programming currently provided by SWACO include:

- Environmental Crimes Task Force
- Grants to Communities
- Innovation and Market Development Activities
- Special Projects and Reports

This analysis evaluates the performance and status of these activities and programs and the value to the district.

A. ENVIRONMENTAL CRIMES TASK FORCE

Established in 1992, the Environmental Crimes Task Force of Central Ohio (ECTF) is Franklin County's multi-governmental, anti-littering and illegal dumping collaborative designed to identify, investigate, and prosecute environmental crimes. In addition, The ECTF works to educate Franklin County residents about how to dispose of their unwanted materials properly and safely – such as hazardous materials, yard waste and construction debris.

The ECTF allows residents to report environmental crimes and support the successful investigation and prosecution of those crimes. SWACO established a 2022 ECTF Contracts, Services, and Supplies budget of $246,504 which is a 4% increase over 2021. The contracts are with the Franklin County Sheriff's Dept. and Prosecutor's Office.

SWACO uses a full time Litter Marshall that works to minimize the negative aesthetic, economic, safety and health impacts of litter and illegal dumping by involving citizens in the reporting of illegal activity, and to clean littered areas and illegal dump sites. In addition, SWACO funds and manages the Environmental Crimes Task Force "itsacrime.org" web site and 24-hour hotline. During 2020, 715 complaints were reported through this system.

The program has been successful at accomplishing the established goals of protecting the environmental health and safety of central Ohio residents and communities. As an example, in 2016, 22 defendants were convicted of 31 environmental crimes obtained by ECTF partners and were collectively sentenced to serve more than 13 years in jail, pay more than $50,000 in fines and restitution, and provide hundreds of hours of community service removing trash from roadways, waterways and parks.

B. GRANTS TO COMMUNITIES

In 2021, SWACO awarded $215,055 in Waste Reduction Grants to 15 communities and awarded $7,314 in Event Waste Reduction Grants to 3 organizations as outlined in Appendix H-5. These 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.

C. INNOVATION AND MARKET DEVELOPMENT

Innovation

The goal of this budget is to assist SWACO in searching for new ways to manage our region's waste stream including emphasis on market and business development. In October 2020, SWACO partnered with Rev1 Ventures, a Columbus seed-funding venture capital firm, to identify innovative solutions to Central Ohio's waste stream issues. Working with Rev1, SWACO has identified three focus areas to try and reduce the amount of food and other waste entering our landfill:

1. Prevention: Reduction methods that reduce the volume of waste
2. Rescue: Redistributing excess food to feed people
3. Recycling: Repurposing food waste as energy, agricultural supplements, and other products.

SWACO and Rev1 have provided technical assistance and guidance to 8 local start-ups and/or social enterprises on how to grow or expand their business. SWACO's partnership with Rev1 allows us to connect with these startups, entrepreneurs and other innovators who can reduce or divert food and other waste through reuse, recycling, and composting. In 2022, the partnership with Rev1 will evolve to focus on textile waste and recycling and will help SWACO continue to build a more sustainable future for our region as it grows.

SWACO Economic Development Strategy

The market for recycled materials is strong, and so are the Central Ohio industries that rely on recycled materials. The Central Ohio region is home to nearly 400 businesses that employ some 5,000 people, generating $1 billion in annual revenue. The products those businesses create from recycled materials often find new life in other industries in Ohio. As an example, 100% of our curbside recyclables stay in the United States, while 95% stay in the Midwest and 80% become new products in Ohio. It's all part of the circular economy, benefiting businesses, their employees, and our environment.

Other examples of the circular economy include Advanced Drainage Systems, Inc, in Hilliard which is North America's largest recycler of HDPE plastic. ADS recycled 674 million pounds of HDPE plastic in 2021, transforming milk jugs and shampoo bottles into pipes and holding chambers that help manage stormwater runoff in cities and neighborhoods around our state. Pratt Paper Mill in Wapakoneta turns used household paper into new paper products. Aluminum cans get new life at Franklin Iron in Dayton, where old cans become new ones in less than 90 days, supporting the needs of Ohio's beverages industry. And at PureCycle in Ironton, household plastic becomes near-virgin resin that other Ohio businesses, including Proctor and Gamble, rely on to bottle soaps and laundry detergents.

Green Economy Business Park

Our Green Economy Business Park is a key part of our vision to build a more economically and environmentally sustainable future for our region. SWACO has proposed building this business park on 350 acres of SWACO-owned land. The goal is to bring together the recycled materials supply chain through research, technology, and advanced manufacturing through a capital investment of $350 million to $500 million. Models and projections show that the site, once developed, could create between 2,000 and 3,500 manufacturing jobs, producing between $1.6 million and $4.2 million in local tax revenues for the local community. If approved, the Green Economy Business Park will cement the Central Ohio region as an economic leader in the emerging market for recyclables and sustainable manufacturing.

D. SPECIAL PROJECTS AND REPORTS

Carbon Emissions Management Plan Update

A circular economy and investments in waste diversion and recycling are only part of the path to a sustainable future. SWACO and its partners in the Franklin County community are taking critical steps to reduce our region's collective carbon footprint thereby limiting our impact on climate change. SWACO has adopted a comprehensive strategy, the Carbon Emissions Management Plan, to reduce carbon emissions 64% by 2032. The goal is aligned with the International Paris Accord, which aims to limit global average temperature increases to 1.5°C. SWACO's plan addresses landfill gases, vehicle fleet and equipment, energy use and waste-management practices at all our facilities. SWACO is committed to "walking the walk" when it comes to sustainability and our progress proves it:

- SWACO facilities are now powered 100% by renewable energy; building energy emissions have been reduced by 99%.
- Waste-reduction efforts have resulted in 57% fewer deliveries to SWACO's administrative offices and a 52% overall reduction in paper usage.
- Community Waste Reduction Grants reduced approximately 1,405 metric tons of carbon dioxide emissions and diverted more than 4,800 tons of food and other material from the landfill in 2020.
- SWACO's residential drop off recycling program diverted more than 15,000 metric tons of carbon dioxide emissions from the landfill.
- SWACO's partnership with Aria Energy to capture methane gas, treat it, and turn it into usable energy provided more than 13,000 homes with clean energy, removing more than 14,000 metric tons of carbon dioxide emissions from the atmosphere.

Waste Characterization Studies

In 2019, SWACO completed a four-season waste characterization study at the Landfill and at two transfer facilities. No definitive plans to update that study are in place, although generally SWACO would hope to update the study every 5 or so years. The data from this four-season study is incorporated in Plan Appendices H-4 Composition Analysis, H-6 Difficult to Manage Waste, H-7 Diversion Analysis, and H-13 Processing Capacity.

Solid Waste Management Plan Update

SWACO continues to contract with consulting firms to support program planning and implementation. SWACO has begun to update the District Solid Waste Management Plan in 2022 and anticipates continuing contracts for the support needed to develop the Plan

E. CONCLUSIONS AND OPPORTUNITIES

The SWACO goal is to divert 75 percent of waste from the landfill by the end of 2032 through the development of a circular economy, transforming old materials into new products that preserve and protect our environment and help our businesses flourish. The new business park and market development activities will present SWACO as an industry leader and major economic engine in Central Ohio.

The Community Trash Waiver Program has been stretched beyond the original intent. SWACO needs to continue evaluating this program to ensure its original intention of litter prevention/clean-up, blight, and illegal dumping is being met.

The 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 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 preliminarily

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 including setting qualitative measurables for determining program value and objectives since it appears some of the task force efforts are duplicated by other efforts. A qualitative measure of program performance and value is being evaluated including an option of expanding upon the relationship with Franklin County Public Health to evaluate and address other solid waste public health issues.

SWACO has not provided funding to the Franklin County Board of Health since 2017. SWACO may provide it in future years as we continue to evaluate the role of the FCBH and support for the ECTF. 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.

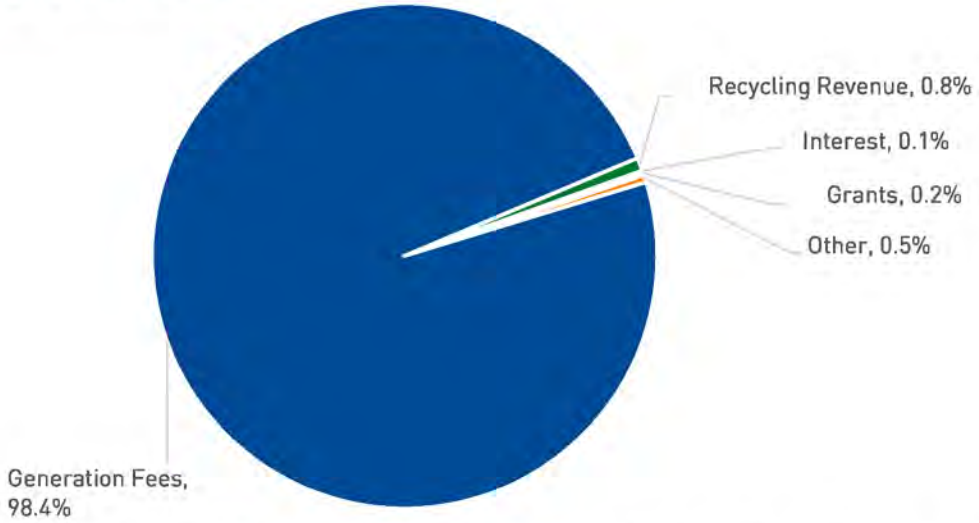
The evaluation of the role of the Board of Health will include SWACO's current investment in health and safety compliance. To ensure that the safety and health of SWACO operations is addressed, the Franklin County Landfill and SWACO currently employ a robust on-site Compliance Team responsible for maintaining regulatory compliance at all SWACO facilities. The Compliance & Engineering Team contains the Environmental Manager, two (2) Environmental Project Administrators, the Compliance Supervisor, and three (3) Environmental Compliance Technicians ("ECT").

H-9 Financial Analysis

This analysis provides the historical financial information that is the foundation for a comprehensive overview outlined in Appendix O Financial Data. The goal of H-9 is to evaluate SWACO's current financial position using historical trends. Appendix O continues this trend analysis with projected changes in the revenue and expense projections over the planning.

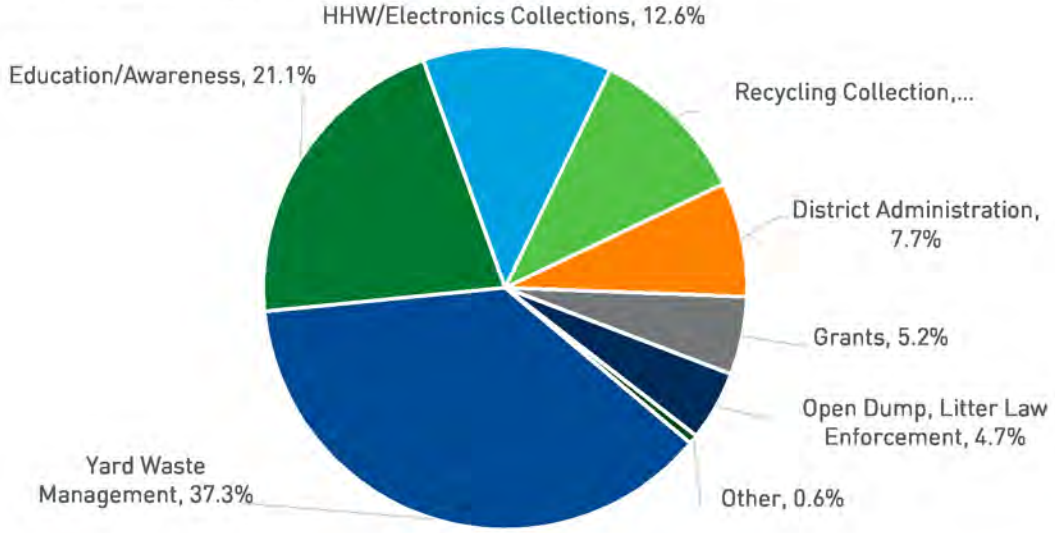
A. REFERENCE YEAR REVENUE AND EXPENSES

Figure H-9.1 Revenue Distribution in 2021



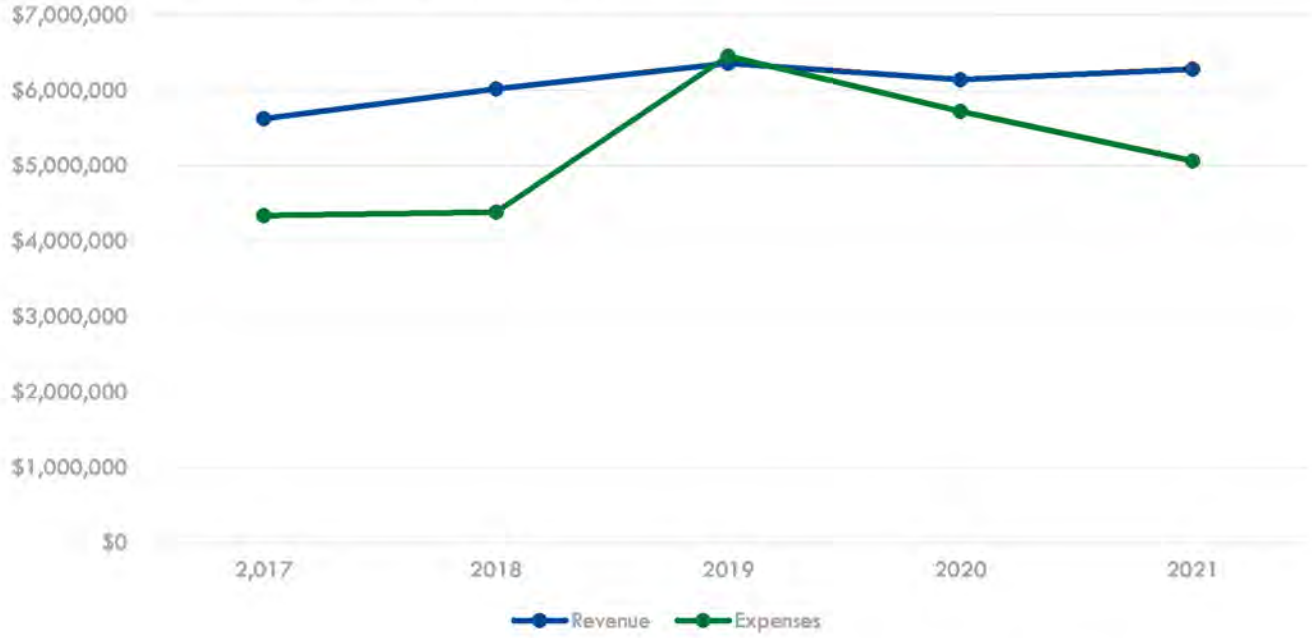
In accordance with ORC 3734.573, a solid waste management policy committee may levy fees on the generation of solid wastes within the district. Levying a generation fee means any landfill or transfer facility receiving district waste, regardless of where in Ohio the waste is disposed, remits the generation fee. SWACO's $5/ton generation fee funds solid waste recycling, reuse, and reduction programs as outlined in the solid waste management plan. Management of these programs includes fulfilling obligations to organize and/or provide programs, funding, enforcement, and education. Total revenue for 2021 was $6,282,413 representing an increase of 2.3% over 2020. In 2021, the District's expenses fell into the following distribution categories as shown in Figure H-9.2.

Figure H-9.2 Expense Distribution in 2021



The total 2021 budget was $5,061,212, Note that the largest expense in 2021 was yard waste management that represents over one-third of the total budget. SWACO currently privately contracts for the management of yard waste and compostable materials from municipal collection programs, the public, and from landscaping contractors. Ohio Mulch processes 55% of the total 277,454 tons generated. Kurtz Brothers has three facilities in Franklin County that receive approx. 30% of the remaining. The total 2021 expense for these two contracts was $1,889,116. Appendix H-10 Regional Analysis describes a strategy to address this expense. The two SWACO contracts for processing residential yard waste will be expiring in 2022 and will need to be defined. In addition, there is a growing demand from communities and residents for expanded convenient organics recycling that will require an active SWACO presence to coordinate the necessary infrastructure and new technologies.

Figure H-9.3 Historical Revenues versus Expenses



SWACO has been prudent and responsible with budgeting and has generally maintained a positive cash flow where revenues have exceeded expenses allowing an increasing fund balance. The carryover balance as of 12/31/21 was $6,42,369 which was a 23% increase over the 12/31/20 balance of $5,221,167.

B. CONCLUSIONS AND OPPORTUNITIES

The $5/ton Generation Fee has traditionally provided a stable and predictable revenue source for District operations.

SWACO has been a good steward of public funds by preserving an adequate fund balance. This has been possible by maintaining a positive cash flow where revenues exceed expenses. The 2021 $6,42,369 carryover balance equates to over 100% of the annual budget which is considered responsible during an unpredictable economy.

Additional programming will be necessary to achieve SWACO's goal of diverting 75 percent of waste from the landfill by the end of 2032. Appendix H-8 discusses the investments that will be necessary for the development of a circular economy including the potential development of a new business park. In addition, Appendix H-10 Regional Analysis describes the investments that may be needed to divert the large percentage of organics that are currently being landfilled. Appendix H-6 Restricted and Difficult to Manage Waste Streams identifies targeted

components of the waste stream that will need to be managed in order to achieve a 75% diversion. Processing these difficult to manage waste streams is far more expensive per ton than curbside recyclables or organics. For instance, SWACO spent $638,666 in 2021 to collect and process approx. 360 tons of household hazardous waste which equates to a cost of $1,775/ton. Compare that cost to yard waste processing. In 2021 the 277,545 tons of yard waste processed cost $1,889,116 which equates to only $6.80/ton.

Appendix O will identify whether an increase in the generation fee may be needed to attain long term diversion goals.

H-10 Regional Analysis

The purpose of the Regional Analysis is to:

- Define the regional waste shed and fee structure
- Identify intra-District and inter-District stakeholders within this waste shed
- Establish the financial and programmatic impact SWACO has on these stakeholders
- Identify current and future regional opportunities for collaboration and partnerships with the stakeholders to achieve common goals
- Conclusions and Opportunities: Best practice by other solid waste districts to achieve our goals

This analysis will describe existing and proposed opportunities to collaborate and partner with neighboring SWMDs and other stakeholders to promote a cooperative and consistent message, offer standardized or regional services, and to examine the impact of each other's decisions.

A. CENTRAL OHIO WASTE SHED AND FEE STRUCTURE

SWACO Impact on Regional Waste Shed

The implementation of Designated Facilities for solid waste generated within SWACO provides a stable and reliable source of funding for the Franklin County Sanitary Landfill and ensures safe and responsible disposal of waste. However, to fully meet SWACO's desires for greater waste diversion, additional capacity for recyclables and organics processing may be required. This additional processing capacity 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 in diversion and continuing waste flows makes the opportunity for regional cooperation even more critical to meet SWACO's ambitious performance objectives.

As per OEPA guidance, SWACO pledges to consider regional impact factors when examining future opportunities including amendments to designation due to changes in landfill and processing capacity and the impact on all regional stakeholders. In exchange, SWACO would expect to participate in conversations with adjacent Solid Waste District that are considering future amendments to their waste or recycling flow.

For instance, emerging trends within the waste and recycling industry favor larger regional facilities which must draw materials from a wide radius to support the ongoing capital and operational demands of these high volume, high performing and technically sophisticated operations. Developing inter-regional relations and accompanying import/export designations along with sustainable market pricing and contracts are essential to developing sustainable funding models.

One impact on the regional waste shed is the relative disposal fees. Table H-10.1 outlines the 2022 fee structures of the regional solid waste management districts within a one-hour drive of SWACO and would be considered as potentially impacted by a change in SWACO programming or capacity.

Table H-10.1 District Fee Structures 2022

District	Type of Fee	Fee
Delaware, Knox, Marion, and Morrow	Contract Fee for designated facilities	$6.00 per ton
North Central	Generation Fee	$6.00 per ton
Fayette, Highland, Pickaway, and Ross	Generation Fee	$3.00 per ton
Coshocton, Fairfield, Licking, and Perry	Generation Fee Disposal Fee	$1.25 per ton $2/$4/$2 per ton
Clark County	Generation Fee	$8.50 per ton
Athens, Hocking	Generation Fee Disposal Fee	$3.00 per ton $1/$2/$1 per ton
Logan County	Disposal Fee	$1/$2/$1 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-10.2 outlines the 2022 fee structure of the landfill and transfer facilities in Franklin County. These facilities would also be potentially impacted by a change in SWACO programming or capacity:

Table H-10.2. Disposal Facility Rates 2022

District	Tipping Fee
Columbus Transfer and Recycling	$45 per ton in-district waste
Reynolds Avenue Transfer Station	$52.36 per ton in-district waste
Georgesville Road Transfer Station	Closed
Waste Management of Ohio Transfer & Recycling	$54.50
Jackson Pike Transfer Station	$51.75 per ton on in-district waste $55.75 per ton on out-of-district waste
Morse Road Eco-Station	$52.75 per ton on in-district waste $56.75 per ton on out-of-district waste
Franklin County Sanitary Landfill	$39.75 per ton on in-district waste $43.75 per ton on out-of-district waste

Figure H-10.1 is a representation of waste flows in 2022. 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.

B. REGIONAL STAKEHOLDERS

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.

Shared Mission

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.

Some of the most key regional stakeholders are 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.

Need for Regional Collaboration

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 1980s) 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 the enactment of 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.

Extensive Network

SWACO's 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. SWACO will endeavor to compile a more

complete list of intra and inter District stakeholders and partnership opportunities. Stakeholders are defined for the purpose of this analysis as those who have a key interest and involvement in SWACO programs, problems and solutions including but not limited by this list:

- Regional (MORPC) and local Chamber of Commerce
- Ohio Manufactures Association
- Ohio Grocers Association
- Ohio Council of Retail Merchants
- The Ohio State University
- Global Organic Alliance
- Ohio Hospital Association
- Columbus Chamber of Commerce Logistics Subcommittee
- Columbus Fashion Alliance
- Mid-Ohio Regional Planning Commission
- Keep America Beautiful Affiliates
- Franklin Soil and Water Conservation District
- Solid Waste Management Districts
- SWMDs within the Central Ohio waste shed.
- Universities and educational institutions
- Municipalities and Townships
- Haulers
- MRFs/Processors
- Transfers stations
- SWACO/Franklin County Sanitary Landfill
- Nonprofits/agencies
- Private interest groups
- Manufactures/Generators
- Recycled material end markets
- OEPA
- OSWDO
- SWANA
- Medical facilities
- Outer Ring SWMD's
- Other potential interested parties

C. REGIONAL PARTNERSHIPS

SWACO will use this list to update and enhance existing relationships and explore opportunities for new relationships. These opportunities include cost savings by sharing services with the adjacent Solid Waste Districts for education, communication, or other programming such as collection events for non-traditional materials.

Solid Waste and Recycling Consortium

Appendix H-1 describes SWACO's current outreach to communities by offering contract assistance in a Community Solid Waste and Recycling Consortium. During 2021 SWACO assisted with re-bidding curbside trash, recycling, and yard waste contracts to 16 communities. In total, 24 communities were participating in one of three community consortiums.

A total of 31 of the 41 communities participate in some form of contract assistance from SWACO. Communities also have access to Eastman & Smith LTD, for legal counsel. This program is always available to other communities that could benefit from the collaboration and best practice sharing that occurs within the consortium. Community Solid Waste and Recycling Consortium free technical guidance and legal services assist

communities with writing contracts and procuring residential waste, recycling, and yard waste collection and processing services. The program provides specialized support where communities have limited capacity and creates uniform policies throughout the region. The program aids in the adoption of best practices for residential waste reduction and diversion. The contract assistance and consortium program continue to provide high value to district communities and residents. The program has helped to create uniform polices and support the adoption of best practices for residential recycling. The program will continue to play a significant role in the development of new policies, services, and programs that will help to increase the capture of recyclable material.

Business Partnerships

Clear interest exists from businesses for recycling and assistance in creating flexible, multi-faceted programs designed to educate about best practices and provide financial incentives to businesses to start new recycling programs. In response, SWACO developed the Business Recycling Champion program that provides assistance with programs for bailers and compactors for high-volume generating businesses. SWACO plans to explore development of additional programs for targeted materials such as film plastic and to evaluate supporting community scale requirements for other business recycling services.

Schools and University Partnerships

Appendix H-2 describes potential plans to enhance SWACO's involvement with the sixteen major public-school districts, and with leading centers, technical, vocational, and private schools. As described in Appendix H-2, SWACO has a comprehensive curriculum targeted at students and teachers in the three-school district and hopes to expand recycling collection and target materials within these districts.

SWACO also offers a cooperative bidding program that allows school systems to leverage their collective buying power by cooperatively bidding for trash, recycling, and potentially other services, resulting in lower costs and high-quality services. SWACO manages the bidding process and does the legwork to make it as simple as possible for school systems to participate in the process at no cost to them. The program started in 2012 and is ongoing. SWACO and Eastman & Smith provide technical assistance and legal advice throughout each year, as needed. The joint bidding process occurs every 3 – 5 years. 2022 Consortium Members include Bexley, Columbus, Educational Service Center of Central Ohio, Groveport Madison, Hilliard, New Albany Plain Local, Reynoldsburg, South-Western, Upper Arlington, Westerville, and Whitehall City Schools. SWACO attempts to engage with every school district at the beginning of each new bid process.

SWACO's School Recycling Champion Program encourages interested schools agree to make a commitment to assess their current recycling program, adopt some recycling best practices, educate staff and students, and report their success to SWACO. Upon completing the program, schools are publicly recognized and receive SWACO School Recycling Champion status.

SWACO also assists to ensure the continued success of the drop-off recycling program that provides and services drop-off recycling dumpsters at 16 school districts. SWACO recognizes the challenges of costs and staffing and pledges to these issues in the future through collaboration and partnerships between the districts.

SWACO also hopes to grow the relationship with The Ohio State University to assist them in achieving their goal of 90% diversion of waste from landfills by 2025, plus has a zero-waste stadium. These are aggressive goals and SWACO's expertise and participation will be needed to make steady progress from their current diversion rate of 35.8%.

Cart Deployment Program

SWACO works with local communities to coordinate the purchase and distribution of collection carts to enhance participation and reduce collection costs. To date 60,000 carts have been deployed.

Commercial Partnerships

Other partnership and collaboration examples are described in Appendix H-2 Commercial Business, Government Agencies, and Office Buildings. This appendix describes programming offered to the Central Business District where there are clusters of concentrated commercial businesses/institutions, universities, and entertainment areas. Opportunities exist to evaluate performance, enhance new services and enforcement activities. These opportunities include:

- Targeted educational and outreach events.
- 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.

Event Venues

Collaboration or partnership opportunities for away-from-home recycling are continually being explored SWACO will continue to work with stadiums, concert halls, and other event venues to review and enhance waste reduction efforts. Examples include aiding with establishing effective recycling and food waste diversion programs in the new Columbus Crew stadium and the Nationwide Arena (Columbus Blue Jackets).

Multi Family

Small commercial waste generators like multi-family will be a focus of education and outreach incorporating the current relationships with the City of Columbus and The Recycling Partnership. The goal of this ongoing collaboration is to review the results of a pilot multifamily recycling program currently being conducted at nearly 10,000 housing units in Columbus and across Franklin County. Results will help shape a comprehensive 2022 Franklin County Multifamily Housing Recycling Program.

Landfill Tours

SWACO for the past 20 years has offered engaging, high-impact landfill tours for school groups and other adult stakeholders to educate the youth about the importance of reduce-reuse-recycle and composting.

Although there was a disruption in the program due to COVID, SWACO expects to target outreach with all school districts to promote this important educational tool

Medical Institutions

Medical facilities have unique waste reduction challenges. SWACO will continue to work with Phoenix Recycling, Eco Development, and Fabricated Packaging materials to explore acceptable unique materials and to collaborate with the facilities to develop safe and effective collection programming.

Regional Data Collaboration

SWACO will explore strategies to improve data consistency and rule enforcement across jurisdictional borders. 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 are following the law or have moved their illegal dumping elsewhere. Interjurisdictional collaboration and data sharing could help to support mutual aid enforcement agreements.

The success of multijurisdictional collaboration is evident with area economic development organizations that have worked together to capture the full economic development benefit of the waste resource management system and accommodated its impacts in context of the entire region.

Additional Outreach and Education Targets

SWACO will also explore strategies to enhance information dissemination through SWACO Innovation and Program Teams. There is also an opportunity to expand the relationship with the Franklin County Community Clean-up Fund Committee to assist communities with improved scrap tire collection events and programming.

Yard Waste and Organics

One of the larger material categories for potential diversion is food waste from commercial and institutional generators. There are currently limited outlets for processing and handling food waste within Franklin County. SWACO will need to accept the challenge of encouraging development of organics processing and the delivery of edible salvageable food to those in need. Target organizations and programs include:

- Food Rescue US
- Columbus Recreation and Parks Department's GoLunch Program,
- DNO Produce
- Gourmet Fresh Catering

SWACO will use information received from a $60,000 USEPA grant focused on food waste behaviors and the positive benefits that education programs provide. SWACO developed the *Save More Than Food* campaign as a result of this grant that provides resources and education on ways to reduce food waste and organics. Future outreach will provide communication tools, technical assistance, and resources to assist commercial, institutional, and other entities to reduce food waste.

This campaign has resulted in SWACO assisting over a dozen food businesses to pilot food rescue including Wendy's, Local Cantina, Harvest Pizza, Ohio Health, Cameron Mitchell, and the Mid-Ohio Food Collective Collaboration. In addition, over 10,000 food businesses received educational materials on how to donate food and on best practices for food waste reduction and diversion.

Expanded education and outreach on yard waste management is also necessary to increase diversion of this large portion of the recoverable waste stream. Food waste can be transformed into assets from biogas as an energy source and animal feed to compost. An intra-regional effort will also be explored to focus on expanding source reduction education, on-site backyard composting, neighborhood gardens and multi-county efforts designed to entice significant infrastructure investment. Regional partnerships will be necessary to ensure the success of

yard waste and food waste processing infrastructure. Efforts will need to include cataloging the infrastructure, exploring markets, and developing more pilot collection systems.

Hard to Recycle Items

Partnership potentials exist to address more specific components of the waste stream including political Sign Recycling after major elections. SWACO will improve upon a program to partner with communities to conduct individual collection programs since few options currently exist for residents/candidates to recycle their signs.

Partnership opportunities also exist with more community-conducted Pharmaceutical Collection Events. SWACO expects to work with DEA and law enforcement organizations to coordinate localized collection events. Similarly, E-waste recycling partnerships exist with national and local organizations to support recycling events.

SWACO also supports the development of new processing infrastructure for other hard-to-recycle materials such as mattresses, textiles, and carpet.

Inter-district Collaboration

SWACO will also explore some of the best collaboration and partnership practices from other solid waste districts. For example, Hamilton County uses its Targeted Community Outreach Program to help communities improve their recycling programs. Each year, the district selects two communities and provides targeted, comprehensive outreach and technical assistance to those communities throughout the year with a goal of increasing communities' recycling rates using a combination of its countywide Social Marketing Campaign Plan and community specific outreach.

Cuyahoga County Solid Waste District's Master Recycler Program offers a an eight-week certification course to residents designed to create recycling leaders that will help educate and assist friends, family, and neighbors to expand on their recycling knowledge. The Cuyahoga County Solid Waste District also publishes a residential recycling report detailing the waste management and recycling progress of 59 communities within their boundaries. The report details different recycling statistics for each community and is intended to reinvigorate energy and interest in local recycling programs.

D. CONCLUSIONS AND OPPORTUNITIES

SWACO has an extensive existing network of partnerships that have created a high performing framework that is readily exportable beyond the SWACO boundaries. SWACO has a history of using these partnerships and collaborations to design best practices programming for specific stakeholders with specific challenges. In addition, SWACO has an aggressive community outreach and education programming targeting Franklin County families that include:

- Waste to Resources webinar series
- Landfill Tour Program
- Special Waste Collections
- Connect With Us
- Composting Bin Distribution
- SWACO website with 130 million views
- Tabling Events
- E-newsletters
- Social Media
- Prescription Drugs and Pharmaceuticals collection programs
- Electronic Waste collection programs
- Recycle Right at Work Webinars
- Guest speaking at Columbus Greenspot webinars, Columbus Chamber of Commerce webinar, others

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 wastewater 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. 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.

H-11 Data Collection Analysis

The purpose of section H-11 is to analyze the SWMD's current data collection efforts and to identify ways to improve the process to ensure the most accurate applicable and comprehensive data is available for future planning and evaluation. The conclusions drawn from this analysis will be used to develop improvements in Appendix I.

Waste is generated by three sectors: residential, commercial, and industrial. Waste 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 described in this section is not exclusive to survey data and published statistics. This analysis also includes the internal data gathered from programming offered to each of the three sectors. The data from SWACO programming is another crucial component used to establish the necessary resources dedicated to these sectors and to assist in the gap analysis to determine whether additional resources may be needed.

As per the OEPA 4.1 Guidance Document, this Data Collection Analysis will consider the following factors:

- Sources and staff involved in the data collection process.
- Data collection methods, frequency, and strategy to address data gaps.
- Necessary resources and value of the data towards policy adjustments.
- Role of haulers, processors and other facilities.
- Potential improvements.

Overview

Program data and statistics are an important tool that SWACO uses in the evaluation of district programming. SWACO routinely tracks and analyses these statistics to ensure progress, value, and return on investment. SWACO recently published program performance data in the 2021 Impact Report https://swacoimpactreport.org/ Examples of the 2021 data published in this report include:

- 54 inquiries were received from businesses from July – Dec.
- 27 inquiries about food waste and composting from Oct- Dec.
- 18,000 lbs. of surplus plexiglass shields that were destined for the landfill provided free of charge to 24 schools.
- SWACO's community Recycle Right educational campaign presented to 40,000 households.
- 2 additional food waste drop-off locations through SWACO's Community Waste Reduction Grant program, bringing the total to 7 communities and 12 locations.
- Implemented the Save More Than Food campaign in Upper Arlington resulting in a 21% reduction in the amount of food waste being generated.
- Provided more than $215,000 in grant funding to 13 area communities, nonprofits, and government organization; School Consortium program assisted 9 school districts in successfully re-bidding trash and recycling services; Hosted 25 educational webinars.
- Conducted 71 landfill tours reaching over 2,500 people.
- 220,00 visitors across all SWACO web sites.

In addition to this internal program data review, 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 is described further in this section.

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 2021 reference year, SWACO's residential/commercial sector achieved a 44% record high diversion rate despite having 45,200 more tons generated due to the rapid growth in Franklin County.

SWACO actively seeks and welcomes collaboration with the assigned OHIO EPA planner on a variety of planning initiatives. SWACO had made 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. Further, SWACO devotes staff time to overseeing and participating in a comprehensive data collection effort, as well as hiring a consultant.

A. RESIDENTIAL SECTOR

SWACO uses a variety of sources and methods to capture data from the residential sector. 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. 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.

Re-TRAC

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 continues to use Re-TRAC to collect survey data from processors and communities. On the community side, in 2021 we developed a strategy to encourage communities to use the MMP (Municipal Measurement Program) to report their activities, including migrating past data into the MMP system. SWACO provided two training sessions in early 2022 with communities to teach them how to use the MMP system to report their 2021 activities. At this point we anticipate continuing to encourage communities to use the MMP system moving forward.

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. This 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 username 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 aid so the community can complete the surveys.

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 researched and called. 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 NAICS codes from the ReferenceUSA database. ReferenceUSA is a leading provider in business and consumer research. SWACO's public and private partners that provide recycling opportunities are also surveyed. Survey recipients are identified through first-hand observation.

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.

Residential Sector Data Gaps

Although an 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 the 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.

Using the Re-TRAC process has been problematic and survey responses and data collection are limited as a result. Participants struggle with the Re-TRAC sign in registration and sign on process. Many had forgotten their passwords, or the responsibility had been reassigned so that they could not recall the password. Out of frustration, some participants preferred to just give the data to the consulting group managing the process instead of navigating the sign on and data entry process.

B. COMMERCIAL SECTOR

SWACO also uses a variety of methods to capture data from the commercial sector. 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

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.

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. In 2021, surveys were emailed to the current list of 87 with 20 additions added manually. 22 food waste surveys were also emailed. 37 total responses were received for a response rate of 28% which is a typical 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.
- Quality and accuracy of data gathered due to respondents' internal reporting process.

Despite the challenges of data gathering, SWACO is committed to using statistics and data gathering as a tool to showcase the success of recent best practices programming. The 2021 ADR and the 2021 Impact Report describe the statistical details for some of the newest and most innovative initiatives. Examples include:

- SWACO worked with stadiums, concert halls, and other event venues to review and enhance waste reduction efforts. In 2021 SWACO worked closely with the Columbus Crew and Ohio EPA to develop a 2021 grant for the Crew to establish recycling within their new stadium. SWACO also had engagement with Nationwide Arena (Columbus Blue Jackets) in 2021 and continue to work with them into 2022.

- SWACO's School Consortium for Solid Waste and Recycling provided technical and monetary assistance to retain the services of Eastman & Smith for the School Consortium program. Eight (8) school districts entered into a joint bid process for the collection, transportation and disposal of solid waste and processing of recyclable materials generated in and collected from the participant's buildings/facilities and during special events. Participants selected a hauler to enter into an agreement with beginning in 2022.

- SWACO offered the School Recycling Champion program to five program applicants who worked with SWACO in the 2021-2022 SY to implement program outreach and education activities to increase recycling diversion at school. SWACO also provided each school with indoor recycling containers and signage for classrooms and common areas aligned with best practices.

- SWACO continued to offer technical assistance to government entities to establish and improve government building recycling programs including the DAS for recycling in the Rhodes Tower in downtown Columbus and Ohio Dept. of Rehabilitation and Corrections for recycling containers and composting equipment for their Franklin Medical Center.

- SWACO provided grants in 2021 to COSI, Habitat for Humanity, the Ohio Wildlife Center, and Community Development for All Peoples, and the City of Westerville to create a Zero Waste Plan that is intended to address the both the City and businesses and other institutions within the City. SWACO also continued to collaborate with OSU through the formation of an MOU to assist with strategies to reduce and divert materials in their waste stream.

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, 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 have 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.

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.

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.

C. INDUSTRIAL SECTOR

SWACO employs the same sources and methods used for commercial sector surveying to survey the industrial sector. 2021 industrial activities included a focus on targeting specific materials such as fibers, plastics, and other materials SWACO continued to provide technical assistance to industries trying to divert specific waste streams. While SWACO does not have a dedicated program exclusively for industrial entities, our business resources are available and applicable to industrial entities. As an example, in 2021 we provided technical assistance to DHL which resulted in depackaging 80 pallets of obsolete products and recycling the cardboard

packaging. SWACO also assisted Luma Ware/Ashtonne find homes for approximately 60 pallets of unused desk shields, or about 13,500 shields, that would otherwise have ended up in the landfill.

SWACO also continues to develop a Green Business Park on property that is owned by SWACO that is designed to attract and support industries that can create value out of waste materials either through processing materials or using recycled materials as a feedstock for their business.

Each year SWACO strives to expand our data collection efforts to more entities in the waste processing, commercial and industrial sectors. In 2021 SWACO was able to get survey responses from several entities that have not reported to SWACO in the last 2 years as a result of an effective outreach campaign. Letters mailed encouraged participation and described the benefits of data development:

> *Dear Facility Manager,*
> *Thank you for being an important part of Central Ohio's recycling industry! We know that 2021 continued to be a challenging time for all local businesses, including those in the recycling industry. Your business plays a critical role in helping Franklin County reach a goal of diverting 75% of the waste stream from the landfill by 2032. One of the goals of the Solid Waste Authority of Central Ohio (SWACO) is to support businesses like yours that are part of Central Ohio's diverse and growing recycling economy. If you're not familiar with SWACO, we are a governmental entity responsible for providing local businesses, residents, and governments with information and resources to help them recycle the waste that they generate. If there are ways that SWACO can partner with you or help to support your business, please do not hesitate to reach out to us with your ideas! Each year we also contact all of the recycling related businesses in Central Ohio and ask them to complete a short survey that will help determine Franklin County's progress toward meeting our state and local recycling goals. Your survey response will be combined with other survey responses into a Franklin County report. Individual company information will not be identified. Last year we were able to document a 51% waste diversion rate in Franklin County! While you may not have participated in this survey in the recent past, we would love to include your information as part of this annual report. We conduct this survey through an online "Re-TRAC" system designed specifically to gather this information. If you have questions or concerns about this, please email me or call me at the number below. This survey can also be completed in hard copy form or over the phone. We encourage you to visit swaco.org to learn more about SWACO and the programs that SWACO provides. Please submit the calendar year 2021 recycling data for your business by Friday, April 1st, 2022.*

C. CONCLUSIONS AND OPPORTUNITIES

SWACO focuses extensive efforts to survey communities, haulers, businesses, industries, processors and recyclers. In addition, SWACO has an extensive data gathering process from all the outreaching programs offered to stakeholders. This data gathering process 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. Data gathering is further limited by the burdensome survey process and the complexities of the online data reporting software tool Re-TRAC. This results in lower participation and inconsistency of data collection.

SWACO also has gaps in data collected from compost processors that do not report the generator source of yard waste. This is a data piece that if provided would help track the performance of programs but is not required under the contracts. SWACO has also identified gaps in data from programs managed by out-of-state organizations.

SWACO's best efforts have been successful at avoiding double counting and saving time and staff resources. However, critical data gaps exist that limit SWACO's ability to do a more thorough program analysis and planning process. A focus on improving surveying participation and the data gathering process will need to be a priority during the planning period as described in the individual gap narratives in this section.

H-12 Education/Outreach Analysis

The 2020 State Plan goals restructured the education and awareness goals with the intention of creating minimum standards for outreach programming but still allow for flexibility for localized outreach and education.

The 2020 State Plan refocused the general "awareness" of recycling to changing behavior through outreach. This analysis evaluates the SWMD's existing education, outreach and technical assistance efforts to determine:

- If the programs address all five target audiences (residents, schools, industries, institutions and commercial businesses, and communities and elected officials).
- Effectiveness and adequacy of programs.
- Strategy for incorporating Goal 4 into the programs.

A. AUDIENCES

The 2020 State Solid Waste Management Plan established ten goals for Districts to achieve. One of the goals requires that solid waste management districts shall provide education, outreach, marketing, and technical assistance regarding reduction, recycling, composting, reuse, and other alternative waste management methods to identify target audiences using best practices. SWACO has five target audiences, including:

- Residents
- Schools
- Industries
- Commercial businesses and institutions
- Communities and elected officials

The following chart shows the targeted audience for each of the District's existing programs:

The following chart shows the targeted audience for each of the District's existing programs:

Education/Outreach Program	Description of Activities
Residential	
Anti-Litter, illegal dumping, and litter reporting	Environmental Crimes Task Force "itsacrime.org" web site and 24-hour hotline.
Electronics recycling	Businesses that accept e-waste are listed on recycleright.org.
Scrap tire	Businesses that accept tires are listed on recycleright.org.
Organics/food waste promotion	Save More Than Food (savemorethanfood.org) promotes awareness of prevalence of wasted food.
Educational collateral	Printed 'slim cards' that describe SWACO diversion programs.
Community events	Staffed a booth/table at community events.
Schools	
Targeted outreach	Annual newsletter and social media posts promoting programs.
Presentations & workshops	Presentations, educational video, and virtual & in-person tours of facilities to over 2,159 students.
Audience-specific collateral	Classroom activities, signage, best practice guidance.
Community events	Staffed a booth/table to provide school-related programs for parents to take back to teachers/school administrators.
Case studies	Published video interviews with schools, grant reports showcasing model programs, and best practice guidelines on website.
Industries	
Targeted outreach campaign	Partnership with Columbus Chamber of Commerce to reach businesses, including webinars promoting SWACO programs.
Speaker/Presenter	Recycle Right at Work webinar series.
Recognition program	Continued to develop and pilot Business Recycling Champion Program. Full implementation will come in 2022.

Audience-specific collateral	Further developed Business Recycling Toolkit on website; posted webinars for passive viewing.
Institutional & Commercial Businesses	
Business forums	Recycle Right at Work webinar series.
Business recognition	"Caught Blue Handed" social media campaign, Business recycling Champion logo for in-business display.
Speaker/Presenter	Continued to develop and pilot Business Recycling Champion Program. Full implementation will come in 2022.
Recognition program	Continued to develop and pilot Business Recycling Champion Program. Full implementation will come in 2022.
Digital toolkit	Customizable flyers, labels, templates to simplify recycling program rollout.
Convene stakeholders	In lieu of in-person meetings, webinars and one-on-one interactions were primarily used to offer resources.
Communities & Elected Officials	
Convene stakeholders	Annual virtual event with City Managers and Mayors.
Case studies	Presentations by grant-funded communities to showcase best practices and implementation strategies.
Presentations & workshops	Presentations by grant-funded communities to showcase best practices and implementation strategies.
Digital toolkit	Customizable flyers, labels, templates to simplify recycling program rollout to 8 communities.
Recognition program	Invite community representatives to present program overview and receive Certificate of Appreciation from SWACO Board.
Across All Audiences	
Resource Guide	SWACO's websites are considered resource guides: recycleright.org, savemorethanfood.org, swaco.org.
Speaker/Presenter	In-person speaking engagements to any groups.
Education campaign	Recycle Right, Make a Difference campaign.
Annual report	2020 Community Impact report issued.
General audience collateral	Printed and digital resources that help to inform and educate the community at-large about SWACO programs, services, and facilities.
Material-specific education/outreach	
Organics/Food Waste	The Save More Than Food campaign offers resources to reduce food waste. Activities include market research interviews to assess current activities and gaps in resources to inform future programs, technical assistance, and resources.
Yard Waste	Outreach campaign on proper yard waste management includes social media, website and email campaign materials.
Electronics	Resource guide on website connects community to local outlets for electronic waste.
Tires	Resource guide on website connects community to local outlets for tires.

B. EXISTING PROGRAMS

District Website & Facebook Page

SWACO maintains an organizational website (www.swaco.org) as well as three sites dedicated to education - www.recycleright.org, savemorethanfood.org and SWACOimpactreport.org. Together the sites averaged 20,000 visitors per month.

Residents

Residential Recycling: Recycle Right Campaign

- Recycle Right, Make A Difference campaign aims to improve recycling behaviors by increasing participating and reducing recycling contamination
- The program includes a media component, a community component, and a website (www.recycleright.org)
- Elements of the campaign launched in 2018. So far, the campaign has been seen over 175M times (impressions) and recycleright.org has been visited 361K times (an average of 9,200/month)
- Annual expenses:
    - Media component: $200,000-300,000
    - Community component: $70,000 (depending on development cycles)

20 Communities have participated in a Community Campaign through 2021. This covered approximately 130,000 households.

Recycle Right
MAKE A DIFFERENCE

Residential Food Waste: Save More Than Food Campaign

- SWACO piloted the campaign with UA in 2021 with grant funding through the US EPA
- The pilot measured a 21% decrease in the amount of food waste that was being generated
- 57% increase in awareness about food waste and the campaign
- 40% increase in the amount food waste being composted at drop-off sites

Preliminary Findings and Recommendations

- The Save More Than Food (SMTF) campaign plays a pivotal role in helping to create awareness and spur action to address the largest single waste stream currently being landfilled, food waste.
- SWACO is working with communities to replicate and deploy the campaign and the community and residential level, including mailers, advertisements, and social media.
- The SMTF campaign will continue to scale up to reach more communities and residents in the upcoming years.
- The SMTF platform will also be used to integrate future program opportunities such as curbside food waste collection.

Schools

The District provides educational opportunities for students throughout the school year. This includes:

School Recycling Champions

SWACO collaborates with schools to offer technical assistance and school educational programs and activities related to food waste. Assistance can include establishing composting programs, donation services, share tables, and educational activities and curriculum. The goal of this program:

- Assist schools with starting and improving recycling programs
- Designed to help schools build successful, sustainable, & comprehensive programs that can serve as a model to other schools within or outside of the school district
- Individual schools apply to participate in the program
- Program participants receive recycling containers, signage, and education assistance from SWACO

- Upon completing the program, schools are publicly recognized and receive SWACO School Recycling Champion status.

Interested schools agree to make a commitment to assess their current recycling program, adopt some recycling best practices, educate staff and students, and report their success to SWACO.
This includes 7 steps that occur within the school year:

1. Schools apply to enter the School Recycling Champion program May – August
2. School walk-though and meeting with SWACO to identify needs
3. School requests recycling containers and a banner
4. SWACO orders recycling containers and has them delivered to the school
5. School places containers and signage in alignment with SWACO best practices and educates staff, students including a SWACO landfill field trip
6. At the end of the school year, the school submits a final report to SWACO
7. SWACO visits school to award them with a certificate recognizing them as a School Recycling Champion. Schools are also recognized via social media and in local papers

Preliminary Findings and Recommendations

- Effective way to implement best practices in schools and provide financial incentives for program start-up
- Unique opportunity to integrate education about recycling to an important audience (students)
- Dependent on teachers and school-level administrators - challenging to scale up from pilot schools to district-wide implementation
- Develop a strategy for a district-wide approach with school consortium members to increase diversion
    - Multi-year implementation plans
    - Pilot Schools
    - "Block grant" approach for entire school district

Commercial Businesses and Institutions
The District provides educational and program opportunities to the business and institutional sector as follows:

School Waste Resources

SWACO provides a lot of resources for waste education around waste prevention, recycling, and food waste:

- Food Waste from Farm to Fork
- Points for Prevention
- SWACO Landfill Tour
- Zero Waste Lunch Poster
- Student Pre- and Post- engagement assessments
- Building a Share Table in Central Ohio K-12 Schools

Preliminary Findings and Recommendations

- SWACO's relationship with schools offers an ideal opportunity to implement increased food waste diversion activities.
- Grow and scale food waste educational activities in classrooms throughout the District. Additional staffing capacity may be necessary.
- Support schools with implementing readily available food waste reduction activities such as share tables and food donation.
- Coordinate with schools to evaluate school consortium contracting for collection of food waste when infrastructure and services are available

Commercial Businesses and Institutions

Business Recycling Champions (2022)

Flexible, multi-faceted program designed to educate about best practices and provide financial incentives to businesses to start new recycling programs.

1. Complete a Recycling Plan using SWACO's toolkit and template
2. Submit to SWACO for approval
3. Become eligible for:
    a) Indoor containers @ 50% cost up to $1,000
    b) Signage @ 50% cost up to $500
    c) Service Start-up Support up to $500

Preliminary Findings and Recommendations

- Clear interest by businesses for recycling and assistance in creating programs
- Businesses need support that works on their timelines
- The basics still matter – containers, signage, service providers
- Implement Version 1.0 of the Business Recycling Champion program, learn from the experience
- Develop incentive program for bailers and compactors (high-volume generating businesses)
- Explore development of additional programs for targeted materials (e.g., film plastic, others)
- Evaluate supporting community scale requirements for business recycling services

Industries

The District provides educational and program opportunities to the industrial sector as follows:

- Business resources (Tookit, Waste Assessment tool, etc.) are available and applicable to industrial entities.
- Business Recycling Administrator is available to provide technical assistance to these entities.
- The District will consider a future targeted outreach campaign aimed at manufacturing industries in Franklin County and will inform them of relevant resources and services to include:
    - 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
    - Promotion of Ohio EPA's Material Marketplace and assistance from JobsOhio
    - 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
    - Convene meetings and special events, such as business roundtables, conferences, and symposiums, which cover topics including best practice, contract assistance, and information on local/national trends.
    - Providing additional educational collateral materials describing programs suitable to this audience.
    - Develop and promote case studies on examples of best practice in waste reduction and diversion specific to this sector

Preliminary Findings and Recommendations

- Growing demand for solutions from all business sectors, at all levels of current recycling activity

- Diverse needs: technical assistance; financial support; connecting to processors; other efforts & connections
- Continue to grow and develop financial assistance to support adoption of services
- Continue to explore industry-specific challenges (e.g., hospitals)
- Pilot solutions
- Investigate and invest in technologies
- Support the development of new processing infrastructure for hard-to-recycle materials
    - Mattresses
    - Textiles
    - Carpet

Communities and Elected Officials

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 provides educational materials to this sector that promote the beneficial impacts of waste reduction and diversion in the District.

SWACO provides educational and program opportunities to community leaders and elected officials as follows:

- Technical assistance when requested
- Assistance and collaboration with recycling consortiums
- Presentations

C. CONCLUSIONS AND OPPORTUNITIES

Possible opportunities include:

- Advertising education resources for schools and businesses such as: how to waste audit guide, classroom lessons, workplace recycling guide, waste-free classroom, etc.
- Optimize during program changes to educate residents on the importance of recycling right and keeping contamination out of the recycling stream for drop-off and curbside programs. May include changes in collection frequency, additional food waste drop-offs, new multi-family housing recycling programs.
- Sticker updates to carts with new acceptable resources.
- Offer reminders to check the acceptable recyclables list on cart on social media and the webpage.
- Outreach to multi-family housing landlords and property management companies to help establish or improve multi-family housing recycling programs with new SWACO program implementation.
- Provide resources for self-conducting waste-audits on the webpage.
- Online flyer samples provided to each political jurisdiction to customize their residential recycling program contact information details to clarify what is and is not recyclable.
- Expanded industry waste reduction focus.

H-13 Processing Capacity Analysis

The analysis of accessible recyclable material processing capacity is a critical planning exercise. Processing capacity is required to ensure the success of new and existing recycling collection programs and is required to ensure reliable markets for the expansion of acceptable materials.

The purpose of this analysis is to evaluate existing processing capacity within Franklin County. The goal is to determine if there is adequate existing processing capacity and to discover what plans and polices SWACO can adopt to enhance and expand capacity. Areas of concentration will include:

- Origins of recyclable materials
- Existing and projected recyclable volumes/tonnages
- Accessibility and usage of existing processing facilities
- Processing facility capacity and expansion plans
- Conclusions and future opportunities

A. ORIGINS OF RECYCLABLES MATERIALS

There was 986,821 total tons of recyclable materials identified in the SWACO 2021 base year ADR from these sources:

Table H-13.1 Quantities Recovered by Program/Source

Program/Source of R/C Recycling Data	Quantities (Tons)
Commercial Survey	109,132
Data from Other Recycling Facilities	422,144
Ohio EPA Commercial Retail Data	55,878
Curbside Recycling Services	65,796
Drop-off Recycling Locations	6,085
Composting Facilities	277,200
Other Food and Yard Waste Management Activities	26,724
Ohio EPA Scrap Tire Data	23,510
SWACO Data - SWACO HHW Mobile Collections	53
SWACO Data - SWACO Permanent HHW Collections	299
Total	986,821

Projected Recyclable Volumes/tonnages

The 986,821 tons recovered in 2021 was a 1% increase over 2020. Five-year historical increases have averaged 1.5%. Assuming a similar trend, projected 2022 recovery is expected to total approximately 1,000,000 tons with a 1.5% to 2.0% annual ongoing increase. This report outlines the more aggressive plans to ensure processing capacity to meet SWACO's goal of diverting 75 percent of waste from the landfill by the end of 2032.

Accessibility and Usage of Existing Processing Facilities

Eight primary recyclable material processing locations were identified. Rumpke Waste Recycling manages over 80% of the residential and commercial recyclable materials at their Columbus facility.

Table H-13.2 Inventory of Material Handling Facilities Used by SWACO in the Reference Year

Facility Name	County	State	Type of Facility	Weight of Material Accepted (tons)
Rumpke Waste Recycling - Columbus: Residential	Columbus	OH	MRF	59,378
Rumpke Waste Recycling - Columbus: Commercial	Columbus	OH	MRF	20,324
Rumpke Center City Recycling - Hamilton County: Commercial	Hamilton	OH	MRF	685
Rumpke Recycling - Dayton: Residential	Montgomery	OH	MRF	1
Dayton Glass Plant: Commercial	Montgomery	OH	MRF	19,370
Rumpke - Chillicothe: Commercial	Ross	OH	MRF	92
Waste Management - Akron MRF: Residential	Summit	OH	MRF	133
Waste Management - Akron MRF: Commercial	Summit	OH	MRF	64
Total				100,048

Rumpke has been a reliable and accessible recyclable material processing partner for SWACO and has a regional presence in Central Ohio as illustrated on the map above. Rumpke is a family-owned and operated business, founded in 1932 by William Rumpke near Cincinnati, Ohio. This central Franklin County facility is just north of the Columbus city center and within a 15-mile radius of Franklin County. The Fields Avenue facility was reopened in August 2011 after undergoing renovations that improved efficiency with new technology including programmable magnets and industrial vacuums that doubled the sorting capacity to 30 tons per hour. The Fields Avenue facility processes material from Greater Columbus, along with recyclables from third-party collectors and Rumpke locations in Chillicothe, Circleville, Ironton, Mansfield, and Mt. Vernon.

In addition to this local facility, Rumpke also processes materials at a larger facility in Cincinnati. Rumpke's Cincinnati facility has an annual capacity of 98,000 tons, and materials brought to this facility are also collected from both residential and commercial sites.

Acceptable materials for Rumpke include newspapers with ad slicks, magazines, corrugated cardboard boxes, telephone books, office paper, junk mail, grocery bags, aluminum cans, steel food cans, aerosol cans, glass food

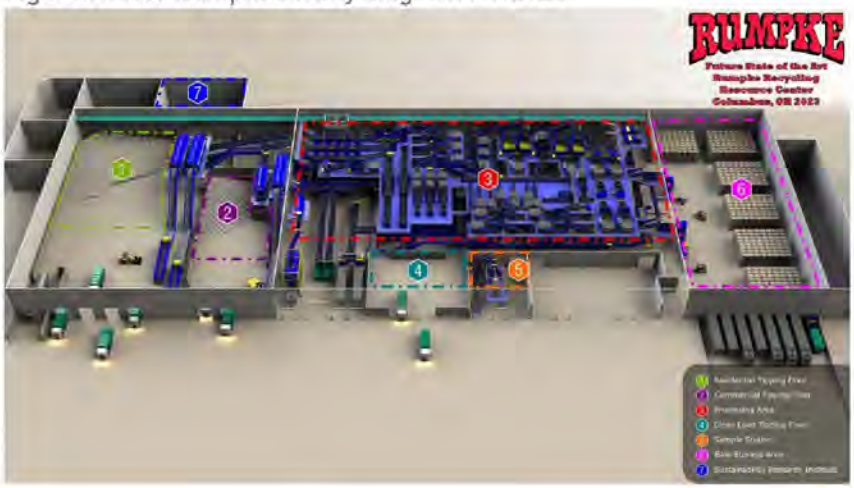
and drink bottles and jars (all colors and clear) and plastic bottles and jugs. Rumpke ships processed materials from their recycling centers each year to vendors throughout the world who use these materials to produce new products. Many of these vendors are located in Ohio.

In 2009, Rumpke Recycling Cincinnati underwent a $6 million renovation to upgrade to the latest technology. The renovation included the addition of TiTech Optical Sorting Scanners, a new concrete tipping floor, a new compressor room, new duct work, a new air filtration system, a new mezzanine walkway for public tours and employees and new ergonomically designed platforms. The new equipment increased processing from 14 tons per hour to 27 tons per hour and allows Rumpke to process natural HDPE (plastic #2) and colored HDPE separately. The new facility increased glass recovery from 600 tons to 1,000 tons per month.

B. FUTURE PROCESSING CAPACITY

Rumpke's expects to construct a new $50 million MRF in Columbus that will provide adequate capacity for SWACO. The plant is designed to adapt to changes in future recycling streams over the next 20 years. The 200,000-square-foot facility will be built on 25 acres adjacent to the current downtown Columbus facility. The facility is expected to be operational in 2024. The new facility will have design capacity of 13,000 tons per month at 50 tons per hour, an increase over the current 30-45 tons per hours capacity.

Figure H-13.1 Rumpke facility diagram for 2024



Expanded Materials

In addition to the traditional acceptable materials, Rumpke now accepts plastic tubs, and plastic, paper and aluminum cups including fast food cups. Rumpke is also improving sorting technology at the Cincinnati MRF to include a $1.6 addition of SamurAI robots from Machinex designed to improve recovery and further expand the list of accepted materials list.

Scrap Metals

Scrap yards, and ferrous/non-ferrous brokers are not included in this capacity analysis. Scrap processors and agents are typically responsible for establishing their own capacity and SWACO has limited influence over the practices and operations of these well-established markets. SWACO does track the volumes from this industry group. Appendix E-2 *Data from other Recycling Facilities* describes the Re-TRAC scrap processor survey and reconciliation process used to avoid duplication.

Additional Processing

Waste Management processes fibers it collects through its commercial recycling accounts and local Waste Service processes cardboard for resale at its transfer facility. Additional processers such as Greif, WestRock, and Royal Paper Stock, are also operating facilities within Franklin County which process a large amount of commercial generated materials.

Recycling Processing Capacity Analysis

Quantifying SWACO's exact current and future recycling processing capacity is challenging. Much of the potential capacity is proprietary and based on number of shifts, percentage residual in the feedstock, availability of staffing, and equipment efficiency. Current processing capacity is estimated to be approx. 100,000 tons/yr. SWACO has determined that there is ample existing capacity for recycling and diversion in Franklin County. Future capacity will be provided by the new Rumpke Waste $50M processing facility with a 150,000+ tons potential capacity.

SWACO has found having a MRF operating in the region provides convenience and infrastructure to address the gaps that exist in residential and commercial recycling. SWACO continues partnerships to work on education and outreach with the MRF to streamline communication of new accepted materials. The processing capacity of standard recyclables is sufficiently provided by the private sector. Rumpke has a recyclable processing facility in Columbus and is currently planning to build an upgraded MRF and provide the majority processing needs of comingled recyclable materials. There are numerous other recycling facilities operating with the county. SWACO is just beginning to reach out to these facilities to understand their role, needs, and opportunities for collaboration.

Composting Facility Capacity Analysis

SWACO acknowledges the gap in food waste processing is currently undergoing a competitive process evaluate a public-private partnership for building and operating and regional composting facility. A regional composting facility would enable greater competition and provide the necessary capacity to service Franklin County businesses and schools with organics diversion.

Quantifying SWACO's exact current and future organics and yard waste processing capacity is also challenging. Much of the potential capacity is proprietary. Table B-5 *Composting Facilities* outlines the 13 Class II, III, and IV facilities that accept yard waste and compostable materials from municipal collection programs, the public, and from landscaping contractors. A total annual tonnage of 277,354 includes 4,343 tons of food waste. The largest composting facility is Ohio Mulch that processes 55% of the total generated. Kurtz Brothers has multiple three facilities in Franklin County that receive approx. 30% of the remaining.

GoZero offers a comprehensive organics collection service. Acceptable materials include: fruits, vegetables, grains, pasta, baked goods, beans, coffee grounds, eggs, eggshells, dairy, cooked meat, wood, other plant and animal-based material, soiled non-coated paper/ fiber products. "BPI certified compostable" plastic products (i.e., trash can liners/bags, forks, spoons, knives, cups, bowls, plates, straws, and other service ware) are accepted with review and approval. GoZero has collection opportunities for commercial, event, and drop off/curbside collections. In addition to Kurtz Brothers and GoZero, there are five other processors of food waste in the region and with a variety of acceptable materials.

C. FUTURE OPPORTUNITIES

Potential Capital Investments – Major Facility Projects

The SWACO Executive Director and the SWACO Board will be completing a thorough cost analysis of potential capital improvements over the planning period. The analysis will include financing, material availability, community programs, and community input. A facility siting process would include community and public

comments. Further, the District may consider a phase in of some projects that may expand over the planning period to include a full-service program. Examples of this phase-in strategy could be the Composting/Organics Processing Facility and the HHW Convenience center that may be expanded over the planning period based on actual costs, volumes, and efficiencies/economies of scale.

To address the opportunities as identified in Appendix-H, Appendix O outlines the capital budget necessary to finance the new strategies and facilities including:

Organics

- Facility: Assumed in operation 2025 with startup of Residential curbside material 2026-2027
- Facility, carts, education
- Cart purchases could be $500,000 beginning in 2026

HHW/Convenience Center

- Facility: Assumed in operation 2026
- Operational expenses could grow by $1,000,000 from 2026 – 2028

New Environmental Education Center

- $2,500,000 Capital Cost with startup 2025-2026

Business Recycling

- Increased assistance and support
- $150,000 operational budget increase 2024-2025 timeframe

Composting Infrastructure & Programs

- Facility, Carts, Incentives, Education
- School Recycling
- School District-level assistance and focus on Universities
- $50,000 budget increase 2024-2025 timeframe

Grant Programs

- New Market Development Grant - $100,000 starting in 2024

D. CONCLUSIONS AND OPPORTUNITIES

To address the programming needs as identified in Appendix-H, the following action plan will be considered by the Policy Committee during the planning years. Priority details are provided in Appendix I.

Enhancements of Recycling Processing Capacity and Effectiveness

- SWACO has found having a MRF operating in the region provides convenience and infrastructure to address the gaps that exist in residential and commercial recycling. SWACO continues partnerships to work on education and outreach with the MRF to streamline communication of new accepted materials.
- The processing capacity of standard recyclables is sufficiently provided by the private sector.
- Rumpke has a recyclable processing facility in Columbus and is currently planning to build an upgraded MRF and provide the majority processing needs of comingled recyclable materials.
- There are numerous other recycling facilities operating with the county. SWACO is just beginning to reach out to these facilities to understand their role, needs, and opportunities for collaboration.
- SWACO acknowledges the gap in food waste processing is currently undergoing a competitive process evaluate a public-private partnership for building and operating and regional composting facility.
- A regional composting facility would enable greater competition and provide the necessary capacity to service Franklin County businesses and schools with organics diversion.

Enhancements of Residential and Multi-Family Recycling Collection Capacity and Effectiveness

- Assist non-subscription curbside programs 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.

Enhancements of Commercial/Institutional/Industrial Waste Reduction Programming

- Become a visible resource for the industrial sector.
- Address the needs of the industrial sector.
- Provide educational resources and technical assistance to the 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.
- Expand data collection efforts to capture data from commercial and industrial sectors.

Special Waste Streams Capacity, Efficiency, and Cost Effectiveness Enhancements

- 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.
- Continue to enhance food waste management program focused on reduction and recovery.
- Expand organics processing with the development of a new facility and an expanded education and collection system.
- Expand HHW processing with the development of a new facility and an expanded education and collection network.
- Conduct a market study to understand the economics of reuse, remanufacturing, and recycling within the District.
- Conduct multi-year, multi-season waste characterization studies.

Other Programming Enhancements

- Collaborate to address shared 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.

Appendix H with financial support identified in Appendix O represents detail the continuation and growth of virtually all existing programs. There are also provisions for new staff that will provide an increased internal capacity. Grants, Educational Institutions, and Commercial recycling priorities are maintained. There is a strong

emphasis on reduction education with new strategic initiatives focused on commercial "Universal Recycling." All programming is responsibly budgeted and focused on the clear goal of reducing reliance on the landfill.

Appendix I: Priorities, Actions, and Program Descriptions

A. CONCLUSIONS, ACTIONS, PRIORITIES

Appendix I lists the programs SWACO has identified as potential actions based upon its findings/conclusions from the Appendix H Strategic Evaluation and Analyses. Identifying potential actions and programming should not be interpreted as a commitment to implement all the programming listed in Appendix H. Appendix I is intended to establish a priority list for implementation. Ohio EPA expects that Appendix I will identify more actions than will be addressed by the District during the planning period.

SWACO's 75% Diversion Goal

SWACO diverted more than half (51%) of the waste stream materials from landfilling in 2021. However, 76% of the landfilled materials had the potential to be reused, recycled, or composted. Creative and aggressive programming to divert landfilled materials will be needed to reach SWACO's goal of 75% diversion by 2032. SWACO currently collaborates with dozens of partners committed to helping reach this goal including partners that assist in developing strategies and alternative management options for all of the recoverable materials in the waste stream.

The SWACO Board created these strategies based on programmatic needs identified in Appendices H, I and L, M and N. Strong consideration was given to modeling based on existing program enhancements and best practices. The Appendix-O budget was then designed to keep programming expenses close to the estimated annual revenue amount and still maintain progress towards the diversion goal. Generally, SWACO programming and services in the planning years include:

SWACO Programs and Services

Community Programs
- Community Consortiums & Contract Assistance
- Community Recycling Cart Initiative
- Recycle Right Educational Programing
- Engagement, Education, Presentations & Outreach
- E-Waste Program
- Annual Community Data Collection
- Research, Studies, and Pilot Projects

Grant Programs
- Community Waste Reduction Grant
- Event Waste Reduction Grant
- Special Project Grants
- Targeted Priority Grants

Communications
- Marketing and External Communications
- Educational Campaigns
- Website Management
- Social Media
- Annual Reports & Newsletters

School Program
- School Consortium & Contract Assistance
- School Recycling Resources & Champions Program
- School District Champion Grants
- School Food Waste Resources
- Presentations and Outreach

Food Waste Initiative
- Composting Infrastructure
- Awareness & Education Campaigns and Activities
- Technical Assistance & Financial Incentives
- Community and Business Engagement
- Compost Collection and Drop-off
- Research, Pilot Projects, Collaboration

Larger Existing Programs
- Household Hazardous Waste Program
- Drop-off Recycling Program
- Yard Waste Program
- Environmental Crimes Task Force

Business Program
- Waste Reduction and Diversion Resources
- Technical Assistance
- Recognition Program
- Financial incentives
- Presentations and Outreach

Outreach & Landfill Tours
- School Groups & Field Trips
- Community Groups & Organizations
- Webinars & Videos
- Presentations, Workshops, and Tabling
- Education Partnerships

Administrative
- Annual District Report & Data Collection
- Solid Waste Management Plan Management
- Strategic Partnerships
- Research
- Market Development

Appendix K, Waste Reduction and Recycling Rates, Table K-3 demonstrates that SWACO during the 2021 reference year diverted 51% of the total waste stream. While the diversion rate is above the national average, diversion in both the residential and commercial 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.

SWACO has presented in Appendix-O a thorough but responsible budget for the 2023 to 2028 planning period. Revenues projections are conservative and budget projections are prudent and consistent with the overall reduction strategy. SWACO projects that the use of the $1/ton "Allocated Dollar" for waste reduction programming will be sufficient to maintain the financial viability of the District over the 15-year planning period and ensure a responsible and sustainable fund balance. SWACO does not at this time anticipate that an increase in the $5/ton Tip Fee will be needed.

The projected budget, shown in Table O-7, was developed based on programmatic needs identified in Appendices H, I and L, M and N including modeling based on existing programs and best practices. The budget was designed to keep expenses close to the estimated annual revenue amount although SWACO intends to use its existing carryover balance to fund expenses that are above the annual revenue amount.

B. PROGRAMS

Residential Recycling Infrastructure: Curbside Recycling Services

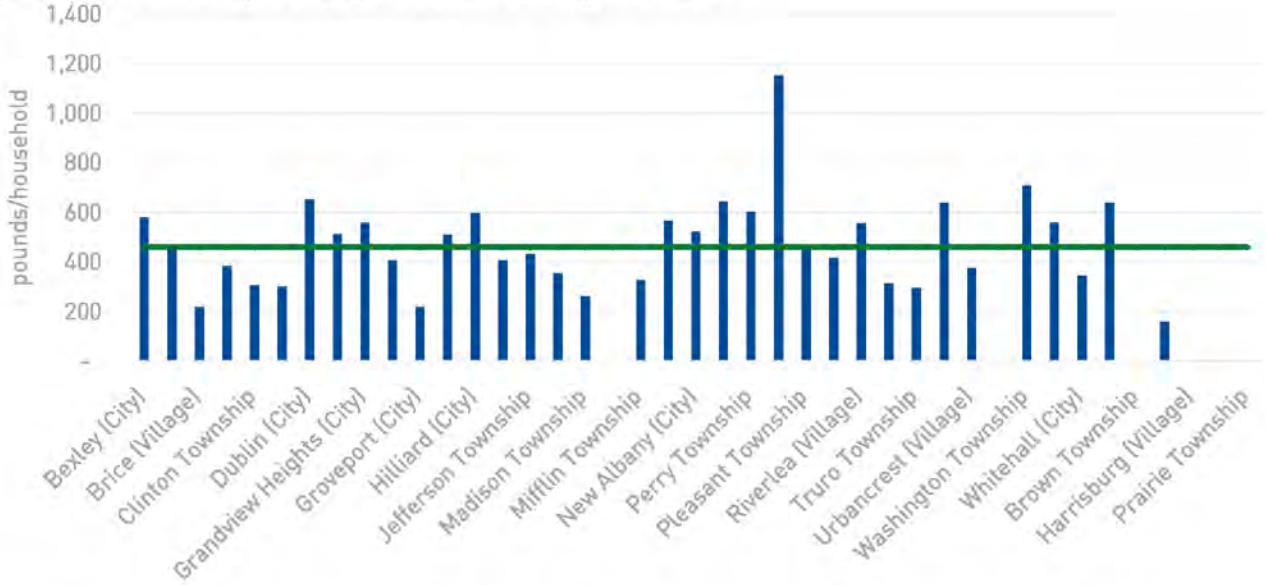
Appendix H-1 Residential Infrastructure Analysis describes a decentralized system of curbside collection programs offered by primarily by private sector service providers, with a couple of communities providing the service through municipal service. SWACO does not provide curbside recycling services. However, all 41 entities have access to curbside with 36 of the 41 of the communities in SWACO's jurisdiction have "non-subscription" curbside recycling programs, meaning that every single-family home receiving trash service also receives curbside recycling service automatically. This equates to 88% of communities, and 97% of the households in SWACO's jurisdiction. Most of these programs also provide curbside collection of yard waste. This is a slight improvement over the last ratified plan when 96% of communities had access to curbside collection. Tonnages reflect the enhanced access as shown in Table H.1, curbside recycling tonnages increased slightly since the last plan update from 64,939 to 65,796 tons; a 1.3% increase.

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.

SWACO has a goal to increase Franklin County's diversion from 50% to 75% by 2032 and a waste characterization study identified food waste and cardboard as presenting the greatest opportunities to increase Franklin County's diversion. SWACO has a variety of programs and activities that are designed to help our local businesses and communities reduce waste and divert more material, including our Recycle Right, Make a Difference educational campaign, community consortiums, a recycling cart initiative, business programming, as well as our economic development efforts.

Residential/Commercial Waste Stream

Figure H.1.2 Community Pounds per Household Recycled in 2021



SWACO completed an analysis and identified concerns to improve community participation in the curbside programs. Figure H-1.2 illustrates the established benchmark of 459 pounds per household and where communities fell relative to this benchmark.

The 2020 Recycling Partnership report estimated that the average single-family household generates 768 pounds of recyclable material per year in the United States. An estimated average pounds of recyclable material from non-subscription curbside programs is 459 pounds, while subscription programs collect 331 pounds per household. For SWACO, 22 of the 41 entities reported higher average pounds per household than the national averages determined by The Recycling Partnership. However, it is known that the data collected from local service providers varies in its accuracy, making this a difficult benchmark to evaluate. Nevertheless, SWACO will continue to evaluate local curbside programs in terms of amount of diversion, pounds per household per year, trend, and quality of material (contamination levels). This will involve the continued collection of this data from the haulers and communities, continual work with the service providers to improve the accuracy of the data, and collaboration with the recycling processor to determine contamination levels, and potentially field research such as cart-auditing and cart tagging.

To continue to encourage curbside recycling, SWACO will continue to offer contract assistance and inviting them to participate in a Community Solid Waste and Recycling Consortium (SWACO's Community Consortium program). A Community Consortium is a group of communities that agree to bid out for service together to increase negotiating power to reduce costs when contracting for solid waste, recycling, and yard waste collection services. In 2021, twenty-four communities were participating in one of three community consortiums. A total of 31 of the 41 communities participate in some form of contract assistance from SWACO.

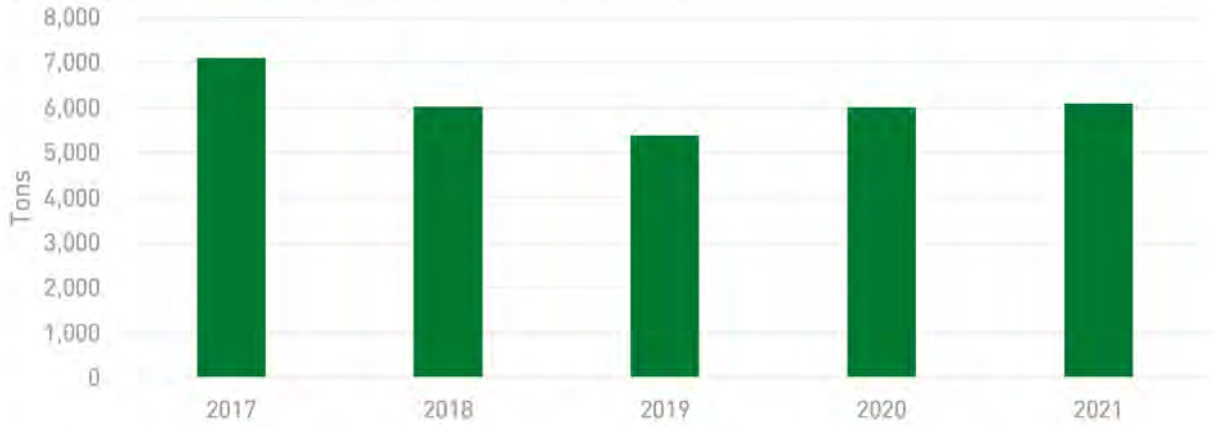
Residential Recycling Infrastructure: Recycling Drop-off

SWACO's Recycling Drop-Off Program is essential for assisting residents without curbside service (such as multi-family housing) and additional material or overflow from curbside recycling programs. In 2021, SWACO provided all drop-off containers and hauling services for approximately 65 recycling drop-off locations.

Participation/Performance

Recycling tonnages reported historically are shown below.

Figure H.1.6 Historical Trend for Drop-off Recycling Tonnages



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 are relatively stable. 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, and notably the 2016/2017 transfer of a large number of locations that were located at Columbus Public Schools over to the schools to provide recycling exclusively to the schools, eliminating them as public drop-off locations. Part of the decrease occurred in 2019 but the programs have increased including the pandemic COVID-19 showing an increase in 2020 and 2021 Interestingly, in 2022 we saw a drop back to the 2019 levels, reinforcing the theory that this was a bump from the fact that so many people were working and spending more time at home during the pandemic, increasing their generation of residential recyclable materials. This follows a similar trend in the curbside recycling tonnages from 2019 through 2021. Some of the increase may also be attributed to the Recycle Right campaign.

Estimated recovery pounds per household was calculated by dividing total pounds recovered by total number of households and population in Franklin County. This calculation is rough and is meant for demonstration purposes. This estimate demonstrates the drop-off program was recovering approximately 23.4 pounds per household in 2021 compared to 373 pounds per household for curbside. Nevertheless, the drop-off program diverted over 6,000 tons of recyclables in 2021, which is more material than the curbside recycling programs of Worthington and Upper Arlington combined diverted in 2021, both of which are high performing programs. The 2021 drop-off program tonnage equates to over 1,000,000 lbs. of recyclables diverted each month, which is significant.

Individualized drop-off site location performance is difficult to analyze due to challenges around quantifying data and usage at individual locations. The drop-off containers and collection vehicles are not equipped with technology to capture the materials recovered from each individual location. Each location is estimated based on pick up and number of bins at each site.

Importantly, 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 (although anecdotally it seems clear that a lot of multi-family households rely on these locations).

SWACO evaluates this program continually in terms of the number of locations, areas lacking any locations, amount of material collected, routing efficiency, contamination/open dumping at locations, use of new technologies, and costs.

Although drop-off recycling is far less effective than curbside, the drop off program remains a critical strategy to fill the gap between curbside programs and areas which do not have this type of access, such as multi-family housing and small commercial businesses.

Multi-family Diversion Assistance

The drop off program is employed currently to service many of the multi-family households in the district. These housing units often lack convenient recycling opportunities other than the District sponsored drop off program. Currently, there is little comprehensive, district-wide data on the practices, barriers, and opportunities to improve recycling in multi-family households.

Specifically, although the District has attempted to strategically provide drop off containers at apartment or condominium complexes or in proximity purposely targeting multi-family households, it is still uncertain how many of these households use the bins.

In 2021, working closely with the City of Columbus and The Recycling Partnership (a national non-profit organization), SWACO conducted its first limited pilot project focused on multi-family recycling to determine the costs, impacts, and barriers to multi-family recycling, as well as to develop an educational toolkit that can be used to educate multi-family residents on proper recycling habits.

During the pilot numerous barriers were identified, including costs, lack of adequate space to place recycling dumpsters, and lack of corporate approval to participate in the pilot (although often *local* property managers were interested in participating).

During the pilot, a resident education toolkit was developed, including: a tote bag for the resident to use to transport materials from their unit to the recycling dumpster; a "Cling" showing residents what can and cannot be recycled; and an instructional document describing the program to the resident and explaining how to participate. A property manager toolkit was also developed, including directional signage directing residents to the recycling dumpsters, lobby posters promoting the program, and other educational signage supporting the recycling program.

Phase two of the project will begin in 2023, which will be focused on properties outside of the City of Columbus, and will provide valuable information to continue to build out this program.

The District recognizes that additional data is needed to clarify existing practices, barriers, and opportunities for multi-family units. 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 being diverted.

Summary Multi-family Diversion Assistance

SWACO will continue to build out the multi-family program, which may include:

- Financial incentives to support program start-up
- Further evaluation of the current multi-family recycling services.
- Engagement with development and architecture organizations to encourage development of new multifamily complexes with resident recycling in mind.
- Engagement with local communities and planning and zoning departments to advocate for policies to facilitate recycling at multifamily complexes.
- Other tactics to research, support, and incentivize recycling in multi-family complexes

Commercial/Institutional Sector Technical and Diversion Assistance

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.

Commercial/Institutional waste disposal can be difficult to assess separately because it is not separately identified at the landfill. However, SWACO estimates that about 60% of the material disposed in the landfill is generated from the commercial sector. To better understand the composition and characteristics of the materials disposed of in SWACO's waste stream, a waste characterization study was conducted in 2019 which determined that approximately 42% of the total commercial waste stream, or 290,000 tons a year, was recoverable through programs, services, and processing that is available today. Over 20% of commercial material disposed was corrugated cardboard and recyclable paper alone. Over 14% was food waste. It is clear that there is a tremendous opportunity to divert more commercial/institutional waste from the landfill
Past programs targeted toward the commercial sector include Solid Waste Assessments and Business. These programs have been focused on education and information sharing. While these programs have had an impact on raising awareness, they have not always been as effective at capturing more recycling from this sector. Establishing innovative programs that help to alleviate current barriers may have the greatest impact on increasing overall diversion.

In 2020 SWACO hired a full-time business recycling specialist, and in 2021 SWACO launched an online business recycling toolkit designed to help businesses design and launch successful recycling programs. In 2022 SWACO launched the first phase of a business recycling incentive program, which allows businesses to purchase recycling containers at significantly discounted prices. In 2023 a similar incentive program was launched for business recycling services.

Summary Commercial Programming

SWACO will implement business recycling programs that include:

- Direct technical assistance to assist to help businesses create new recycling programs, improve existing programs, and find solutions for hard to recycle materials.
- Recycling and waste diversion education through activities such as: Recycling at Work webinars, business focused newsletters, and public speaking at events such as Chambers of Commerce meetings
- Promotion of the Recycling Toolkit and additional technical assistance documents.
- Implementation of the Business Recycling Champions incentive program and development of additional incentive programs.
- Recognition of area business recycling success stories through case studies, business profiles, social media, and other methods.

Additional new programs may include:

- Grants to businesses for equipment such as recycling balers and compactors.
- Grants and pilot testing of new technologies that have the potential to divert additional materials.

- Assisting with reusing or recycling materials through facilitating solutions, contracting, storage of materials, or de-packaging or deconstruction of materials.
- Research and pilot projects focused on targeted industries or materials.
- Creation of other programs designed to divert business generated materials from the landfill.

Summary: School Recycling Programs

SWACO will provide a wide range of programs oriented at schools including:

- The School Consortium program, a collaborative bidding program where school districts in Franklin County cooperatively bid for trash and recycling services, leveraging their buying power to receive high-quality, low-cost recycling services.
- A how-to guide to help schools implement successful recycling programs.
- The School Recycling Champions Funding and Recognition program, which provides financial assistance to purchase indoor recycling containers to individual schools that follow SWACO best practices guide. The program also provides recognition to schools that complete the program.
- The School District Champions Funding and Recognition program, which provides financial assistance to purchase indoor recycling containers to school districts that work with SWACO to implement best practices in their school districts. The program also provides recognition to schools that complete the program.
- Teacher lesson plans and school activities to help teachers teach the importance of recycling.
- Web-based activities for at home learners.
- Resources on preventing food waste, including teacher lesson plans, student activities, and guidance on how to start share tables in school cafeterias.

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 internal environmental goals. For instance, these major employers have adopted reduction and recycling corporate policies:

Whirlpool Corporation

90% of sites achieved Zero Waste to Landfill Gold or Platinum in 2021

Owens Corning

Reduce by 50% by improving efficiency and process design. Repurpose or recycle remaining waste, also recycling waste back into current processes wherever possible. Zero Waste-to-Landfill

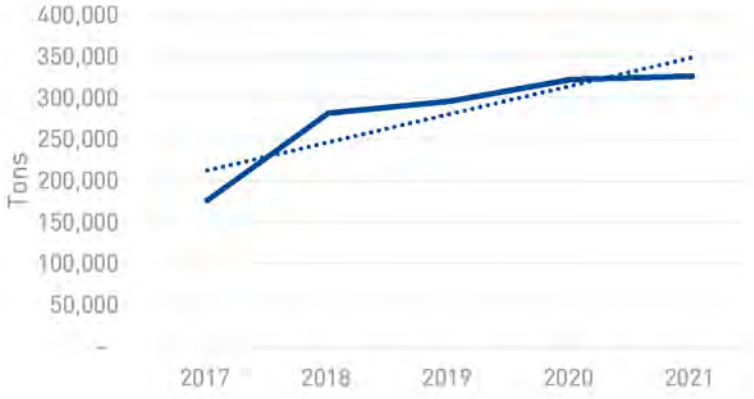
Anheuser-Busch

By 2025, 100% of packaging will be made from majority recycled content or returnable.

The Ohio EPA's Plan Format v4.1 does not require an industrial recycling goal during the reference year. Further, Appendix F Industrial Recovery Data identifies a 90% industrial diversion rate in 2021 with a historical positive trend.

SWACO does not have a dedicated program exclusively for industrial entities, but business resources are available and applicable to industrial entities. SWACO employs a Business Recycling Administrator that is also focused on industrial accounts. Although the recovery rate for industry is over 90%, SWACO expects to create expanded outreach and programming to this sector. Outreach strategies, workshops, webinars recognition programs, and business roundtables will be considered with topics such as best practice, contract assistance, and information on local/national trends.

Figure F-1 Historical Recycling Analysis: Industrial



As described in App. H Section, The District provides three educational and program opportunities to the industrial sector to satisfy the requirements of Goal 5 including:

1. Business resources (Tookit, Waste Assessment tool, etc.) are available and applicable to industrial entities.
2. Business Recycling Administrator is available to provide technical assistance to these entities.
3. Promotion of Ohio EPA's Material Marketplace and assistance from JobsOhio

The District will consider a future targeted outreach campaign aimed at manufacturing industries in Franklin County and will inform them of relevant resources and services to include:

- 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
- 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
- Convene meetings and special events, such as business roundtables, conferences, and symposiums, which cover topics including best practice, contract assistance, and information on local/national trends.
- Providing additional educational collateral materials describing programs suitable to this audience.
- Develop and promote case studies on examples of best practice in waste reduction and diversion specific to this sector

Restricted/Difficult to Manage and 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, scrap tires, 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.

SWACO diverted more than half (51%) of the waste stream materials from landfilling during the 2021 planning year. However, 76% of the landfilled materials had the potential to be reused, recycled, or composted which includes special waste streams. SWACO has been successful in diverting significant tonnages of special waste but will focus on strategies to further improve diversion and control costs.

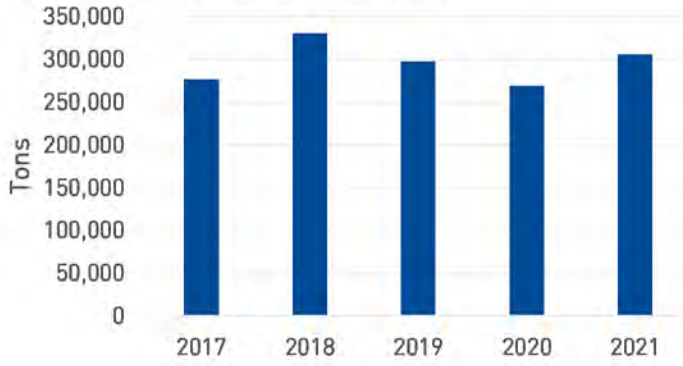
Although not required by the state to collect all these special waste materials, SWACO considers these materials an important part of their commitment to responsibly managing the waste stream. SWACO has strategies in place

to manage these waste streams that are handled through a combination of retailer take-back, product stewardship, and SWACO funded programs.

Yard Waste

SWACO's Yard Waste Management Program is well established and successful. Integral to this program is the fact that virtually all of the communities that have curbside recycling also receive weekly pick-up of yard waste as part of their service contracts (33 out of the 36 curbside recycling communities), and even those without weekly service may provide seasonal leaf collection. SWACO's involvement in this program extends beyond the Consortiums and bidding assistance to communities. SWACO also contracts with local yard waste facilities so that residential yard waste is accepted free of charge, either through curbside collection or through residents taking their yard-waste material directly to the facilities.

Figure H-4.3 Historical Yard Waste Recycling



The 2019 waste composition study report reinforces the success of the program by demonstrating that only 3.7% of material landfilled is yard waste. SWACO also dedicates extensive resources to educating residents about properly diverting their yard waste through their curbside collection and use of these facilities. Continued education about the program and how to reduce yard waste contamination will help to ensure the program's continued success. SWACO also promotes and educates residents about backyard composting, another way that they can manage their yard waste in an environmentally beneficial way. SWACO will continue to support the diversion of yard waste through contractual arrangements, public education, contracting assistance, and other support services.

Household Hazardous Waste (HHW)

Household Hazardous Waste (HHW) includes hazardous materials generated by residents such as paint, solvents, gasoline and automobile liquids (oil, antifreeze, etc.), DIY home renovation products such as adhesives and driveway sealants, household batteries, fertilizer, pool chemicals, household cleaners, and flammable, toxic, reactive and corrosive materials, and other similar materials.

SWACO implements several strategies for managing HHW.

Currently, SWACO funds a permanent HHW facility that is open for limited hours on during the week for residents to drop-off HHW materials. The Permanent Collection Site has been highly successful with diversion of about 300 tons during the 2021 reference year. SWACO also funds several mobile collection events annually. In 2021 SWACO sponsored three mobile collection events that serviced over 2,400 vehicles and was successful at diverting a total of 3.2 tons of lead-acid batteries and 53 tons of mixed HHW.

SWACO contracts with Environmental Enterprises Incorporated (EEI) to manage the full-time Household Hazardous Waste Center located on 8th Ave. in Columbus. SWACO also partners with local communities to offer several mobile collection events each year. Collection events are advertised and promoted through social media, paid advertising, newsletters, and the SWACO website. Information regarding take-back options for certain materials is available on the website.

SWACO also promotes the use of less hazardous materials and more environmentally friendly products by residents, and promotes retail take-back options available for certain materials on SWACO's RecycleRight.org website.

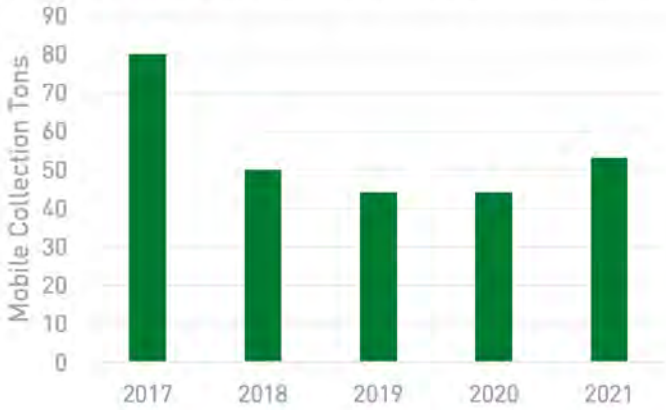
The HHW program is one of the most requested services by residents and communities. This program is also the highest cost per ton out of the programs offered by SWACO, and has one of the highest overall costs of any SWACO programs.

Figure H-6.2 Historical Permanent HHW Drop Off Tons

Improperly disposed HHW poses a serious environmental risk. Education on using less-harmful ingredients and more environmentally friendly products is included in educational materials available on the webpage and social media outlets.

Because HHW management is the highest cost per ton out of the programs offered by SWACO, and highest overall program costs, evaluation of this program is continuous, striving to find a balance between the community's interests, convenience, diversion impacts, and financial sustainability.

Figure H-6.3 Historical Mobile HHW Drop Off Collection Tons



In 2021 SWACO began a formal evaluation of the HHW program and the possibility of establishing a "Convenience Center" that would be available to all Franklin County residents that could potentially accept a wide variety of recyclable materials beyond HHW. For instance, a Convenience Center might be able to accept a mix of materials including traditional recyclables, yard waste, scrap tires, E-waste, appliances, scrap tires, polystyrene, usable furniture, and textiles, in addition to HHW.

This evaluation will continue, with the possibility of establishing a Convenience Center facility as early as the 2025 – 2026 timeframe. SWACO is also actively exploring the possibility of establishing smaller, community-scale convenience center type collection opportunities, either independently or in partnership with our local communities. These locations would likely accept a smaller number of items than a full-scale convenience center facility. If this approach is pursued, SWACO could be involved in funding or establishing these locations, coordination with local communities on materials accepted, contracting for collection or processing of materials, providing grants for equipment or other start-up needs, promotion of the facilities, research, cost-modeling, design, or other activities necessary to establish the collection locations.

Scrap Tires

Scrap tires continue to be a challenging waste stream despite the fact that residents and businesses have extensive options available to manage scrap tires correctly. SWACO promotes residents' use of the take-back services provided by all tire shops and automotive repair shops as the easiest way to assure that scrap tires are properly managed and recycled. Liberty Tire Recycling is also located within the District and is available to accept tires from residents, tire shops, and auto repair businesses. Scrap tires are also accepted at the SWACO transfer facilities and landfill. Nevertheless, the small-scale illegal dumping of tires remains a persistent challenge. This illegal dumping, while difficult to eliminate, is addressed by the Franklin County Sheriff's Office, primarily through the Environmental Crimes Task Force (ECTF), the City of Columbus Refuse Department, and other local law enforcement agencies.

Electronic Waste

Electronic waste (e-waste) continues to be 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 consumer demand for new devices remains constant. SWACO provides an inventory of the numerous e-waste outlets and retailers that offer take-back programs on our RecycleRight.org web site. SWACO has also established a contract for the collection and processing of e-waste, and all 41 political subdivisions, schools within the County, and Franklin County agencies can use this program to divert e-waste generated within their facilities or by hosting residential collection. SWACO can also provide periodic residential collection events utilizing this contract.

Figure H-6.4 Historical Electronic Drop Off Collection Tons

In 2021, SWACO partnered with TCL (television manufacturer) and MRM (a TV recycling trade organization) to sponsor an E-waste collection event that resulted in 6,500 lbs. of e-waste being collected. SWACO also partnered with the County Auditor's office on an e-waste collection event that resulted in 6,543 lbs. of e-waste collected.

Like HHW management, recovery of certain types of E-waste (CRT and other types of monitors, in particular) can represent a significant cost per ton to manage. The amount of E-waste generated also continues to grow, as the cost of certain items, such as televisions, has declined, making it an easier decision for many consumers to replace a perfectly functioning item with a newer version of the same thing. The consumer demand for the newest versions of other items, such as cell phones, appears insatiable, despite the costs. Thankfully more manufacturer/retailer take-back opportunities exist for some of these items, such as cell phones. Further evaluation of this program will be needed to address the community's interests, increase diversion impacts and convenience, and to financially sustain the program.

Lead-acid Batteries

Lead-acid batteries are accepted at SWACOs permanent HHW collection facility and during mobile HHW collection events. SWACO also promotes the use of auto repair and auto parts stores on our RecycleRight.org web site for recycling lead-acid batteries. Given the long-standing and extensive take-back options for residents, SWACO does not anticipate any significant changes to the programming related to lead-acid batteries.

Appliances

Appliances, denoted in Appendix E as white goods, have a strong recycling infrastructure in the district. 17,975 tons of appliances were recovered in 2021. Residents primarily rely on curbside collection arranged with their local hauler. Frequently, local 'pickers' will remove scrap metal from the curb prior to the weekly collection by the hauler. Many appliance stores will also remove old appliances for recycling or reuse at no charge upon delivery of a new unit. Scrap metal has experienced record value, and the markets remain strong. SWACO promotes reuse and recycling of appliances with a list of 14 locations that still accept appliances. Appliances are also accepted at the FCSL for a charge of $20 for each appliance. However, the Freon must be removed from the appliance by a licensed Freon recycler. The appliance must be tagged by the recycler as "Freon free."

Pharmaceuticals

SWACO provides Franklin County residents with information about and access to safe disposal options for expired, unused or unwanted prescription drugs. Proper disposal is important because it helps protect the environment, our groundwater, our loved ones, and our communities. Education material emphasized the importance of disposing of unneeded medicine to prevent harm to children, pets, teens, and adults if accidentally ingested or misused.

SWACO also plays an important role in helping to identify and promote special diversion needs that arise within the District. One such example is the promotion of the DEA National Prescription Drug Take-Back Days, held in April and October each year. Each year numerous communities in Franklin County participate in the event to host pharmaceutical collection events. These events give people a safe, convenient, and responsible way to dispose of unused or expired prescription drugs. SWACO promoted the 2021 National Prescription Drug Take Back Day which was successful at collecting 5,299 lbs. at the spring and 2.6 tons the fall event.

Within the last few years there has also been a significant increase in the number of pharmacies providing permanent take-back collection opportunities. There are now 38 permanent pharmacy take-back locations to safely dispose of prescription drugs within the District, and an additional 10 police department hosted locations. SWACO promotes all of these available take-back options on our website.

As an organization responsible for our community's waste management, SWACO is committed to spreading the message about the safe disposal of prescription opioids and other medicines. Holding on to leftover medicine is a dangerous practice, as nearly half of the young people who inject heroin start by misusing prescription pain medicine. The website Don't Live in Denial, Ohio offers details on avoiding harm from illicit opioids.

Other Material Specific Programs

Food Waste

Food waste is the largest single material type that is received at the landfill, representing about 15% of the total material received, or nearly 170,000 tons each year. This equates to about 1,000,000 pounds of food waste received at the landfill every day. It is the largest component of disposed waste for both the residential and commercial sectors. Limited outlets for processing and handling food waste currently exist within the District.

SWACO conducted an analysis of the local waste stream and identified that nearly 1 million pounds of food waste arrived at the SWACO landfill each day, making food the single largest source of landfill material. Landfilling this material alone cost Franklin County residents and businesses just over 6 million dollars, but the total economic loss is even greater. Based on existing models, the systemic economic loss from food waste generated in Franklin County is estimated at $106 million (http://www.fao.org/policy-support/policy-themes/food-loss-food-waste/en/. Much of this waste food could have been prevented or perhaps rescued and donated. As a result of this

analysis, SWACO determined that food waste recovery would be an important sustainable program to meet the aggressive diversion goals.

SWACO formed the Central Ohio Food Waste Initiative (COFWI) in 2019 to bring together a diverse set of organizations to help build a unified approach towards reducing food waste and leveraging it to benefit our region. COFWI takes a wholistic approach to combat food waste by creating solutions geared towards food waste prevention, rescuing, and redistributing edible food, and recycling food through composting and other technologies. The Food Waste Action Plan was issued in 2020 as the result of a series of collaborative engagements with partnering organizations who see value in reducing food waste in the central Ohio region. Based on those engagements and the input gathered, the document serves as a pathway of opportunities and solutions for the regional community to coalesce and pursue. The intent of the report was to provide a living framework for collaboratively advancing the front lines on food waste, which requires a flexible and adaptive approach.

To support the solutions identified in the Food Waste Action Plan, SWACO launched the Save More Than Food public education campaign and launched the savemorethanfood.org website to stand as a permanent resource for residents, schools, and businesses on how to reduce food waste. This includes tools and information to help families stretch their food as far as possible to help save money, as well as conserve resources, including strategies for preventing food waste such as planning, reinventing leftovers, safely storing foods, and composting food scraps.

SWACO also began prioritizing grant funding towards food waste diversion, and funded a number of successful projects through grants and partnership agreements, including:

These partnerships include:

- Composting in Hilliard City Schools cafeterias
- Food waste education and composting pilot projects in Columbus City Schools
- Franklin County Soil and Water Conservation District to provide home composting systems at a reduced cost to residents who also participate in composting training.
- Wexner Medical Center that piloted the use of Winnow, a technology that uses AI to evaluate food waste and provide feedback on methods for reducing the amount of food waste generated.
- Community-based food waste drop-off locations

SWACO will continue to prioritize food waste focused grant projects under this plan.

One of the biggest barriers preventing expansion of food waste diversion programs is the lack of a compost facility capable of accepting food waste within SWACO's jurisdiction. In 2020 SWACO completed a study to determine the feasibility and technical requirements of establishing a regional composting facility through a public-private partnership. In 2022 SWACO completed a public process to identify qualified companies that could design and operate such a facility. The evaluation of the feasibility of establishing such a facility will continue into this planning period, with the potential of establishing such a facility to support the expansion of food waste diversion in the District.

While it cannot be definitively determined at this time whether such a facility will be constructed during the planning period, food waste and the diversion of organics will continue to be a high priority for SWACO. In particular, finding a solution for the lack of local composting capacity will be a high priority, along with continued development of supporting programs such as expanded collection options, organic carts for curbside collection, technical assistance, financial incentives and education programs.

Political Signs

SWACO started a political sign collection program in 2017. All paper and plastic signs and accompanying metal stands are accepted free of charge at the Athletic Complex in Columbus on the Saturday after the election. An average of 1.75 tons of political sign material was collected for 2020 and 2021. Candidates are encouraged to pick up their own campaign signs for future reuse. Grove City held its first collection event in 2022 and Bexley, Upper Arlington, and New Albany are also partnering with SWACO for future events. For residents who can't make any of the central Ohio events, SWACO instructs households that paper signs can go in the curbside recycling, plastic ones go to film recyclers, and the metal stands themselves go to scrap metal recyclers.

Special Program Needs

Ohio Revised Code Section 3734.57(G) gives Districts the authority to fund activities that are not related to achieving the goals of the state solid waste management plan, or other programs that are not addressed in either the state plan or law.

Areas of "Special Program Needs" programming currently provided by SWACO include:

- Environmental Crimes Task Force
- Grants to Communities
- Innovation and Market Development Activities
- Special Projects and Reports

Environmental Crimes Task Force

Established in 1992, the Environmental Crimes Task Force of Central Ohio (ECTF) is Franklin County's multi-governmental, anti-littering and illegal dumping collaborative designed to identify, investigate, and prosecute environmental crimes. In addition, The ECTF works to educate Franklin County residents about how to dispose of their unwanted materials properly and safely – such as hazardous materials, yard waste and construction debris. The ECTF allows residents to report environmental crimes and support the successful investigation and prosecution of those crimes. The contracts are with the Franklin County Sheriff's Dept. and Prosecutor's Office. The program has been successful at accomplishing the established goals of protecting the environmental health and safety of central Ohio residents and communities.

Grants

In 2021, SWACO awarded $215,055 in Waste Reduction Grants to 15 communities and awarded $7,314 in Event Waste Reduction Grants to 3 organizations as outlined in Appendix H-5. These 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 gone through an overhaul to improve its performance, impacts, measurement, and criteria for eligible participation. Currently SWACO offers Community Waste Reduction Grants, Event Waste Reduction Grants, Special Project Grants, and has recently initiated Targeted Priority Grants, which are designed to target a priority waste stream or a priority organizational type. For instance, SWACO has recently been working closely with the Ohio Hospital Association and representatives of the 4 hospital systems in our jurisdiction to identify challenging waste streams and provide grants to implement pilot projects to address these waste streams. These grants will be available for a limited amount of time and are designed to support pilot projects that can be expanded and replicated in the future. SWACO will continue to offer a variety of grant opportunities to communities, governmental entities, non-profit organizations, and potentially private businesses.

Innovation

In October 2020, SWACO partnered with Rev1 Ventures, a Columbus seed-funding venture capital firm, to identify innovative solutions to Central Ohio's waste stream issues. Working with Rev1, SWACO has identified three focus areas to try and reduce the amount of food and other waste entering our landfill:

- Prevention: Reduction methods that reduce the volume of waste
- Rescue: Redistributing excess food to feed people
- Recycling: Repurposing food waste as energy, agricultural supplements, and other products.

SWACO and Rev1 have provided technical assistance and guidance to 8 local start-ups and/or social enterprises on how to grow or expand their business. SWACO's partnership with Rev1 allows us to connect with these startups, entrepreneurs and other innovators who can reduce or divert food and other waste through reuse, recycling, and composting. In 2022, the partnership with Rev1 will evolve to focus on textile waste and recycling and will help SWACO continue to build a more sustainable future for our region as it grows.

Economic Development

The market for recycled materials is strong, and so are the Central Ohio industries that rely on recycled materials. The Central Ohio region is home to nearly 400 businesses that employ some 5,000 people, generating $1 billion in annual revenue. The products those businesses create from recycled materials often find new life in other industries in Ohio. As an example, 100% of our curbside recyclables stay in the United States, while 95% stay in the Midwest and 80% become new products in Ohio. It's all part of the circular economy, benefiting businesses, their employees, and our environment.

Other examples of the circular economy include Advanced Drainage Systems, Inc, in Hilliard which is North America's largest recycler of HDPE plastic. ADS recycled 674 million pounds of HDPE plastic in 2021, transforming milk jugs and shampoo bottles into pipes and holding chambers that help manage stormwater runoff in cities and neighborhoods around our state. Pratt Paper Mill in Wapakoneta turns used household paper into new paper products. Aluminum cans get new life at Franklin Iron in Dayton, where old cans become new ones in less than 90 days, supporting the needs of Ohio's beverages industry. And at PureCycle in Ironton, household plastic becomes near-virgin resin that other Ohio businesses, including Proctor and Gamble, rely on to bottle soaps and laundry detergents.

Economy Business Park

Our Green Economy Business Park is a part of our vision to build a more economically and environmentally sustainable future for our region. SWACO has proposed building this business park on 350 acres of SWACO-owned land. The goal is to bring together the recycled materials supply chain through research, technology, and advanced manufacturing through a capital investment of $350 million to $500 million. Models and projections show that the site, once developed, could create between 2,000 and 3,500 manufacturing jobs, producing between $1.6 million and $4.2 million in local tax revenues for the local community. If approved, the Green Economy Business Park will cement the Central Ohio region as an economic leader in the emerging market for recyclables and sustainable manufacturing.

Carbon Emissions Management Plan Update

A circular economy and investments in waste diversion and recycling are only part of the path to a sustainable future. SWACO and its partners in the Franklin County community are taking critical steps to reduce our region's collective carbon footprint thereby limiting our impact on climate change. SWACO has adopted a comprehensive strategy, the Carbon Emissions Management Plan, to reduce carbon emissions 64% by 2032. The goal is aligned with the International Paris Accord, which aims to limit global average temperature increases to 1.5°C. SWACO's plan addresses landfill gases, vehicle fleet and equipment, energy use and waste-management practices at all our facilities.

Solid Waste Management Plan Update

SWACO continues to contract with consulting firms to support program planning and implementation. SWACO has begun to update the District Solid Waste Management Plan in 2022 and anticipates continuing contracts to support plan development.

Data Collection and Waste Characterization Studies

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 processes 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.

C. CONCLUSIONS AND 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 in the conclusions and findings.

SWACO is committed to the Strategic Planning Goal of diverting 75 percent of waste from the landfill by the end of 2032. Achieving that goal will require the processing capacity to ensure a robust legitimate circular economy, which transforms old materials into new products that preserve and protect our environment. Note that the District does provide proof in Appendices A, B, C, D and F of maintaining more than a 25% residential/commercial reduction rate to meet the state Compliance Goal.

As noted in Appendix K, SWACO will take a conservative approach in this updated plan version. SWACO is not yet prepared to commit our communities financially and programmatically to a greater 75% goal without additional research and financial planning that will occur during the first five years of the planning period.

Further research, planning and detailed financial projections will guide SWACO towards providing the additional capacity and programming to achieve the 75% Strategic Goal. Enhanced strategies will be detailed in each five-year plan rewrite and future Appendix H-9 Financial Analysis will be amended accordingly.

Important Takeaways

- Continuation & Growth of Virtually all Existing Programs
    - New staff (increased internal capacity)
    - Grants, Educational Institutions, Commercial recycling priorities
    - Continued Emphasis on Education
- New Strategic Initiatives
    - Composting Infrastructure & Programs
    - Commercial Recycling - Incentives, more staff, "Universal Recycling"
    - Education Center
    - HHW and Convenience Centers Continued Evaluation w/ Clear Goal of Expansion
    - Infrastructure and Market Support for Hard to Recycle materials
- No Generation Fee Increase – Continued use of the "Allocated Dollar"

Areas of Planned Program Growth

- Organics
    - Facility: Assumed in operation 2025; Residential curbside material 2026-2027
    - Facility, carts, education

    - Cart purchases $250,000/yr. 2025 to 2030
    - Columbus cart purchased $250,000 to $500,000/yr. 2027-2033
- HHW/Convenience Center
    - Facility: Assumed in operation 2026
    - Operational expenses increase $1,000,000 from 2026 – 2028
- New Education Center
    - $2,500,000 Capital Cost 2025-2026
- Business Recycling
    - Increased assistance and support
    - $150,000 operational budget increase 2024-2025 timeframe
- School Recycling
    - School District-level assistance and focus on universities
    - $50,000 budget increase 2024-2025 timeframe
- Grant Programs
    - New Market Development Grant - $100,000 starting in 2024
- Team of 13 FTE's
    - 9 dedicated to Programs
    - Includes 2 new FTE's starting in 2023 (Schools and Commercial Businesses)
    - Funding for 4 FTE's is split between Programs and Operations

Enhancements of Recycling Processing Capacity and Effectiveness

- SWACO has found having a MRF operating in the region provides convenience and infrastructure to address the gaps that exist in residential and commercial recycling. SWACO continues partnerships to work on education and outreach with the MRF to streamline communication of new accepted materials.
- The processing capacity of standard recyclables is sufficiently provided by the private sector.
- Rumpke has a recyclable processing facility in Columbus and is currently planning to build an upgraded MRF and provide the majority processing needs of comingled recyclable materials.
- There are numerous other recycling facilities operating within the county. SWACO is just beginning to reach out to these facilities to understand their role, needs, and opportunities for collaboration.
- SWACO acknowledges the gap in food waste processing is currently undergoing a competitive process evaluate a public-private partnership for building and operating and regional composting facility.
- A regional composting facility would enable greater competition and provide the necessary capacity to service Franklin County businesses and schools with organics diversion.

Enhancements of Residential and Multi-Family Recycling Collection Capacity and Effectiveness

- Assist non-subscription curbside programs 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.

Enhancements of Commercial/Institutional/Industrial Waste Reduction Programming

- Become a visible resource for the industrial sector.
- Address the needs of the industrial sector.
- Provide educational resources and technical assistance to the 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.
- Expand data collection efforts to capture data from commercial and industrial sectors.

Special Waste Streams Capacity, Efficiency, and Cost Effectiveness Enhancements

- 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.
- Continue to enhance food waste management program focused on reduction and recovery.
- Expand organics processing with the development of a new facility and an expanded education and collection system.
- Expand HHW processing with the development of a new facility and an expanded education and collection network.
- Conduct a market study to understand the economics of reuse, remanufacturing, and recycling within the District.
- Conduct multi-year, multi-season waste characterization studies.

Other Programming Enhancements

- Collaborate to address shared 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.

Appendix O represents a budget that provides for the continuation and growth of virtually all existing programs. There are also provisions for new staff that will provide an increased internal capacity. Grants, Educational Institutions, and Commercial recycling priorities are maintained. There is a strong emphasis on reduction education with new strategic initiatives focused on "Universal Recycling." All programming is responsibly budgeted and focused on the clear goal of reducing reliance on the landfill.

Potential Capital Investments – Major Facility Projects

Organics

- Facility: Assumed in operation 2025 with startup of Residential curbside material 2026-2027
- Facility, carts, education
- Cart purchases could be $500,000 beginning in 2026

HHW/Convenience Center

- Facility: Assumed in operation 2026
- Operational expenses could grow by $1,000,000 from 2026 – 2028

New Environmental Education Center

- $2,500,000 Capital Cost with startup 2025-2026

Business Recycling

- Increased assistance and support
- $150,000 operational budget increase 2024-2025 timeframe

Composting Infrastructure & Programs

- Facility, Carts, Incentives, Education
- School Recycling
- School District-level assistance and focus on Universities
- $50,000 budget increase 2024-2025 timeframe

Grant Programs

- New Market Development Grant - $100,000 starting in 2024

SWACO issued a 2021 Impact Report that highlighted new recycling achievements and future plans for continuous improvements. https://swacoimpactreport.org/ In this report, SWACO commits to continuing sustainable expansion of recycling infrastructure within Central Ohio. To fully meet SWACO's desires for greater waste diversion, significant additional capacity for recyclables and organics processing is required. As Franklin County's population continues to grow and the economy remains strong, the amount of waste being generated both on a community and individual level has increased. Materials being sent to the landfill have remained relatively the same and materials being reused, recycled or composted continues to increase. Franklin County's diversion rate (50%) now exceeds the national average (34%).

SWACO is currently undergoing a competitive process to evaluate a public-private partnership for building and operating and regional composting facilities. A regional composting facility would enable greater competition and provide the necessary capacity to service District businesses and schools with organics diversion. Preliminary costs and capacities are included in the projected capital budget outlined above. Further details are available in Appendix O and Chapter 6.

SWACO contracted with RRS in 2019 to conduct a Waste Characterization Study of landfilled materials. The study found that a high percentage of landfill materials could have been diverted. More than three-fourths (76%) of landfilled materials had the potential to be reused, recycled, or composted and together have an estimated value of $21 million. The study also found that of those discarded materials, the items presenting the biggest opportunities for increasing diversion were food scraps and corrugated cardboard. Future plans will focus on providing assured processing capacity for the Top 10 items most commonly found in Franklin County's waste stream:

- Food Scraps – 15%
- Corrugated Cardboard – 10%
- Other Compostable Items & Fiber – 9%
- Magazines, Newspaper, Office, and other paper – 8%
- Bulky & Durable Goods - 7%
- Construction & Demolition - 4%
- Plastic Containers - 4%
- Wood Pallets – 4%
- Textiles – 4 %
- Yard Waste - 3%

The SWACO 2021 Impact Report identifies the strategic direction needed to achieve a 75% diversion goal in Central Ohio. Processing Capacity Strategic Goals were identified as critical to achieving the 75% diversion goals within the next ten years. Processing Capacity goals include:

Organics Processing Capacity

Managing and diverting the organics waste stream (including yard, food waste and other organic materials) through collection and processing infrastructure, public/private partnerships, and supportive policies. From the waste stream analysis, diversion could be increased 25% through an aggressive cost-effective recovery of food scraps and other compostable items and fiber. This is particularly critical and timely. SWACO contracts for processing residential yard waste will be expiring and will need to be defined. In addition, there is a growing demand from communities and residents for expanded convenient organics recycling that will require an active SWACO presence to coordinate the necessary infrastructure and modern technologies.

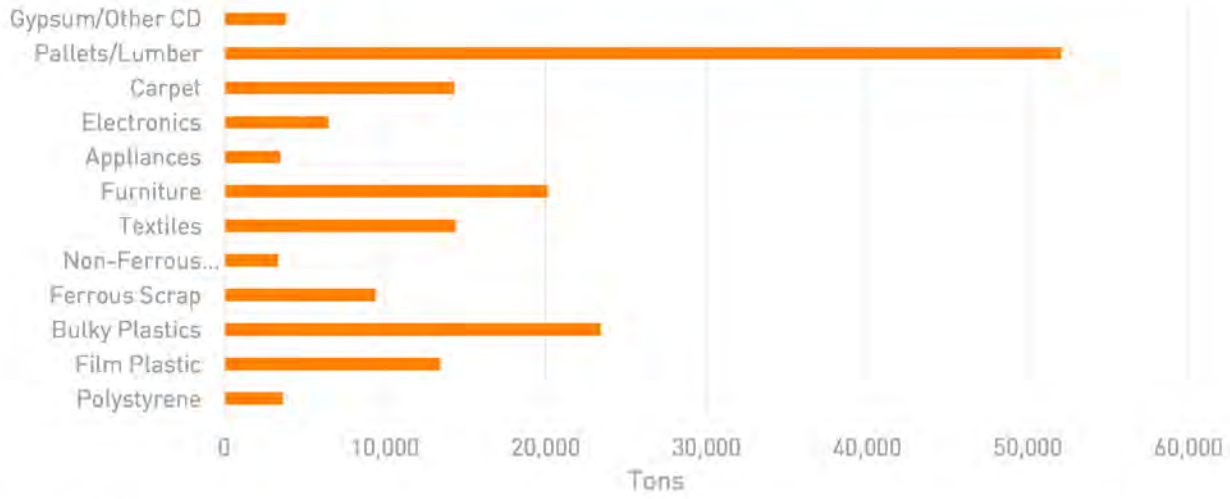
MRF Capacity

Determining Material Recovery Facility Processing options and roles to serve longer-term needs of residents and businesses and move forward with recommendations.

HHW and Hard to Recycle Materials Capacity

Evaluation of enhancements to the HHW (Household Hazardous Waste) program, to create services for hard-to-recycle items including mattresses and carpet. hard-to-recycle items and establish/operate drop off centers. Hard to recycle items are also a continuing issue with the industrial/commercial/institutional sector. SWACO expects to continue the analysis of implementing best practices for these materials in a cost-effective manner.

Figure H-6.6 Institutional, Commercial, and Industrial (ICI) Hard-to-Recycle Landfill Composition



Diversion Goal

SWACO is committed to the Strategic Planning Goal of diverting 75 percent of waste from the landfill by the end of 2032. Achieving that goal will require the processing capacity to ensure a robust legitimate circular economy, which transforms old materials into new products that preserve and protect our environment. Note that the District does provide proof in Appendices A, B, C, D and F of maintaining more than a 25% residential/commercial reduction rate to meet the state Compliance Goal.

As noted in Appendix K, SWACO will take a conservative approach in this updated plan version. SWACO is not yet prepared to financially and programmatically commit our communities to a greater 75% goal without additional research and financial planning that will occur during the first five years of the planning period.

Further research, planning and detailed financial projections will guide SWACO towards providing the additional capacity and programming to achieve the 75% Strategic Goal. Enhanced strategies will be detailed in each five-year plan rewrite and future Appendix H-9s will be amended accordingly.

D. STATE GOAL PROGRAM SUMMARY

Residential Recycling Infrastructure: Curbside Recycling Services

Name	Start Date	End Date	Goal(s)
Non-Subscription Curbside Recycling	Existing	Ongoing	Goals 1 & 2

All non-subscription curbside recycling services available in the reference year are expected to continue. Non-subscription services mean 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.

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 2021, standard recyclables collected at the curb were: paper, plastic bottles, jugs, and tubs containers, 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 (including the City of Columbus) implementing non-subscription curbside recycling, all communities were serviced by weekly collection except for three, the City of Columbus, Jefferson Township, and Mifflin Township. These three political entities offer a 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 Appendix H.

There were no direct program costs, as SWACO does not expend program operational costs for the provision of curbside recycling programs. However, SWACO does pay for outside legal assistance for the Consortium program and direct contracting assistance for communities.

Name	Start Date	End Date	Goal(s)
Full-Time Drop-offs	2016	Ongoing	Goals 1 and 2

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 location's 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 2021, standard recyclables collected at

the drop-off containers were paper, plastic bottles, jugs, tubs, 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 who may or may not have access to recycling and small businesses. In 2021, drop-off containers were provided at 52 public locations, 14 non-public locations (typically located on the property of an apartment complex primarily for use by residents of the complex), and 5 SWACO locations. Two public locations were removed in 2021 per the property owner's request. Container fullness, contamination and frequency of collection are monitored (by the driver) each time the location is serviced. In 2021, approximately 6,125 tons were collected through the drop-off program (including public, non-public, and SWACO locations).

This is a very resource-intensive program to implement that includes capital, logistics, operations, 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 2021 were $858,635.96 and include capital and operational (labor and maintenance) expenses.

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.

Commercial/Institutional Source Reduction, Reuse and Recycling Programs

Name	Start Date	End Date	Goal(s)
Commercial/Institutional Sector Technical and Diversion Assistance	2017	Ongoing	Goals 2, 3, 4, 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 Technical Assistance, contract assistance (may include service consortiums in the future), hosting business forums and Educational Webinars, a recognition program (Caught Blue Handed Social Media Campaign) and economic incentives. The following programs are ongoing for SWACO. As of 2022 all components are offered at some level.

Technical Assistance will be provided to 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.

Technical Assistance will be a consultative approach to helping a business address issue that can vary from helping with waste audits, assisting with developing the recycling program, or working to find solutions for hard to recycle items. Self-assessment tools and resources are available on SWACO's website, and SWACO staff will be available to conduct in-person waste assessments and consultation and refer businesses to available waste reduction, reuse and recycling services, resources, and solutions.

Contract Assistance will include direct assistance with commercial entities, including contract review and possibly the formation of consortiums. Commercial entities can require provisions in their contracts to include reporting and incentive-based programs. Consortiums participants agree to contract together to increase negotiating power to reduce costs when contracting for solid waste and recycling collection services.

Business Forums and other 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 in organizing the forums as well as conducting on-site data gathering and observations. SWACO may work with outside assistance to conduct data gathering and observations.

SWACO will continue the Business Recognition Program for 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 (such as Ohio EPA's EEE program). The Caught Blue Handed Social Media campaign that promotes successful recycling initiatives for businesses recognizes all efforts (large and small) in November (America Recycles Day) each year and continues to bring awareness to sustainability and recycling initiatives locally for Franklin County.

Economic Incentives and Other financial support to help the commercial sector recover materials was developed in 2021/2022. The program created assistance opportunities to aid in overcoming obstacles to reuse, recycle and compost. Some identified funding assistance opportunities will depend on outcomes from technical assistance. Presently, financial incentives are available (up to $2,000) for implementing a recycling program and can assists businesses with purchasing indoor containers, signage (back of house messaging) and service start up support. Future funding opportunities may include supporting small equipment purchases (balers, mini balers) or assistance in purchasing equipment (Densifiers for example) to divert materials.

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 2021 SWACO reconvened meetings with interested school districts for the third cycle of bidding through the School Consortium program. Ten school districts participated, the highest number of districts that have every participated in the process. The process involved coordinated meetings between SWACO, school district representatives and outside legal assistance. It resulted in a successful bid process with contracts executed during 2022.

SWACO will continue to implement the School Recycling Champion program, which guides individual schools through a process to assess the needs of the school, develop a recycling implementation plan, purchase recycling containers with assistance of SWACO, and implement a recycling education program in the school. In addition, SWACO will work with school Boards, Superintendents, and district staff to implement district-wide recycling programs using a similar process used for the individual schools in the School Champions program, but in this case district-wide through the School District Recycling Champions program.

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 loans, 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. This will involve technical assistance and assistance with education, and could also include waste audits, financial assistance for containers and equipment, and other support to create a successful and sustainable program.

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. Many of these institutions are eligible for funding through the Community Waste Reduction Grant program.

Name	Start Date	End Date	Goal(s)
Multi-family Diversion Assistance	2017	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.

SWACO will continue to 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. SWACO will aid 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	2017	Ongoing	Goals 2, 3, 4

SWACO will implement the Business Recycling Champion program that will include technical assistance and financial assistance for recycling containers and service start-up. The industrial sector is considerably smaller in SWACO's jurisdiction than the commercial sector, and many of these facilities already have mature waste diversion programs in place. However, SWACO will continue to analyze 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 has several strategies for managing HHW which primarily include such materials as paint, solvents, automobile products, DIY products, household batteries, gasoline, turpentine, spray paint, fertilizer, pool chemicals, household cleaners, antifreeze, and other reactive and corrosive liquids and solids. Collection events are the typical management strategy for these materials.

To keep HHW out of the landfill, SWACO contracts Environmental Enterprises Incorporated (EEI) to offer free residential recycling for HHW at the full time Household Hazardous Waste Center located on 8th Ave. in Columbus. SWACO also partners with local communities to offer several mobile collection events each year. Collection events are advertised and promoted through social media, paid advertising, newsletters, and the SWACO website. Information regarding take-back options for certain materials is available on the recycleright.org website.

Business hazardous waste is regulated differently by the OEPA than household hazardous waste. Therefore, businesses are not eligible to participate in HHW collection programs and should contact EEI, Inc. directly at 614-294-1300 to inquire about the cost to collect or accept their hazardous materials.

Figure H-6.2 Historical Permanent HHW Drop Off Tons

Latex and water-based paints are not considered hazardous and are not accepted as part of SWACO's free HHW program. However, residents can drop-off latex paint for a fee. Paint hardeners, available at most hardware stores, or kitty litter may be added to left over latex paint in order to solidify the unused product and the dried paint may be disposed with normal household rubbish.

Permanent HHW Drop Off Collection Site

The Permanent HHW Collection site remains a successful program and experienced record participation in 2021.

Notes: Tonnages shown include all materials accepted including lead-acid batteries.

Mobile HHW Drop Off Collection Sites

Figure H-6.3 Historical Mobile HHW Drop Off Collection Tons

SWACO sponsored three collection events in 2021 that were successful at diverting a total 3.2 tons of batteries and 53 tons of mixed HHW.

The Mobile HHW Collections have also been successful and the total of the three 2021 events was an increase over the previous three years.

HHW Education

Improperly disposed HHW poses a serious environmental risk. For instance, motor oil or chemicals poured down a storm drain can pollute large bodies of water including drinking water sources. Informing the public of these dangers and providing outlets for proper disposal or recycling is a priority. Education on using less-harmful ingredients and more environmentally friendly products is included in educational materials available on the webpage and social media outlets.

SWACO will continue to focus the program 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. The existing take-back program for these materials will be identified and promoted on SWACO's website. Stakeholder meetings between industry and government representatives may also be organized to work together to draft meaningful policy, education, and enforcement.

Strategy 2 – Collection

The HHW collection contract 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.

Three mobile collection drive/events per year are currently offered. Collective pounds recycled from the 2021 mobile collection events were 106,132 pounds (Includes 6,409 pounds of lead-acid batteries) from 2,426 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 2021 the permanent facility was 598,905 pounds. 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 – Evaluation and Convenience Centers

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 continue to explore and research the best and sustainable practices for managing HHW. SWACO may conduct a study to help determine the viability of 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.

In particular, SWACO is actively exploring the possibility of establishing a "Convenience Center" type facility that would accept a wider variety of materials beyond just HHW. This type of facility would also accept materials such as scrap metal, yard waste, and tires, providing more of a "one-stop" experience for residents who want to recycle a variety of items.

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 websites 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. 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

The Solid Waste Authority of Central Ohio (SWACO) recognized that an effective scrap tire management strategy would not only contribute to waste minimization but could also provide economic value to the region. To assess the value of scrap tires as a resource, SWACO contracted in 2018 with DSM Environmental Services to do a thorough analysis of Ohio's scrap tire waste stream. DSM identified that Ohio generates approximately 12 million used tires per year, with an estimated 1.3 million tires from Franklin County.

Ohio's Scrap Tire Law gives Ohio EPA the authority to regulate scrap tires until they are properly disposed, recycled into another product, or converted into energy. Through Ohio EPA's registration program, tire dealers and repair shops know they are dealing with legitimate scrap tire businesses rather than illegal dumpers when disposing of used tires.

Collection outlets for used tires are multiple and include retailers, municipal drop-offs, SWACO facilities and mobile drop-offs. After collection, most tires are transported for processing. Liberty Tire's Recycling facility in Grove City processes the majority of the tires collected in the region to produce crumb rubber products for use in a wide variety of molded products including welcome mats, railroad ties, acoustical underlays, and portable speed bumps. In addition to molded rubber products and coatings, crumb rubber enhances surfaces such as highways and horse tracks, as well as civil engineering applications substituting for stone aggregates. The Grove

City facility produces civil engineering products for use in landfill construction in Ohio. The facility provides 36 jobs and processes roughly 5.5 million tires annually. In nearby Shelby County Boomerang Rubber, Inc. (Botkin's, Ohio) manufactures truck bed mats, splash guards and agricultural mats from post-industrial uncured rubber scrap. They also grind their own cured flash (trim) and add it back into the product feedstock (see www.boomerangrubber.com). Through these two examples, a partial closed loop for tires can be found in Ohio. SWACO has established multiple strategies for managing scrap tires.

Retailer Take-Back Programs offer 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.

The Drop-Off at the Franklin County Sanitary Landfill or Transfer Facilities 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. 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. Volumes have stabilized since 2019 although the impact from COVID is yet to be evaluated.

Figure H-6.1 Historical Scrap Tire Tons

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.

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 provides information on our website to direct users to identified tire outlets.

Strategy 2 – Drop-off

SWACO accepts tires at each of the transfer stations and landfills 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. 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

The waste composition study reports 3.7% of material landfilled is yard waste. SWACO dedicates extensive resources to managing yard waste including these strategies:

- Reduction education
- Backyard composting
- Yard waste drop off locations
- Seasonal yard waste collection programs
-

Other references to yard waste management can be found in these plan appendices:

- H7 Diversion Analysis
- H10 Regional Analysis
- H11 Data Collection

Yard waste is managed with a decentralized integrated system of education, curbside collection, drop-off, mulching and composting. Processing yard waste is the responsibility of private businesses registered as compost facilities. Methods for processing are at the discretion of these registered compost facilities.

As mentioned earlier in this section, SWACO does not directly operate/provide 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. During 2021 SWACO assisted Consortiums #1 and #3 with re-bidding their curbside trash, recycling, and yard waste contracts (16 communities), as well as providing assistance to Worthington in re-bidding their contract.

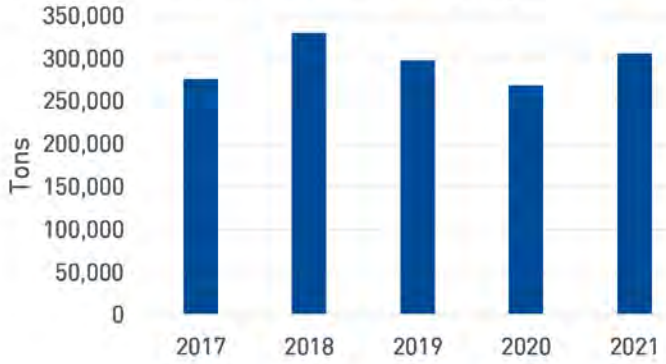
To increase residential education on proper yard waste management, SWACO provides outreach and education via our web site, electronic newsletters, and social media. Appendix L details the outreach and education plan.

Yard Waste Analysis

Historical tonnages recycled are shown in Table H-4.3.

Composting can be small, medium, or large scale. A diversely developed system reinforces sustainability and environmental stewardship. SWACO works with municipalities, consortiums, and contracts to assist in providing opportunities for yard waste management.

Figure H-4.3 Historical Yard Waste Recycling



SWACO contracts with compost processors to process materials in the county at no charge to the customer. The contract costs are set but tonnages fluctuate yearly so cost per ton also fluctuates yearly. Contract costs do not include transportation or hauling. Historically SWACO has contracted with two separate operators of Class IV compost facilities located within the jurisdiction, with annual contract costs of about $1,485,000. These contracted service providers accepted yard waste from residents and residential curbside collection free of charge. These contracts will be periodically evaluated, re-bid, and modified as needed in order to maintain adequate processing capacity and to contain program costs.

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.

Name	Start Date	End Date	Goal(s)
Food Waste Management	2021	Ongoing	Goals 5 and 2

Wasted food has emerged as an opportunity for education and outreach by all municipal solid waste and recycling programs, including SWACO. The savemorethanfood.org campaign provides resources and education for residents to reduce food waste. In addition, businesses in Central Ohio are being interviewed to help understand which industries are generating considerable amounts of food waste, which are already implementing programs and changes to business practices to reduce food waste, and what additional tools or services are needed to support this effort. This analysis will help determine programs, technical assistance, and resources that SWACO can provide to fill the gaps in commercial and institutional food waste reduction efforts. The research is expected to conclude in 2022.

There are several available options to manage food waste including waste minimization, donation, composting, and technologies (anaerobic digesters, in-vessel technologies, etc.). Waste minimization is a management method included in programing at SWACO and teaching about making better use of food through storage, portion size, recipe suggestions for leftovers can help prevent food waste.

Based on the waste composition study, approximately 14.7% of waste landfilled is food waste and as demonstrated earlier in Table H-4.2, an estimated 181,301 tons of food waste is being landfilled. Food waste is a diversion opportunity.

The adequate infrastructure for collecting and processing food waste has increased over the past 5 years and continues to be 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.

Food waste rescue and food waste minimization efforts are underway within the county. 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 county. Most food waste composting in 2021 was directed to out-of-district facilities.

Food Waste Analysis

Historically food waste recycling has been inconsistent as shown in Table H-4.2.

Food waste is a difficult stream to manage in large part because of the collection methods and monitoring of composting and technology approaches.

There has been an increase in interest in food waste composting and collection.

The following community have food waste collection opportunities in 2021:

- Bexley - Curbside Collection
- Dublin - Drop-off Collection
- Grandview Heights - Drop-off Collection
- Grove City - Drop-off Collection
- Hilliard - Drop-off Collection
- Westerville - Drop-off Collection
- Worthington - Drop-off Collection
- Upper Arlington - Drop-off Collection

Figure H-4.3 Historical Food Waste Recycling

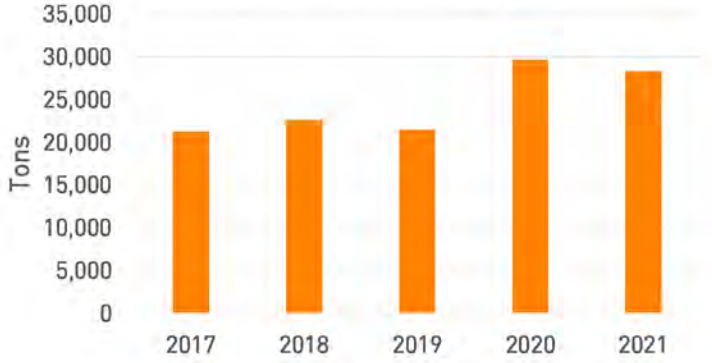
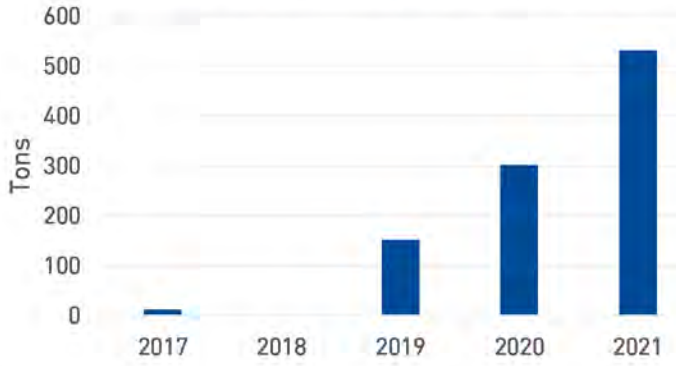


Figure H-4.4 Historical Community Food Waste Recycling



Wasted food recovery has emerged as an opportunity for education and outreach. The savemorethanfood.org campaign provides resources and education for residents to reduce food waste. In addition, businesses in Central Ohio are being interviewed to help understand which industries are generating considerable amounts of food waste, which are already implementing programs and changes to business practices to reduce food waste, and what additional tools or services are needed to support this effort. This analysis will help determine programs, technical assistance, and resources that SWACO can provide to fill the gaps in commercial and institutional food waste reduction efforts. The research is expected to conclude in 2022.

SWACO also provides educational collateral materials to schools including school food waste prevention and diversion on SWACO's School Recycling Resources and School Food Waste Resources webpages.

The District will be responsible for coordinating efforts promoting and providing strategies for processing organics including the potential siting of a processing facility. The District will also collaborate with businesses, schools, and communities to educate, communicate, and implement best practices to minimize food waste generation and recovery.

The District will look at organics and yard waste recovery and recycling rates annually to ascertain campaign impact. The District will also track community promotions, participation rates, and business response. The district can also quantify the posts and views on social media over time.

During the planning period, SWACO will promote three management strategies: waste reduction, food recovery, and reuse as well as composting and other technologies. In 2021, food waste recorded as diverted from the landfill was 181,116 tons.

The web based Save More Than Food campaign (savemorethanfood.org) was created to increase awareness of food waste in central Ohio. The site encourages residents to reduce food waste using specific resources now available in the district. To date, 32 partner organizations have used the resources and they have been seen more than 17 million times through 133,000 clicks to the new site. In tandem with the website, SWACO partially supported 9 community drop-off locations which collectively diverted more than 400,000 pounds of organic material from landfill. This resulted in a 21% reduction in the amount of food waste generated at the household level, due to the 40% increase in usage of the drop-off locations, as measured by The Ohio State University and Upper Arlington. Results have been impressive:

Strategy 1 – Waste Reduction

SWACO will promote education and awareness to help minimize the amount of wasted food generated and disposed of by 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 with the recovery of edible food by identifying and promoting local food recovery outlets such as the Mid-Ohio Food Bank, Food Rescue UA, and other related non-profit organizations.
To complement the promotion of relevant resources and services, SWACO provides additional educational collateral materials describing programs suitable to schools. Downloadable classroom activities, signage, and best practice documents for school recycling and school food waste prevention and diversion are available on SWACO's School Recycling Resources and School Food Waste Resources webpages. In lieu of compiling case studies of best practices, video interviews were published on SWACO's Community Waste Reduction Grant (CWRG) and School Food Waste Resources webpages showcasing schools with a focus on recycling and food waste composting. Historical reports and Best Practice Guides for School Recycling and Food Waste Prevention are accessible for download on the School Recycling Resources and School Food Waste Resources webpages. Facility tours provide a tangible opportunity for schools to experience where their trash or recycling goes when it goes "away." Franklin County Sanitary Landfill hosts educational tours for students to experience the impacts of waste and the opportunities for increased waste reduction. A total of 58 landfill tours with 2,159 students were completed in 2021, with virtual tours being offered from July through December.

Strategy 3 – Composting and Other Technologies

Best practices for managing food waste are as an integrated system consisting of small-, medium- 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. Feasibility studies will 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 can be provided to public entities in Franklin County. Grant funds can be used for waste reduction or diversion infrastructure projects, capital improvements, and other activities. As an example, SWACO awarded fifteen (15) Community Waste Reduction Grants in 2021 totaling $215,055 to the

- City of Columbus
- City of Dublin
- City of Grandview
- City of Grove City
- City of Hilliard
- City of Westerville
- Columbus City Schools
- Community Development for All People
- COSI
- Form 5 Prosthetics
- Habitat for Humanity
- Ohio Dept. of Rehab & Correction -Franklin Medical Center
- Ohio Health
- Ohio Wildlife Ctr
- Franklinton Farms

Event Waste Reduction Grants support large-scale public event organizers that establish best practices for reducing waste, increasing recycling, and composting and generate public awareness about waste reduction activities. SWACO awarded three (3) Event Waste Reduction Grants in 2021 with a total of $7,314 was reimbursed to these organizations:

- Our Lady of Perpetual Help Church summer parish festival for event recycling and food waste collection
- What? Music and Art Festival for even recycling
- Final Third Foundation for event recycling

Special Project Funding by be provided to special projects that align with SWACO's mission. Projects may include, but are 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 may consult with businesses to enhance markets for recyclable materials and conduct market studies to understand the economics of reuse and recycling in the District. SWACO regularly interacts with businesses within the jurisdiction that either generate recyclable materials, process recyclable materials, or use recyclable materials. One consistent topic of conversation is to understand any challenges or barriers that they are facing to recycle or use more recycled materials, and the status of recycling markets for the materials that they generate or use.

In 2021, SWACO continued to develop a Green Business Park on property that is owned by SWACO that is designed to attract and support business that can create value out of waste materials either through processing materials or using recycled materials as a feedstock for their business.

This Green Economy Business Park is a key part of the District's vision to build a more economically and environmentally sustainable future for our region. The Business Park is proposed to be built on 350 acres of SWACO-owned land. The goal is to bring together the recycled materials supply chain through research, technology, and advanced manufacturing through a capital investment of $350 million to $500 million. SWACO models and projections show that the site, once developed, could create between 2,000 and 3,500 manufacturing jobs, producing between $1.6 million and $4.2 million in local tax revenues for the local community. If approved, the Green Economy Business Park will cement the Central Ohio region as an economic leader in the emerging market for recyclables and sustainable manufacturing. SWACO will conduct market studies to understand the economics of reuse and recycling and research how increased diversion will drive new business.

SWACO occasionally assists with projects that may include but are not limited to research, infrastructure improvements, or pilot projects. In 2021 SWACO worked closely with the Columbus Crew and Ohio EPA to develop an Ohio EPA grant application for recycling equipment and containers in the new downtown Columbus Crew Stadium. The Crew was awarded a grant by Ohio EPA in 2021.

Recycled-Content Support Assistance is available to assist with funding that will foster businesses that manufacture and market recycled-content products. In 2021, SWACO collaborated with Rev1 Ventures to help identify and support innovative businesses, technologies, and start-ups in the waste field. SWACO and Rev1 provided technical assistance and guidance to 8 local start-ups and/or social enterprises on how to grow or expand their business.

SWACO may assist financial support to help the commercial sector recover materials. In 2021, SWACO piloted a new financial assistance program currently branded as the Business Recycling Champion program. It is designed to help businesses with purchasing indoor containers, indoor and outdoor signage, and service start-up support. In order to be eligible for the incentives a business has to develop a business recycling plan using a Toolkit provided by SWACO. Full implementation of the program will occur in 2022.

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 the 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.

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 to increase negotiating power and to reduce costs when contracting for solid waste management, recycling, and yard waste collection services.

Appendix H-1 describes SWACO's current outreach to communities by offering contract assistance in a Community Solid Waste and Recycling Consortium. During 2021 SWACO assisted with re-bidding curbside trash, recycling, and yard waste contracts to 16 communities. In total, 24 communities were participating in one of three community consortiums.

A total of 31 of the 41 communities participate in some form of contract assistance from SWACO. Communities also have access to Eastman & Smith LTD, for legal counsel. This program is always available to other communities that could benefit from the collaboration and best practice sharing that occurs within the consortium. Community Solid Waste and Recycling Consortium free technical guidance and legal services assist communities with writing contracts and procuring residential waste, recycling, and yard waste collection and processing services. The program provides specialized support where communities have limited capacity and creates uniform policies throughout the region. The program aids in the adoption of best practices for residential waste reduction and diversion. The contract assistance and consortium program continue to provide high value to district communities and residents. The program has helped to create uniform polices and support the adoption of best practices for residential recycling. The program will continue to play a significant role in the development of new policies, services, and programs that will help to increase the capture of recyclable material.

SWACO has invited all the communities in the District to participate in meetings to inform them 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 including development of bid specs, bid review, and contract execution). The consortium contracts usually bid separately for recycling processing and collection services and include any number of service options.

SWACO will continue to promote community consortiums and target 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	Existing	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 events; 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 and disposed of. SWACO will review existing data collection processes 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 to characterize the strengths and weaknesses of waste programs in the District. A waste sort identifies discarded materials that could be captured. From time to time, SWACO will conduct waste studies to determine participation, set-out rates, diversion rates, 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)
Environmental Crimes Task Force	Existing	Ongoing	None

Established in 1992, the Environmental Crimes Task Force of Central Ohio (ECTF) is Franklin County's multi-governmental, anti-littering and illegal dumping collaborative designed to identify, investigate, and prosecute environmental crimes. In addition, The ECTF works to educate Franklin County residents about how to dispose of their unwanted materials properly and safely – such as hazardous materials, yard waste and construction debris.

The ECTF allows residents to report environmental crimes and support the successful investigation and prosecution of those crimes. SWACO established a 2022 ECTF Contracts, Services, and Supplies budget of $246,504 which is a 4% increase over 2021. The contracts are with the Franklin County Sheriff's Dept. and Prosecutor's Office.

SWACO uses a full time Litter Marshall that works to minimize the negative aesthetic, economic, safety and health impacts of litter and illegal dumping by involving citizens in the reporting of illegal activity, and to clean

littered areas and illegal dump sites. In addition, SWACO funds and manages the Environmental Crimes Task Force "itsacrime.org" web site and 24-hour hotline. During 2020, 715 complaints were reported through this system.

The program has been successful at accomplishing the established goals of protecting the environmental health and safety of central Ohio residents and communities. As an example, in 2016, 22 defendants were convicted of 31 environmental crimes obtained by ECTF partners and were collectively sentenced to serve more than 13 years in jail, pay more than $50,000 in fines and restitution, and provide hundreds of hours of community service removing trash from roadways, waterways and parks.

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.

During the planning period, the ECTF will utilize the following strategies to combat 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) 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.

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 on successes and challenges for projects/strategies.

Name	Start Date	End Date	Goal(s)
Program Planning Assistance and SWMP Program Development	Existing	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 the research of programmatic approaches and potential approaches during the planning period. The 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 toward resource management and the 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.

Name		Start Date	End Date	Goal(s)
Comprehensive Education and Outreach by Target Audience		Existing	Ongoing	Goal 4
Residential				
Anti-Litter, illegal dumping, and litter reporting	Environmental Crimes Task Force "itsacrime.org" web site and 24-hour hotline.			
Electronics recycling	Businesses that accept e-waste are listed on recycleright.org.			
Scrap tire	Businesses that accept tires are listed on recycleright.org.			
Organics/food waste promotion	Save More Than Food (savemorethanfood.org) promotes awareness of prevalence of wasted food.			
Educational collateral	Printed 'slim cards' that describe SWACO diversion programs.			
Community events	Staffed a booth/table at community events.			
Schools				
Targeted outreach	Annual newsletter and social media posts promoting programs.			
Presentations & workshops	Presentations, educational video, and virtual & in-person tours of facilities to over 2,159 students.			
Audience-specific collateral	Classroom activities, signage, best practice guidance.			
Community events	Staffed a booth/table to provide school-related programs for parents to take back to teachers/school administrators.			
Case studies	Published video interviews with schools, grant reports showcasing model programs, and best practice guidelines on website.			
Industries				
Targeted outreach campaign	Partnership with Columbus Chamber of Commerce to reach businesses, including webinars promoting SWACO programs.			
Speaker/Presenter	Recycle Right at Work webinar series.			
Recognition program	Continued to develop and pilot Business Recycling Champion Program. Full implementation will come in 2022.			
Audience-specific collateral	Further developed Business Recycling Toolkit on website; posted webinars for passive viewing.			
Institutional & Commercial Businesses				

Name		Start Date	End Date	Goal(s)
Business forums	Recycle Right at Work webinar series.			
Business recognition	"Caught Blue Handed" social media campaign, Business recycling Champion logo for in-business display.			
Speaker/Presenter	Continued to develop and pilot Business Recycling Champion Program. Full implementation will come in 2022.			
Recognition program	Continued to develop and pilot Business Recycling Champion Program. Full implementation will come in 2022.			
Digital toolkit	Customizable flyers, labels, templates to simplify recycling program rollout.			
Convene stakeholders	In lieu of in-person meetings, webinars and one-on-one interactions were primarily used to offer resources.			
Communities & Elected Officials				
Convene stakeholders	Annual virtual event with City Managers and Mayors.			
Case studies	Presentations by grant-funded communities to showcase best practices and implementation strategies.			
Presentations & workshops	Presentations by grant-funded communities to showcase best practices and implementation strategies.			
Digital toolkit	Customizable flyers, labels, templates to simplify recycling program rollout to 8 communities.			
Recognition program	Invite community representatives to present program overview and receive Certificate of Appreciation from SWACO Board.			
Across All Audiences				
Resource Guide	SWACO's websites are considered resource guides: recycleright.org, savemorethanfood.org, swaco.org.			
Speaker/Presenter	In-person speaking engagements to any groups.			
Education campaign	Recycle Right, Make a Difference campaign.			
Annual report	2020 Community Impact report issued.			
General audience collateral	Printed and digital resources that help to inform and educate the community at-large about SWACO programs, services, and facilities.			
Material-specific education/outreach				
Organics/Food Waste	The Save More Than Food campaign offers resources to reduce food waste. Activities include market research interviews to assess current activities and gaps in resources to inform future programs, technical assistance, and resources.			
Yard Waste	Outreach campaign on proper yard waste management includes social media, website, and email campaign materials.			
Electronics	Resource guide on website connects community to local outlets for electronic waste.			
Tires	Resource guide on website connects community to local outlets for tires.			

Appendix J: Reference Year Opportunity To Recycle and Demonstration of Achieving Goal 1

A. RESIDENTIAL SECTOR OPPORTUNITY TO RECYCLE IN THE REFERENCE YEAR

Demonstrating compliance with Goal 1 means the SWACO shall ensure adequate infrastructure to give residents and commercial businesses opportunities to recycle solid waste.

Goal 1: Residential/Commercial Waste Reduction and Recycling Rate
A SWMD that opts to achieve Goal 1 must demonstrate having achieved a 25 percent residential/commercial waste reduction and recycling rate in the reference year or achieving annual increases during the planning period.

Table J-1 Opportunity to Recycle

ID #	Franklin	2021		2025		2029		2034		2039	
	Name of Community	Pop.	Credit	Pop.	Credit	Pop.	Credit	Pop.	Credit	Pop.	Credit
Non-subscription curbside											
NSC1	Bexley (City)	13,862	13,862	14,740	14740.346	15,354	15,354	16,048	16,048	16,659	16,659
NSC2	Blendon Township	8,105	8,105	8,619	8618.5617	8,977	8,977	9,383	9,383	9,741	9,741
NSC3	Brice (Village)	92	92	98	97.829448	102	102	107	107	111	111
NSC4	Canal Winchester (City)	9,469	9,469	10,069	10068.99	10,488	10,488	10,962	10,962	11,380	11,380
NSC5	Clinton Township	4,476	4,476	4,760	4759.6153	4,958	4,958	5,182	5,182	5,379	5,379
NSC6	Columbus (City)	909,686	909,686	967,327	967326.95	1,007,593	1,007,593	1,053,133	1,053,133	1,093,254	1,093,254
NSC7	Dublin (City)	49,221	49,221	52,340	52339.818	54,519	54,519	56,983	56,983	59,153	59,153
NSC8	Gahanna (City)	35,746	35,746	38,011	38010.994	39,593	39,593	41,383	41,383	42,959	42,959
NSC9	Grandview Heights (City)	8,078	8,078	8,590	8589.8509	8,947	8,947	9,352	9,352	9,708	9,708
NSC10	Grove City (City)	41,323	41,323	43,941	43941.373	45,770	45,770	47,839	47,839	49,662	49,662
NSC11	Groveport (City)	5,981	5,981	6,360	6359.9775	6,625	6,625	6,924	6,924	7,188	7,188
NSC12	Hamilton Township	4,204	4,204	4,470	4470.3805	4,656	4,656	4,867	4,867	5,052	5,052
NSC13	Hilliard (City)	37,094	37,094	39,444	39444.408	41,086	41,086	42,943	42,943	44,579	44,579
NSC14	Jackson Township	4,235	4,235	4,503	4503.3447	4,691	4,691	4,903	4,903	5,090	5,090
NSC15	Jefferson Township	13,830	13,830	14,706	14706.318	15,318	15,318	16,011	16,011	16,621	16,621
NSC16	Lockbourne (Village)	235	235	250	249.89044	260	260	272	272	282	282
NSC17	Madison Township	11,041	11,041	11,741	11740.597	12,229	12,229	12,782	12,782	13,269	13,269
NSC18	Marble Cliff (Village)	630	630	670	669.91905	698	698	729	729	757	757
NSC19	Mifflin Township	2,625	2,625	2,791	2791.3294	2,908	2,908	3,039	3,039	3,155	3,155
NSC20	Minerva Park (Village)	2,069	2,069	2,200	2200.0992	2,292	2,292	2,395	2,395	2,487	2,487
NSC21	New Albany (City)	10,863	10,863	11,551	11551.318	12,032	12,032	12,576	12,576	13,055	13,055
NSC22	Norwich Township	3,820	3,820	4,062	4062.0488	4,231	4,231	4,422	4,422	4,591	4,591
NSC23	Perry Township	4,210	4,210	4,477	4476.7606	4,663	4,663	4,874	4,874	5,060	5,060
NSC24	Plain Township	1,977	1,977	2,102	2102.2698	2,190	2,190	2,289	2,289	2,376	2,376
NSC25	Pleasant Township	6,406	6,406	6,812	6811.907	7,095	7,095	7,416	7,416	7,699	7,699
NSC26	Reynoldsburg (City)	40,901	40,901	43,493	43492.633	45,303	45,303	47,351	47,351	49,155	49,155
NSC27	Riverlea (Village)	596	596	634	633.76469	660	660	690	690	716	716
NSC28	Sharon Township	1,784	1,784	1,897	1897.0406	1,976	1,976	2,065	2,065	2,144	2,144
NSC29	Truro Township	1,414	1,414	1,504	1503.5961	1,566	1,566	1,637	1,637	1,699	1,699
NSC30	Upper Arlington (City)	36,618	36,618	38,938	38938.247	40,559	40,559	42,392	42,392	44,007	44,007
NSC31	Urbancrest (Village)	1,025	1,025	1,090	1089.9477	1,135	1,135	1,187	1,187	1,232	1,232
NSC32	Valleyview (Village)	665	665	707	707.13677	737	737	770	770	799	799
NSC33	Washington Township	1,002	1,002	1,065	1065.4903	1,110	1,110	1,160	1,160	1,204	1,204
NSC34	Westerville (City)	39,163	39,163	41,645	41644.508	43,378	43,378	45,339	45,339	47,066	47,066
NSC35	Whitehall (City)	20,254	20,254	21,537	21537.366	22,434	22,434	23,448	23,448	24,341	24,341
NSC36	Worthington (City)	14,709	14,709	15,641	15641.015	16,292	16,292	17,028	17,028	17,677	17,677
NSC37	Obetz (City)	0	0	5,989	5988.8636	6,238	6,238	6,520	6,520	6,768	6,768
Subscription curbside											
SC1	Brown Township	2,631	658	2,798	699.42739	2,914	729	3,046	761	3,162	790
SC2	Franklin Township	10,445	2,611	11,107	2776.7081	11,569	2,892	12,092	3,023	12,553	3,138
SC3	Harrisburg (Village)	313	78	333	83.208199	347	87	362	91	376	94
SC4	Obetz (City)	5,632	1,408	5,989	0	6,238	0	6,520	0	6,768	0

ID #	Franklin	2021		2025		2029		2034		2039	
	Name of Community	Pop.	Credit	Pop.	Credit	Pop.	Credit	Pop.	Credit	Pop.	Credit
SC5	Prairie Township	17,406	4,352	18,509	4627.2266	19,279	4,820	20,151	5,038	20,918	5,230
Full-time, urban drop-off											
FTU1	City of Canal Winchester	9,469	0	10,069	0	10,488	0	10,962	0	11,380	0
FTU2	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU3	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU4	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU5	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU6	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU7	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU8	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU9	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU10	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU11	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU12	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU13	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU14	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU15	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU16	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU17	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU18	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU19	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU20	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU21	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU22	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU23	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU24	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU25	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU26	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU27	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU28	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU29	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU30	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU31	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU32	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU33	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU34	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU35	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU36	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU37	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU38	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU39	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU40	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU41	City of Columbus	909,686	0	967,327	0	1,007,593	0	1,053,133	0	1,093,254	0
FTU42	Franklin Township	10,445	5,000	11,107	5000	11,569	5,000	12,092	5,000	12,553	5,000
FTU43	Franklin Township	10,445	5,000	11,107	5000	11,569	5,000	12,092	5,000	12,553	5,000
FTU44	City of Grove City	41,323	0	43,941	0	45,770	0	47,839	0	49,662	0
FTU45	City of Grove City	41,323	0	43,941	0	45,770	0	47,839	0	49,662	0
FTU46	City of Grove City	41,323	0	43,941	0	45,770	0	47,839	0	49,662	0
FTU47	City of Grove City	41,323	0	43,941	0	45,770	0	47,839	0	49,662	0
FTU48	City of Groveport	5,981	0	6,360	0	6,625	0	6,924	0	7,188	0
FTU49	City of Hilliard	37,094	0	39,444	0	41,086	0	42,943	0	44,579	0
FTU50	Jackson Township	4,235	0	4,503	0	4,691	0	4,903	0	5,090	0
FTU51	Village of Lockbourne	235	0	250	0	260	0	272	0	282	0
FTU52	Mifflin Township	2,625	0	2,791	0	2,908	0	3,039	0	3,155	0
FTU53	City of New Albany	10,863	0	11,551	0	12,032	0	12,576	0	13,055	0
FTU54	Plain Township	1,977	0	2,102	0	2,190	0	2,289	0	2,376	0
FTU55	Pleasant Township	6,406	0	6,812	0	7,095	0	7,416	0	7,699	0
FTU56	Prairie Township	17,406	5,000	18,509	5000	19,279	5,000	20,151	5,000	20,918	5,000
FTU57	Prairie Township	17,406	5,000	18,509	5000	19,279	5,000	20,151	5,000	20,918	5,000
FTU58	Prairie Township	17,406	5,000	18,509	5000	19,279	5,000	20,151	5,000	20,918	5,000
FTU59	City of Westerville	39,163	0	41,645	0	43,378	0	45,339	0	47,066	0
FTU60	City of Westerville	39,163	0	41,645	0	43,378	0	45,339	0	47,066	0
FTU61	City of Whitehall	20,254	0	21,537	0	22,434	0	23,448	0	24,341	0

ID #	Franklin	2021		2025		2029		2034		2039	
	Name of Community	Pop.	Credit	Pop.	Credit	Pop.	Credit	Pop.	Credit	Pop.	Credit
FTU62	City of Worthington	14,709	0	15,641	0	16,292	0	17,028	0	17,677	0
FTU63	City of Worthington	14,709	0	15,641	0	16,292	0	17,028	0	17,677	0
FTU64	City of Worthington	14,709	0	15,641	0	16,292	0	17,028	0	17,677	0
Part-time, urban drop-off											
None											
Full-time, rural drop-off											
FTR1	Brown Township	2,631	2,500	2,798	2500	2,914	2,500	3,046	2,500	3,162	2,500
FTR2	Hamilton Township	4,204	0	4,470	0	4,656	0	4,867	0	5,052	0
Part-time, rural drop-off											
None											
Mixed municipal waste material recovery facility											
None											
Total County Population		1,383,836		1,471,521		1,532,774		1,602,052		1,663,084	
Total Population Credit		1,384,016		1,474,461		1,534,692		1,602,813		1,662,827	
Percent of Population		100%		100%		100%		100%		100%	

Residential infrastructure the SWMD credits to achieving Goal 1 includes non-subscription curbside recycling, subscription curbside recycling, and full-time urban drop-offs. The SWMD is using the standard demonstration established in the 2020 State Plan to show compliance with Goal 1. Demonstration involves assigning population credits to the opportunities. Generally, the most convenient programs that serve the largest populations receive the most population credits.

Non-subscription curbside recycling programs credit the entire population of a jurisdiction that is served by a qualifying non-subscription curbside program toward the population that has the opportunity to recycle. The following five minimum materials are collected: newspaper, mixed paper, steel containers, aluminum containers and plastic containers.

Drop-offs, as demonstrated in this 2025 Plan Update, assign default population credit if the drop-offs: collect at least five of the materials listed in the Format 4.1 for materials designated to demonstrate compliance with Goal #1; easily accessible to residents; meet minimum capacity standards; have adequate signage; and meets the demand of the population.

Note that the inventory of urban and rural drop offs was an accurate representation of the 2021 planning year. SWACO does not own the property upon which these drop-offs are located. Consequently, property owners may during the planning period request that a drop off location be removed or relocated. This inventory is fluid and subject to a continuous update. A current inventory is available on the SWACO website.

SWACO continuously reviews each drop off site location for generation, contamination, illegal dumping activity, and appearance. From this review, SWACO adjusts the number of bins, locations, and placements accordingly to enhance participation, minimize contamination, and provide a safe clean environment.

SWACO expects that in the first years of the planning period an additional 5 to 10 drop off locations will be identified to enhance service to multi-family housing developments and small businesses. During the last half of the planning period, SWACO expects that the number of public drop off locations will decrease as individual unit multi-family housing recycling opportunities are developed.

Materials Designated to Demonstrate Compliance with Goal #1

Residential Sector	Commercial Sector
Corrugated cardboard	Corrugated cardboard
Newspaper	Office paper
Mixed paper	Mixed paper
Glass containers	Glass containers
Steel containers	Steel containers
Aluminum containers	Plastic containers
Plastic containers	Wood pallets and packaging
	Food waste

The default population credit for full-time urban drop-offs is 5,000. The following five minimum materials are collected: corrugated cardboard, mixed paper, steel containers, aluminum containers and plastic containers. Two 6-cubic yard containers are located at each site thus meeting the minimum 10-cubic yards of capacity for urban drop-offs.

Format 4.1 limits the credit for infrastructure in a community to the population of an entire community, up to and including the entire credit for a drop-off that would be needed to achieve providing 100% of the residential population with access to recycling infrastructure. This limit affects the access credit demonstration for the SWMD. Cities of Mason and Lebanon receive the full population credit for their non-subscription curbside recycling programs. Since these communities receive full population credit, they cannot receive additional population credit for the full-time drop-off locations.

The SWMD achieved Goal 1 in the reference year and will continue to achieve Goal 1 throughout the planning period as shown in Table J-1.

Format 4.1 provides alternate demonstrations for achieving Goal 1 requiring completion of Tables J-2 or J-3. The SWMD demonstrated achieving Goal 1 using the default population credits thus Tables J-2 and J-3 are not used.

B. COMMERCIAL SECTOR OPPORTUNITY TO RECYCLE

Table J-4 Demonstration of Commercial Opportunity to Recycle

Service Provider	Type of Recycling Service Provided	CC	MP	SC	PL	W	FW
Franklin							
2 Women With A Pickup Truck And Trailer Too LLC	Hauler Collection	✓	✓	✓	✓		
Able Pallet Mfg. & Repair	Pallet Refurbisher					✓	
Boren Brothers	Hauler Collection	✓	✓	✓	✓		
Buckeye Diamond Logistics, Inc.	Pallet Refurbisher					✓	
Capitol Waste & Recycling Services	Hauler Collection	✓	✓	✓	✓		
Central Ohio Contractors	Hauler Collection	✓	✓	✓		✓	
Columbus Pallet Recycling	Pallet Refurbisher					✓	
CycleMET	Scrap Yard, Hauler Collection			✓			
DM Pallet Service, Inc.	Pallet Refurbisher, 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	✓		✓	✓	✓	
G. C. Pallet & Storage	Pallet Refurbisher					✓	

Service Provider	Type of Recycling Service Provided	CC	MP	SC	PL	W	FW
Franklin							
Global Container Service Inc.	Hauler Collection	✓		✓		✓	
Global Container Service Inc.	Hauler Collection	✓	✓	✓	✓		
GoZero	Food Waste Hauler						✓
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 Services	Hauler Collection	✓	✓	✓	✓		
Luxury Waste Services	Hauler Collection	✓	✓	✓	✓		
OSU Facilities Operations	Hauler Collection	✓	✓	✓	✓		
Paper Retriever	Drop-Off, Buy Back	✓	✓				
Phoenix Recycling	Drop-Off	✓	✓		✓		
Pride Hauling & Recycling, LLC	Hauler Collection	✓	✓	✓	✓		
Republic Services	Hauler Collection	✓	✓	✓	✓		
Rumpke	Hauler Collection	✓	✓	✓	✓		
Srose Enterprises LTD (dba 1-800-GOT-JUNK)	Hauler Collection	✓	✓	✓	✓		
The Compost Exchange	Hauler Collection						✓
The Junkluggers of Columbus Ohio	Hauler Collection	✓	✓	✓	✓		
TrashCab Columbus, LLC	Hauler Collection	✓	✓	✓	✓		
Waste Management	Hauler Collection	✓	✓	✓	✓		

Commercial infrastructure the SWMD credits to achieving Goal 1 includes recycling service providers/haulers that offer collection services to commercial/institutional generators throughout the county and buybacks operations/scrap yards located within the county. The following five minimum materials are collected: corrugated cardboard, newspaper, mixed paper, steel containers, and aluminum containers.

C. DEMONSTRATION OF OTHER REQUIREMENTS FOR ACHIEVING GOAL 1

Residential/Commercial Waste Reduction and Recycling Rate

According to Goal 1 of the 2020 State Plan, SWACO must demonstrate meeting at least an 80% of its residential population in each county and ensure that commercial generators have access to adequate recycling opportunities. Tables J-1 and J-4 respectively show that the District meets Goal 1.

In the reference year, SWACO's R/C sector achieved a 44% 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.

Industrial Waste Reduction and Recycling Rate

In format 4.1, there is no requirement to achieve an industrial waste reduction and recycling rate in the reference year or will achieve annual increases in the reduction and recycling rate during the planning period. Appendix K calculates the industrial solid waste reduction and recycling rate for the reference year and the planning period. The reference year rate is 90 percent.

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: SWACO 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 continue provide technical and contract assistance to commercial entities interested in starting or expanding waste reduction and recycling programs.

- Developing and Establishing Goals: SWACO will continue 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 provide more explanation on outreach/education programs planned for this planning period.

Appendix K: Waste Reduction and Recycling Rates and Demonstration of Achieving Goal 2

A. THE DISTRICT IS DEMONSTRATING COMPLIANCE WITH GOAL 2

Goal 2: Waste Reduction and Recycling Rates
Goal 2 states that a district shall reduce and recycle at least 25% percent of the solid waste generated by the residential/commercial sector. The statue requires that a solid waste management plan provide projections for the entire planning period covered by the plan.

SWACO has provided Residential/Commercial diversion details in "Appendix H-7 Diversion Analysis: Figure H-7.3 Diversion Rate" which demonstrates that the planning year 2021 diversion rate exceeds the 25% goal. SWACO further projects that this diversion rate will increase during the planning period as a result of the reduction rate strategies provided in "Section H-7 D. Potential Diversion."

Figure H-7.3. Residential/Commercial Diversion Rate

Future Investments in Reduction Programming
Appendix H-7 includes an excerpt from the 2021 SWACO Impact Report that highlights new recycling achievements and plans for continuing sustainable expansion of recycling infrastructure within Central Ohio. https://swacoimpactreport.org/ SWACO identifies in this report that a significant investment will be needed to provide additional capacity for recyclables and organics. Further, the amount of waste being generated both on a community and individual level will increase as Franklin County's population continues to grow and the economy remains strong. This will require SWACO to also provide additional programming to ensure that there is continuing reduction in per capita and overall tonnages disposed.

SWACO 75% Diversion Strategic Planning Goal
During the 2021 planning year, SWACO diverted more than half (51%) of the total waste stream. However, the District recognizes from recent research that over a million tons of material was landfilled of which the majority (76%) had the potential to be reused, recycled or composted. This data was the foundation for SWACO's announced goal in the 2021 Impact Report of 75% diversion by 2032. This 75% diversion goal also includes source reduction achieved through education and outreach.

Two sections of the OEPA Format 4.1 Instructions apply when reconciling the 2032 SWACO Strategic Planning Reduction Goal of 75% and the 2020 State Plan Res/Com Reduction Goal of 25%.

1. SWACO will revisit progress towards 75% goal and the impact on projected revenue with each 5 year plan rewrite. SWACO recognizes the limitations of projections beyond the first six years of the planning period and will follow the guidance provided in the OEPA Format 4.1 Instructions:

   "OEPA understands that projections become questionable after the first few years of the planning period. Therefore, under most circumstances, SWMDs can develop projections for the first six years of the planning period and hold quantities constant beginning in the seventh year. Ohio EPA encourages the SWMD to look beyond the first six years to identify any significant issues that it needs to consider."

2. SWACO further recognizes that the stated 75% diversion goal includes source reduction achieved through education and outreach. The OEPA 4.1 Instructions state:

   "Reduction SWMDs will no longer receive "double" credit for source reduction. Source reduction is automatically factored into the waste reduction and recycling rate through the reduction in waste generated due to waste no longer being produced."

Considering both the speculative nature of projections beyond 6 years, and the intangible nature of source reduction, SWACO expects to continue to use a 75% "2023 Strategic Planning" reduction goal but has not incorporated that level of reduction in Appendix H – 9 Financial Analysis.

SWACO is committed to the Strategic Planning Goal of diverting 75 percent of waste from the landfill by the end of 2032. Achieving that goal will require the processing capacity to ensure a robust legitimate circular economy, which transforms old materials into new products that preserve and protect our environment. Note that the District does provide proof in Appendices A, B, C, D and F of maintaining more than a 25% residential/commercial reduction rate to meet the state Compliance Goal.

SWACO will take a conservative approach in this updated plan version. SWACO is not yet prepared to financially and programmatically commit our communities to a greater 75% goal without additional research and financial planning that will occur during the first five years of the planning period.

Further research, planning and detailed financial projections will guide SWACO towards providing the additional capacity and programming to achieve the 75% Strategic Goal. Enhanced strategies will be detailed in each five-year plan rewrite and future Appendix H-9s will be amended accordingly.

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. 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. Projections are detailed in Appendix G.

Table K-1a Residential Commercial Annual Rate of Waste Reduction

Year	Population	Recycled	Disposed	Total Generated	Waste Reduction & Recycling Rate (%)	Per Capita Waste Reduction & Recycling Rate (ppd)
2021	1,383,836	986,865	1,233,339	2,220,204	44.4%	3.91
2022	1,406,721	1,010,787	1,258,094	2,268,881	44.6%	3.94
2023	1,429,607	1,036,128	1,283,348	2,319,477	44.7%	3.97
2024	1,452,492	1,062,725	1,309,113	2,371,838	44.8%	4.01
2025	1,471,521	1,090,787	1,335,398	2,426,185	45.0%	4.06
2026	1,486,834	1,126,020	1,362,215	2,488,235	45.3%	4.15
2027	1,502,148	1,167,960	1,375,894	2,543,853	45.9%	4.26
2028	1,517,461	1,217,789	1,389,711	2,607,500	46.7%	4.40
2029	1,532,774	1,276,614	1,401,146	2,677,760	47.7%	4.56
2030	1,548,088	1,332,110	1,412,681	2,744,791	48.5%	4.71
2031	1,561,579	1,383,211	1,424,317	2,807,529	49.3%	4.85
2032	1,575,070	1,434,640	1,430,422	2,865,062	50.1%	4.99
2033	1,588,561	1,479,816	1,436,552	2,916,368	50.7%	5.10
2034	1,602,052	1,524,654	1,442,710	2,967,364	51.4%	5.21
2035	1,615,543	1,561,656	1,448,894	3,010,550	51.9%	5.30
2036	1,627,428	1,599,670	1,455,104	3,054,775	52.4%	5.39
2037	1,639,313	1,628,955	1,461,342	3,090,297	52.7%	5.44
2038	1,651,199	1,658,860	1,467,607	3,126,467	53.1%	5.50

Source:
Population – Appendix C, Table C-1
Recycled – Appendix E, Table E-7 and E-8
Disposed – Appendix D, Table D-6

Sample Calculation:
Total Generated = Recycled + Disposed
Waste Reduction & Recycling Rate = Recycled / Total Generated
Per Capita Waste Reduction & Recycling Rate = (Recycled x 2000 lbs./ton) / (Population x 365 days)

The District achieved 44.4% residential/commercial waste reduction and recycling rate in the reference year which meets the 25% state goal. As shown in Table K-1, the District demonstrates it will continue to meet or exceed the 25% residential/commercial waste reduction and recycling rate goal.

The following table presents a comparison between the projected 2021 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	Current Approved Plan (Approved 2/28/18)	Actual 2021 Data
Year	2021	2021
Population	1,292,714	1,383,836
Recycling	533,439	656,739
Scrap Tires	18,455	23,510
Yard Waste Composting	198598	306,616
Tons Waste Reduction	750,492	986,865
Landfill	932,814	1,233,339
Total Generated	1,683,306	2,220,204
Waste Reduction Rate	44.6%	44.4%
Per Capita Waste Reduction (ppd)	3.18	3.91

In SWACO's currently approved Plan, the waste reduction and recycling rate for the residential/commercial sector in 2021 was projected to be 44.6%. The actual waste reduction and recycling rate for the reference year was 44.4%.

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 533,439 tons in the current Plan. However, residential curbside recycling programs diverted approximately 23% more materials than projected. Plan projections did not include tonnage projections for the City of Columbus' non-subscription curbside recycling program, which will change from bi-weekly to weekly in 2023. SWACO's waste consortium program continues to 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.

Adoption of the 2020 State Plan removed the 66% industrial reduction and recycling rate goal. As shown in Table K-2a, the District demonstrates diversion rates over 90.1%.

Table K-2a Industrial Annual Rate of Waste Reduction

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2021	326,421	35,920	362,340	90.1%
2022	330,568	35,920	366,488	90.2%
2023	334,768	35,920	370,687	90.3%
2024	339,021	35,920	374,941	90.4%
2025	347,635	35,920	383,555	90.6%
2026	356,469	35,920	392,388	90.8%
2027	365,527	35,920	401,446	91.1%
2028	374,814	35,920	410,734	91.3%
2029	393,862	35,920	429,782	91.6%
2030	413,878	35,920	449,798	92.0%
2031	413,878	35,920	449,798	92.0%
2032	413,878	35,920	449,798	92.0%
2033	413,878	35,920	449,798	92.0%
2034	413,878	35,920	449,798	92.0%
2035	413,878	35,920	449,798	92.0%
2036	413,878	35,920	449,798	92.0%
2037	413,878	35,920	449,798	92.0%
2038	413,878	35,920	449,798	92.0%

Source:
Recycled – Appendix F, Table F-4 and F-5
Disposed – Appendix D, Table D-3

Sample Calculation:
Total Generated = Recycled + Disposed
Waste Reduction & Recycling Rate = Recycled / Total Generated

The following table presents a comparison between the projected 2021 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	Current Approved Plan (Approved 2/28/18)	Actual 2021 Data
Year	2021	2021
Recycling	228,338	326,421
Landfill	41,141	35,920
Total Generated	269,479	362,340
Waste Reduction Rate	84.7%	90.1%

In SWACO's current approved Plan, the waste reduction and recycling rate for the industrial sector in 2021 was projected to be 84.7%. The actual waste reduction and recycling rate during the reference year was 90.1%.

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 52% by the year 2027.

Table K-3 Annual Rate of Waste Reduction: Total Solid Waste

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2021	1,313,286	1,269,259	2,582,545	50.9%
2022	1,341,355	1,294,013	2,635,369	50.9%
2023	1,370,896	1,319,268	2,690,164	51.0%
2024	1,401,746	1,345,033	2,746,779	51.0%
2025	1,438,422	1,371,318	2,809,740	51.2%
2026	1,482,489	1,398,134	2,880,623	51.5%
2027	1,533,486	1,411,813	2,945,299	52.1%
2028	1,592,603	1,425,630	3,018,234	52.8%
2029	1,670,476	1,437,066	3,107,542	53.8%
2030	1,745,988	1,448,601	3,194,589	54.7%
2031	1,797,090	1,460,237	3,257,327	55.2%
2032	1,848,518	1,466,341	3,314,860	55.8%
2033	1,893,694	1,472,472	3,366,166	56.3%
2034	1,938,532	1,478,629	3,417,162	56.7%
2035	1,975,534	1,484,813	3,460,348	57.1%
2036	2,013,549	1,491,024	3,504,573	57.5%
2037	2,042,833	1,497,262	3,540,094	57.7%
2038	2,072,738	1,503,526	3,576,264	58.0%

Recycled – Appendix F, Table F-4 and F-5 and Appendix E, Table E-4 and E-5
Disposed – Appendix D, Table D-3

Sample Calculation:
Total Generated = Recycled + Disposed
Waste Reduction & Recycling Rate = Recycled / Total Generated

The combined Waste Reduction and Recycling Rate for residential/commercial and industrial sectors is shown in Table K-3. For the reference year, the overall rate was 50.9% and is projected to decrease to 58.0% by the end of the planning period. 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

The 2020 State Solid Waste Management Plan requires districts to demonstrate compliance with nine goals as outlined in Chapter 1 Para. D Waste Reduction and Recycling Goal. Goals three and four are addressed in Appendix L:

Goal 3: The SWMD shall provide the following required programs:
1. A website;
2. A comprehensive resource guide;
3. An inventory of available infrastructure; and
4. A speaker or presenter.

Goal 4: Outreach and Education
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 EDUCATION PROGRAM

Website

Name	Start Date	End Date	Goal
District Website and Web Presence	Ongoing	Ongoing	3

SWACO maintains a primary organizational website, five topic-specific educational microsites and an annual published impact report:

- Organizational Website
  https://www.swaco.org/

- Organics Management
  https://savemorethanfood.org/

- Residential Recycling Education
  https://recycleright.org/

- Annual Impact Report
  https://swacoimpactreport.org/

- Illegal Dump Abatement
  https://www.itsacrime.org/report-littering.php

Together, these websites contain the necessary information to adequately describe SWACO's basic programs and their purposes. In its current state the websites achieve the minimum requirements for educational programs as

there is information on recycling & food waste programs, yard waste, household hazardous waste (HHW) and landfill tours.

SWACO's websites will continue to serve as a one-stop source of information for constituents of the district. SWACO will explore best practices for improving the existing searchable reuse and recycling database, new layouts for accessing information, and enhanced visuals that convey waste reduction and diversion practices for all residents. The website will also help to provide better analytics and tracking for monitoring and measuring the impacts of programs, initiatives, and educational campaigns.

SWACO also has an active social media presence on Facebook, YouTube, LinkedIn, Instagram, and Twitter. This social media presence provides similar information to the organizational website:

https://www.facebook.com/SWACO.ORG/

https://www.linkedin.com/company/solid-waste-authority-of-central-ohio/

https://www.instagram.com/swaco_green/?hl=en

https://twitter.com/swacogreen

https://www.youtube.com/@swacolandfill

SWACO employs a communications manager and administrator to keep the websites up to date. Website and social media reach numbers have grown rapidly. In 2022, the four websites totaled over 23,000 visitors a month or 250,000 visitors during the year. 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 2023, SWACO will be undertaking a reorganization of swaco.org and making minor updates to savemorethanfood.org and recycleright.org to enhance user experience.

SWACO also employs a full-time Environmental Educator. The duties of the educator include conducting adult education, teacher, and school-aged classes that focus on recycling, reducing waste, and composting.

Comprehensive Resource Guide

Name	Start Date	End Date	Goal
Resource Guide	Ongoing	Ongoing	3

SWACO's website provides a comprehensive resource guide and substitutes for a print format. SWACO has chosen not to publish a print version to save paper and to allow for the guide to be updated and refreshed in live time providing the most accurate and timely information.

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. Resources include the Recycling & Reuse Search tool on the SWACO website, recycleright.org, that had over 193,000 page views in 2021. In addition, Save More Than Food (savemorethanfood.org) is a resource guide focused on reducing food waste at home, work, and school.

SWACO will evaluate ways to improve its searchable resource guide / database as part of its website redesign in 2023. SWACO will also 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.

Inventory of Available Infrastructure

Name	Start Date	End Date	Goal
Inventory or Programming and Facilities	Ongoing	Ongoing	3

Like the resource guide, SWACO has a comprehensive listing of 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. The solid waste plan update on the website also serves as an infrastructure list for SWACO's reference year.

Speaker/Presenter

Name	Start Date	End Date	Goal
Speaker/Presenter Programming	Ongoing	Ongoing	3

SWACO has a full-time outreach specialist 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.

SWACO has several qualified staff available to speak, based on the technical expertise needed. SWACO participated in 12 events that reached 358 residents in 2021. The growth of webinars and virtual programming additionally enabled SWACO to host 25 webinars that reached 617 residents. SWACO will also consider adding a speaker's bureau but staffing vacancies prohibited the addition in the past.

During the planning period, SWACO plans to enhance the effectiveness of future outreach by seeking out audiences and developing specialized speaking engagements that raise awareness about new initiatives and key events that will be taking place.

B. OUTREACH AND EDUCATION – OUTREACH PLAN AND GENERAL EDUCATION REQUIREMENTS

Goal 4 requires SWACO to provide education, outreach, marketing, and technical assistance regarding reduction, recycling, composting, reuse, and other alternative waste management methods to target audiences using best practices. Plan Format 4.1 requires the outreach and marketing plan needs to have the following components:

1. Five target audiences as identified in Ohio EPA Format 4.1.
2. Follow basic best practices when developing and selecting outreach programs.
3. Outreach priority.
4. Education and outreach programs to all appropriate audiences in the context of the priority using social marketing principles and tools.

The outreach and marketing plan needs to demonstrate these best practices

- Demonstrate that the SWMD will address at least five target audiences;
- Explain how the SWMD will align its outreach and education programs with recycling opportunities (both existing and needed); and
- Explain how the SWMD will incorporate principles and tools for changing behavior into the outreach and marketing plan.

Overview

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 resources 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 always contain accurate and up-to-date information as the website serves as the primary hub of information. Education also goes together with operational and programmatic changes.

SWACO can be the conduit for waste reduction, reuse, and recycling education messaging. To make communication successful it is best served by focusing on creating 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. Similarly, 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. To align with Format 4.1 the SWMD's existing programs were organized by the target audience. Some of the existing SWMD programs cross several target audiences.

Detailed Description of Programs

The target audiences, served by our programming, are abbreviated as follows:

- R – Residents
- S – Schools
- I – Industries
- ICB – Institutional-Commercial Businesses
- M – Municipalities
- CLEO – Community Leaders and Elected Officials

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:

Advertising
(R, CLEO) – 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.

Annual Report
(R, S, I, ICB, M, CLEO) – 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
(R, S, I, ICB, M, CLEO) – Brief summary reports where SWACO's education and/or technical assistance has resulted in positive and replicable results.

Collateral Materials
(R, S, I, ICB, M, CLEO) – Produce and disseminate educational collateral materials that can be ordered by, and delivered to, SWACO stakeholders. These materials will describe SWACO's diversion programs, these may include the Drop-off Recycling Program, Environmental Crimes Task Force, Household Hazardous Waste Program, Landfill Tours, and the Yard Waste Diversion Program.

Data Collection and Management
(R, S, I, ICB, M, CLEO) – The collection, analysis and management of data is central to SWACO's success in understanding and managing the waste stream. 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.

Digital Communications
(R, S, I, ICB, M, CLEO) – 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 can 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 Media Tool Kits
(R, S, I, ICB, M, CLEO) – 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.

District-wide Educational Campaigns
(R, S, I, ICB, M, CLEO) – Campaigns that use persuasive arguments and social influence to change behavior. Multiple media outlets will be used, such as billboards, radio ads, print, social media, and other specialized approaches. Campaign topics will align with other strategic programs and initiatives included in Appendix I and through market research. 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
(R, S, I, ICB, M, CLEO) – 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
(R, S, I, ICB, M, CLEO) – Provide presentations customized for the audience that is requesting the presentation.

Landfill Tours
(R, S, I, ICB, M, CLEO) – Tours of the Franklin County Sanitary Landfill are available to school groups, clubs and other interested individuals and organizations. 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 outlook for waste disposal in Franklin County. Immediately following the presentation at the Education Center visitors will enter the landfill site, and at the end of the tour they are offered a Landfill Poster.

Market Research
(R, S, I, ICB, M, CLEO) – 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.

Meetings and Special Events
(R, S, I, ICB, M, CLEO) – A variety of in-person events ranging from informal peer to peer discussions and planned roundtables to recognition events and business symposiums where topics can include best practice, contract assistance, information on local/national trends.

Recognition Program
(S, I, ICB, M, CLEO) – A program to recognize leadership in waste reduction and diversion. The potential exists for SWACO to either nominate an entity or 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.

Social Media
(R, S, I, ICB, M, CLEO) – SWACO's social media presence includes Twitter, Facebook, LinkedIn, Instagram, and YouTube. There is potential for increasing reach to target audiences via social media through regular updates, engaging content and a friendly voice.

Tabling
(R, S, I, ICB, M, CLEO) – 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
(R, S, I, ICB, M, CLEO) – An activity that raises awareness of SWACO's programs and services within a specific sector.

Webinars (R, S, I, ICB, M, CLEO) – A web-based seminar that offers insight into a particular issue that is important to a target audience and/or allows SWACO to highlight its programming. These can be recorded and archived on the website for future viewing.

Workshops (R, S, I, ICB, M, CLEO) – 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.

Residents

Education/Outreach Program	Description of Activities
Residential	
General Recycling Education	Recycleright.org
Anti-Litter, illegal dumping, and litter reporting	Environmental Crimes Task Force outreach and itsacrime.org illegal dumping reporting form
Electronics recycling	Businesses that accept e-waste are listed on recycleright.org
Scrap tire	Businesses that accept tires are listed on recycleright.org
Organics/food waste promotion	Save More Than Food (savemorethanfood.org) promotes awareness of the prevalence of wasted food.
Educational collateral	Printed 'slim cards' that describe SWACO diversion programs

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.

Needs of the Audience

People are busier than ever and reaching them where they are instead of making them come to SWACO is an important strategy for meeting their needs. Community events provide an excellent opportunity for SWACO to interact with people in a neutral setting. SWACO staff tabled (set up an informational booth at an existing event) at 11 events and reached over 1,600 residents using the educational collateral that describes related programs and services. This collateral includes cards with succinct information about HHW, recycling drop-off, ECTF, landfill tours, business recycling and at-home composting.

Wasted food has emerged as an opportunity for education and outreach by all municipal solid waste and recycling programs, including SWACO. The savemorethanfood.org campaign provides resources and education for residents to reduce food waste. In addition, businesses in Central Ohio are being interviewed to help understand which industries are generating high amounts of food waste, which are already implementing programs and changes to business practices to reduce food waste, and what additional tools or services are needed to support this effort. This analysis will help determine programs, technical assistance, and resources that SWACO can

provide to fill the gaps in commercial and institutional food waste reduction efforts. The research is expected to conclude in 2022.

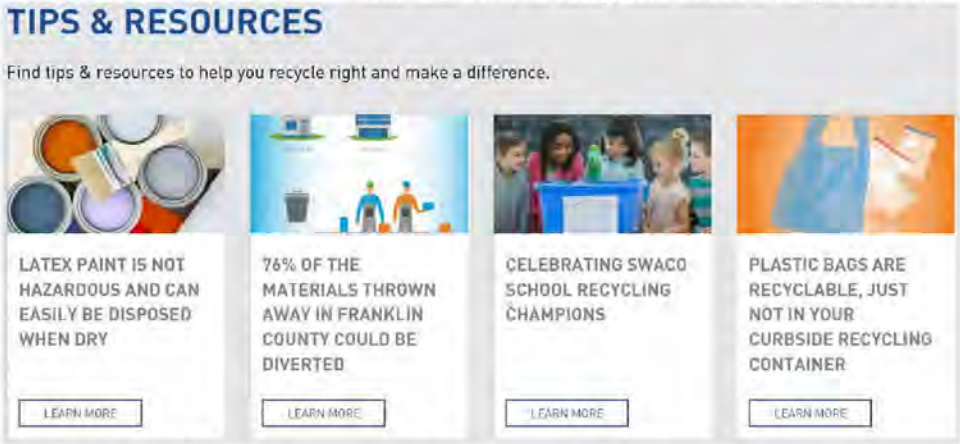
SWACO has had great success at reaching residents and other stakeholders through the website and social media. The district has a Facebook page and uses it to share information such as collection events. SWACO also has an active presence on YouTube, LinkedIn, Instagram, and Twitter. This social media web presence provides similar information to the organizational website.

The District will continue to use the website and Facebook as a tool to provide information to residents. SWACO's websites will continue to serve as a one-stop source of information for constituents of the district. SWACO will explore best practices for improving the existing searchable reuse and recycling database, new layouts for accessing information, and enhanced visuals that convey waste reduction and diversion practices for all residents. The website will also help to provide better analytics and tracking for monitoring and measuring the impacts of programs, initiatives, and educational campaigns.

Consistent/Frequent Messaging

All social media postings and other promotional material will have the same District logo and branding. Messages are kept simple, concise, and repetitive for residents to remember the main message being communicated

There is much controversy over the effective frequency needed for messaging. Depending on the platform and the message, consumers must be exposed to anywhere from three to as many as six to twelve messages before they have thoroughly absorbed it. Regardless of the number, consistent, familiar messaging to residents creates a long-term relationship where SWACO becomes a trusted source of information about waste and recycling. This relationship takes time and persistence to create, as dynamics of the community will continue to shift based on local, regional, and national influences. This strategy was used throughout the various communications tasks.



A district-wide education campaign was created to bring awareness of the importance of waste reduction and diversion (reuse, recycling, composting, etc.) This is aimed at long-term behavior change as the campaign will carry over multiple years. It was active in Q2-Q4 of 2021 and generated over 51 million impressions and drove 34 thousand visitors to recycleright.org. It featured radio ads in Spanish and a 'Sustainability Edition' of the Columbus African American News Journal. An additional eight communities, for a total of 40 thousand residents, received mailers and were targeted by social media. Throughout the campaign, a consistent brand carried the RecycleRight, Make a Difference message. Since launching Recycle Right in 2018, more than half of Central Ohio's 41 communities, representing 130,000 households, have participated in this recycling education program. The campaign website, RecycleRight.org, is visited 9,200 times a month and important recycling advertisements

have been seen 175 million times thanks to strategic collaborations with 10TV, the Dispatch Media Group, Columbus Underground, Urban One radio and many other local media partners.

Tracking Results

Electronic means of communication provide unique opportunities to measure outcomes of various educational efforts. Websites and other electronic communication have become a primary method of contact for businesses and municipalities alike. As an example, the District can obtain recycling tonnage for the curbside and drop-off programs and combine that data with statistics of interactions from social media and receive the number of views from posts.

SWACO's website and social media pages are platforms for seasonal, rotating messaging to residents. To develop an outreach and education strategy on proper yard waste management, SWACO issues guidance on how to properly prepare yard waste for collection. This seasonally pertinent information is shared on social media, on SWACO's website and sent in a special email notification. To enable hyper-local messaging, SWACO also provides the same graphics to communities in the SWD for use in their own communications.

The recycleright.org website offers a single point of guidance for residents to search for recycling and disposal options for hundreds of products and materials. It lists over 300 locations for proper recycling, reuse, or disposal. Connecting residents to local recycling and disposal options that are available to them is an important function of the SWACO website. A search tool enables residents to search for outlets for recycling tires, including local tire retailers that accept tires for a small fee. Recycleright.org provides a list of 43 organizations and businesses that offer electronics collection, including fees, drop-off location, and hours of operation.

SAVE MORE THAN FOOD
MAKE A DIFFERENCE

The web based Save More Than Food campaign (savemorethanfood.org) was created to increase awareness of food waste in central Ohio. The site encourages residents to reduce food waste using specific resources now available in the district. To date, 32 partner organizations have used the resources and they have been seen more than 17 million times through 133,000 clicks to the new site. In tandem with the website, SWACO partially supported 9 community drop-off locations which collectively diverted more than 400,000 pounds of organic material from landfill. This resulted in a 21% reduction in the amount of food waste generated at the household level, due to the 40% increase in usage of the drop-off locations, as measured by The Ohio State University and Upper Arlington. Results have been impressive:

21% of households reduced the amount of food waste they created

40% increase in the use of the city's food waste drop off program

SWACO distributed the 'From Waste to Resources' e-newsletter bi-weekly, for a total of 27 editions, to more than 10,000 subscribers.

To complement the rest of the outreach efforts and provide a multi-sensory experience, SWACO hosts tours of the Franklin County Sanitary Landfill for all audiences. More than 2,500 people participated in 71 tours, which were provided both in-person and virtually between July and December.

SWACO's annual Impact Report communicates the results of the investments in education and outreach. By tracking participation, tonnage, and reach, SWACO can have confidence that their messages are creating the change that was intended.

Community Education & Engagement

2,500 PEOPLE TOOK A LANDFILL TOUR

600 PEOPLE PARTCIPATED IN A WEBINAR

$264,450 AWARDED IN GRANT FUNDING

54 INQUIRIES FROM BUSINESSES WERE HANDLED

120 COMPOSTING BINS AND TRAININGS DISTRIBUTED

SWACO FROM WASTE TO RESOURCES

Recycling Education & Engagement

130 MILLION NUMBER OF TIMES SWACO WAS SEEN IN THE NEWS

SWACO'S WEBSITES HAD **218,900** VISITORS

1,600+ PEOPLE REACHED BY STAFF AT TABLING EVENTS

18,000 INBOXES RECEIVED OUR E-NEWSLETTER

3,500 PEOPLE FOLLOWING US ON SOCIAL MEDIA

130,000 HOUSEHOLDS HAVE RECEIVED RECYCLING POSTCARDS OR MAGNETS

Special Waste Collections

SWACO actively monitors the success of the Environmental Crimes Task Force of Central Ohio (ECTF), which aims to promote anti-litter efforts, bring awareness to illegal dumping convictions as a means of deterring other incidents, and promote the reporting of litter. As part of the support, SWACO maintains the itsacrime.org website, which received 715 complaints in 2021 that led to 10 prosecutions and 17 convictions (with some carryover from previous years). The conclusion of these cases returned $76,005 in fines and court costs, ordered $335,540 in restitution, and assigned 1,556 hours of community service.

Conclusions

To measure the 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.

SWACO can 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 focus for reaching residents is 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. SWACO has detailed the programs and strategies to reach and engage residents in Appendix H Section 12 Education and Outreach. The primary activities detailed include:

- Perform market research
- Create and deliver targeted outreach campaigns (e.g., Residential Campaign)
- Convene meetings and special events
- Develop and implement district-wide educational campaigns
- Offer tips and advice through digital communications
- Disseminate news and information through earned media and social media
- Offer informational presentations
- Promote diversion programs through advertising

- Provide educational collateral materials
- Participate in special event tabling
- Offer workshops and/or webinars
- Host landfill tours of Franklin County Sanitary Landfill
- Publish an annual Community Impact Report

Schools

Education/Outreach Program	Description of Activities
Schools	
Targeted outreach	How To Guide for successful recycling programs. Annual newsletter and social media posts promoting programs. Teacher lesson plans and school activities to help teachers teach the importance of recycling Web-based activities for at home learners Resources on preventing food waste, including teacher lesson plans, student activities, and guidance on how to start share tables in school cafeterias.
Presentations & workshops	Presentations, educational video, and virtual & in-person tours of facilities to over 2,159 students
Audience-specific collateral	Classroom activities, signage, best practice guidance
Community events	Staffed a booth/table to provide school-related programs for parents to take back to teachers/school administrators
Case studies	Published video interviews with schools, grant reports showcasing model programs, and best practice guidelines on website.
School Consortium Program	Collaborative bidding program where school districts in Franklin County cooperatively bid for trash and recycling services, leveraging their buying power to receive high-quality, low-cost recycling services.
School District Champions	Provides financial assistance to purchase indoor recycling containers for school districts that work with SWACO to implement best practices in their school districts. The program also provides recognition to schools that complete the program.

School teachers, students, and facility managers within the District, including those from public and private schools, are a priority target audience for SWACO. Improving outreach and education to this audience will result in increased participation in existing and new initiatives, a measurable improvement in diversion, and reduced contamination in the recycling stream.

Needs of the Audience

Schools are dynamic environments with enormous potential to train youth to be recycling champions within their homes and communities. However, school administrators and teachers have many fundamental obligations that are mandated by federal and/or state agencies that take priority over supplemental curriculum. They also have limited budgets for field trips or other activities that would require travel, substitute teachers, or the need to rearrange school schedules. As such, they are uniquely positioned to provide real-world learning opportunities but generally need resources that are easy to implement, age appropriate, and aligned to curriculum standards. SWACO understands this and has designed programs to be flexible to meet the changing needs and budgets of schools. SWACO partners with community organizations to identify mutually beneficial programs that will create more opportunities for schools to participate. Partnerships include Audubon Society, Columbus GreenSpot, Keep Columbus Beautiful, 'My House' at the Columbus Zoo & Aquarium, Center of Science and Industry Columbus, Junior Achievement, PAST Foundation, and King Arts Complex.

To complement the promotion of relevant resources and services, SWACO provides additional educational collateral materials describing programs suitable to schools. Downloadable classroom activities, signage, and best practice documents for school recycling and school food waste prevention and diversion are available on SWACO's School Recycling Resources and School Food Waste Resources webpages. In lieu of compiling case studies of best practices, video interviews were published on SWACO's Community Waste Reduction Grant (CWRG) and School Food Waste Resources webpages showcasing schools with a focus on recycling and food waste composting. Historical reports and Best Practice Guides for School Recycling and Food Waste Prevention are accessible for download on the School Recycling Resources and School Food Waste Resources webpages. Facility tours provide a tangible opportunity for schools to experience where their trash or recycling goes when it goes "away". Franklin County Sanitary Landfill hosts educational tours for students to experience the impacts of waste and the opportunities for increased waste reduction. A total of 58 landfill tours with 2,159 students were completed in 2021, with virtual tours being offered from July through December.

The impact that COVID-19 had on schools cannot be over-emphasized and teachers continue to balance the emotional and social needs of students with the learning standards required by the state without knowing what the learning environment will be from day to day. To ensure that SWACO is meeting the needs of the school audience, focus groups comprised of formal and informal educators will be considered, potentially in partnership with the existing community organizations with which SWACO already collaborates. These may result in different priorities and techniques for teaching and learning.

Behavior Change

Though difficult to gauge, anecdotal evidence can provide valuable assessments of behavior change. Special events offer a way for SWACO to reach people who might not otherwise participate in traditional programming and allow SWACO staff to interact with participants to gather honest feedback that assesses behaviors and change in behavior over time. SWACO participated in tabling events (hosting an educational booth with staff present to interact with passers-by) at 11 events that reached a total of 1,613 residents. While not specifically targeting schools, the programming offered to schools was included in the tabling resources so parents, teachers and others connected to a school could take the information back with them. Workshops, presentations, and webinars that align with state curriculum standards also provide an opportunity for educators to promote waste reduction and diversion activities while still meeting their school's mandated educational requirements. SWACO provided presentations to Beautiful Savior Lutheran Church and School and educational video on the basics of waste reduction and recycling at the Franklin County Fair. Repeated engagement with schools can create the opportunity to better understand the barriers to implementing programs that create lasting change.

Consistent/Frequent Messaging

A district-wide education campaign was created to bring awareness of the importance of waste reduction and diversion (reuse, recycling, composting, etc.) This is aimed at long-term behavior change as the campaign will carry over multiple years. It was active in Q2-Q4 of 2021 and generated over 51 million impressions and drove 34 thousand visitors to recycleright.org. It featured radio ads in Spanish and a 'Sustainability Edition' of the Columbus African American News Journal. An additional eight communities, for a total of 40 thousand residents, received mailers and were targeted by social media. Throughout the campaign, a consistent brand carried the Recycle Right, Make a Difference message.

There is much controversy over the effective frequency needed for messaging. Depending on the platform and the message, consumers must be exposed to anywhere from three to as many as six to twelve messages before they have thoroughly absorbed it. Regardless of the number, consistent, familiar messaging to residents creates a long-term relationship where SWACO becomes a trusted source of information about waste and recycling. This relationship takes time and persistence to create, as dynamics of the community will continue to shift based on local, regional, and national influences. This strategy was used throughout the various communications tasks.

Tracking Results

To measure the 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 changes or knowledge goals were met. SWACO will also track the number of participants engaging in SWACO programs (presentations, tours, special events, etc.).

Conclusions

Schools in the District have a wide range of educational and logistical needs for environmental issues. 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.

The School Recycling Champions Program, food waste resources for schools, and landfill tours were promoted through an annual newsletter and social media posts. The School Consortium program assisted schools with competitively bidding trash and recycling services in 9 districts.

SWACO's annual Impact Report effectively communicates the results of the investments in school education and outreach. By tracking participation, tonnage, and reach, SWACO can have confidence that their messages are creating the change that was intended. Example graphics in the 2021 Impact Report can be found in the 'Residents' section.

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. One focus for reaching schools is surveying educators about SWACO methods of promoting its services to schools and evaluating their needs in meeting State of Ohio curriculum requirements and functionality. The result of stronger reach to more educators is an increased awareness about SWACO's offerings, especially landfill tours, informational presentations, and meetings with school administrators, teachers, and students to address the diversion of materials from schools, and this will lead to increased rates of program participation. SWACO has detailed the programs and strategies to reach and engage residents in Appendix H Section 12 Education and Outreach. The primary activities detailed include:

- Perform market research

- Convene meetings and special events
- Develop and implement district-wide educational and outreach campaign (e.g., Teachers Campaign)
- Offer tips and advice through digital communications
- Disseminate news and information through earned media and social media
- Offer informational presentations
- Offer workshops and/or webinars
- Provide educational collateral materials
- Participate in special event tabling
- Host landfill tours of the Franklin County Sanitary Landfill
- Develop and implement a recognition program
- Develop and promote case studies on best practice
- School Consortium

Industries

Education/Outreach Program	Description of Activities
Industries	
Targeted outreach campaign	Extensive market research, including surveys and focus groups, to identify needs and to develop and offer corresponding assistance. Partnership with Columbus Chamber of Commerce to reach businesses, including webinars promoting SWACO programs.

	Target includes industries and businesses that are classified as manufacturers.
Speaker/Presenter	Recycle Right at Work webinar series
Recognition program	Continued to develop and pilot Business Recycling Champion Program. Full implementation will come in 2022.
Audience-specific collateral	Further developed Business Recycling Toolkit on website; posted webinars for passive viewing

Industries within the District, specifically businesses that are classified as manufacturers, are a priority target audience for SWACO. Improving outreach and education to this audience will result in increased participation in existing and new initiatives, a measurable improvement in diversion, and reduced contamination in the recycling stream.

Needs of the Audience

SWACO employs a business recycling administrator to work with commercial and industrial members of the community. The Industrial Sector generates unique types and volumes of waste that require specific outreach efforts by SWACO. A series of webinars, presentations, and educational opportunities are offered to this audience to specifically address this segment's unique needs. Due to the continued pandemic disruption to business, many programs that were initially expected to take place in person were transitioned to virtual platforms. The Recycle Right at Work webinar series kicked off in December 2021 with 22 businesses attending the live event, and the recordings made available to others on the SWACO website. To ensure direct support, SWACO's business recycling administrator participates in three separate virtual engagements as a presenter/panelist. This engagement resulted in 54 unique inquiries regarding business recycling between July and December.

Behavior Change

The Business Recycling Toolkit on SWACO's website provides on-demand resources for industrial and other users. To recognize businesses that have taken proactive steps toward waste reduction and recycling, the Business Recycling Champion Program offers an incentive for businesses of all types to earn bragging rights among their peers and their customers. Full implementation of the Business Recycling Champion Program will come in 2022. As businesses begin to implement the resources and see successes they will be featured in business-focused case studies, which affirm the per-to-peer benefits of heightened awareness of sustainability in their industry.

Consistent/Frequent Messaging

SWACO has committed to creating and delivering a targeted outreach campaign aimed at manufacturing industries in the district to inform them of relevant resources and services. To that end, SWACO has partnered with the Columbus Chamber of Commerce to reach businesses of all types. SWACO was featured in the newsletter of the Columbus Regional Logistics Council (comprised of 250 members) explaining the recycling opportunities available to businesses. Business webinar events are promoted by the Columbus Chamber and SWACO sends the Waste to Resources e-newsletter to 10,000+ subscribed members of the SWACO business recycling opportunities.

Tracking Results

SWACO presently lacks data on industrial 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.

Electronic means of communication provide unique opportunities to reach industrial locations with information on available resources and education. To measure the success of programming, SWACO will deliver and analyze all electronic communications, pre- and post-engagement surveys to help measure the effectiveness of our programming and provide an opportunity to see if behavior changes or knowledge goals were met. SWACO will also track the number of industrial participants engaging in SWACO programs (presentations, tours, special events, etc.).

Conclusions

The industrial sector, a new target for SWACO, will see increased focus over the plan period. To fully understand this audience SWACO will need to conduct extensive 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. Strategies will include:

- Perform market research
- Create and deliver a targeted outreach campaign (e.g., Industry Campaign)
- Develop and implement district-wide educational campaigns
- Offer tips and advice through digital communications
- Disseminate news and information through earned media and social media
- Offer informational presentations
- Provide customizable digital media tool kits
- Convene meetings and special events
- Offer workshops and/or webinars
- Provide educational collateral materials describing programs
- Participate in special event tabling
- Host landfill tours of the Franklin County Sanitary Landfill
- Create a customizable waste widget
- Develop and implement a recognition program
- Develop and promote case studies on best practice

Institutions & Commercial Businesses

Education/Outreach Program	Description of Activities
Institutional & Commercial Businesses	
Business forums	Recycle Right at Work webinar series
Business recognition	"Caught Blue Handed" social media campaign, Business recycling Champion logo for in-business display
Speaker/Presenter	Continued to develop and pilot Business Recycling Champion Program. Full implementation will come in 2022.
Recognition program	Continued to develop and pilot Business Recycling Champion Program. Full implementation will come in 2022.
Digital toolkit	Customizable flyers, labels, templates to simplify recycling program rollout
Convene stakeholders	In lieu of in-person meetings, webinars and one-on-one interactions were primarily used to offer resources
Technical Assistance	Assist businesses to create new recycling programs, improve existing programs, and find solutions for hard to recycle materials.

Institutional and Commercial Businesses within the District, which includes commercial businesses, office buildings, stadiums, event venues, hospitals 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.

Needs of the Audience

Sixty percent of the waste received at the Franklin County Sanitary Landfill was generated by businesses (the commercial/institutional sector). To better understand the composition and characteristics of the materials disposed of in SWACO's waste stream, a waste characterization study was conducted in 2019 which determined that approximately 42% of the total commercial waste stream, or 290,000 tons a year, was recoverable through programs, services, and processing that is available today. Over 20% of commercial material disposed of was corrugated cardboard and recyclable paper alone. Over 14% was food waste. It is clear that there is a tremendous opportunity to divert more commercial/institutional waste from the landfill, and under this p.

In 2020 SWACO hired a full-time business recycling specialist, and in 2021 SWACO launched an online business recycling toolkit designed to help businesses design and launch successful recycling programs. In 2022 SWACO launched the first phase of a business recycling incentive program, which allows businesses to purchase recycling containers at significantly discounted prices. In 2023 a similar incentive program was launched for business recycling services.

The Commercial and Institutional Sector presents some of the most complex and difficult to address waste streams due to the variety of waste stream types, dynamic uses of the spaces, and the intensity and seasonality of the waste generated. To address this, SWACO committed to creating and developing a targeted outreach campaign aimed at commercial and institutional businesses in the district. The campaign intended to inform them of relevant resources and services. The pandemic affected the intensity of the outreach, but light promotion of the business resource took place in 2021 with more effort put toward refining, pilot testing, and improving upon the resources to ensure they were ready for businesses as they emerged stronger from the pandemic.

The Recycle Right at Work webinar series was initiated to serve businesses in a 30-minute lunch-and-learn format. These bi-monthly events have been well attended and are recorded for anyone seeking the content but unable to attend the live event. To ensure direct support, SWACO's business recycling administrator participates in three separate virtual engagements as a presenter/panelist. This engagement resulted in 54 unique inquiries regarding business recycling between July and December.

The SWACO websites provide many resources for all audiences to find resources and tools for waste reduction at their specific location. In the case of Commercial and Institutional Sector resources, an online digital toolkit for businesses includes a recycling plan template that is downloadable and customizable, allowing businesses to easily develop and document their recycling programs and efforts that increase awareness of waste diversion opportunities.

Behavior Change

Since SWACO employs a business recycling administrator to work with commercial and industrial members of the community, this staff person can gauge the barriers that are preventing institutional and commercial progress toward waste reduction goals. Whether cost, infrastructure, buy-in, or other issues are influencing success, the business recycling administrator can work directly with the audience to affect behavior change.

Measuring Outcomes

Launched toward the end of 2021 with full implementation in 2022, the Business recycling Champions Program business recognition program is intended to recognize businesses for their efforts toward reuse, recycling, composting and other waste reduction activities and encourage other businesses to follow their lead. In 2021, SWACO's "Caught Blue Handed" social media campaign recognized four businesses (Zipline, DSW, Wendy's and Root Insurance) for their efforts. As businesses begin to implement fully vetted resources and see successes they will be featured in business-focused case studies.

To further measure the 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 changes or knowledge goals were met. SWACO will also track the number of participants engaging in SWACO programs (presentations, tours, special events, etc.).

Consistent/Frequent Messaging

SWACO has committed to creating and delivering a targeted outreach campaign aimed at institutions, businesses and manufacturing industries in the district to inform them of relevant resources and services. To that end, SWACO has partnered with the Columbus Chamber of Commerce to reach businesses of all types. As me SWACO has committed to creating and delivering a targeted outreach campaign aimed at manufacturing industries in the district to inform them of relevant resources and services. To that end, SWACO has partnered with the Columbus Chamber of Commerce to reach businesses of all types. SWACO was featured in the newsletter of the Columbus Regional Logistics Council (comprised of 250 members) explaining the recycling opportunities available to businesses. Business webinar events are promoted by the Columbus Chamber and SWACO sends the Waste to Resources e-newsletter to 10,000+ subscribed members of the SWACO business recycling opportunities.

In addition, a district-wide education campaign was created to bring awareness of the importance of waste reduction and diversion (reuse, recycling, composting, etc.) that is appropriate for all types of businesses. This is aimed at long-term behavior change as the campaign will carry on over multiple years. It was active in Q2-Q4 of 2021 and generated over 51 million impressions and drove 34 thousand visitors to recycleright.org. It featured radio ads in Spanish and a 'Sustainability Edition' of the Columbus African American News Journal. Throughout the campaign, a consistent brand carried the RecycleRight, Make a Difference message.

Tracking Results

SWACO's annual Impact Report includes details of the institutional and commercial sectors. By tracking participation, tonnage, and reach, SWACO can have confidence that their messages are creating the change that was intended.

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. SWACO would need to pinpoint companies that would financially benefit from a diversion program, and then take a two-pronged approach of engaging the administration and facility managers. Building these relationships is critical to gain insight and perspective on the needs.

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 industries will have an increased awareness about SWACO's offerings that will lead to increased awareness of, and participation in, diversion programs.

In order to reach and engage Institutional and Commercial Businesses, SWACO will:

- Perform market research
- Create and deliver a targeted outreach campaign (e.g., Business Campaign)
- Develop and implement district-wide educational campaigns
- Provide customizable digital media tool kits
- Offer tips and advice through digital communications
- Disseminate news and information through earned media and social media
- Offer informational presentations
- Convene meetings and special events
- Offer workshops and/or webinars

- Provide educational collateral materials describing programs
- Participate in special event tabling
- Host landfill tours of the Franklin County Sanitary Landfill
- Promote technical assistance programing related to businesses and institutions (see Appendix I)
- Create a customizable waste widget
- Develop and implement a recognition program
- Develop and promote case studies on best practice

SAVE MORE THAN FOOD
MAKE A DIFFERENCE

Communities Leaders and Elected Officials

Education/Outreach Program	Description of Activities
Communities & Elected Officials	
Convene stakeholders	Annual virtual event with City Managers and Mayors
Case studies	Presentations by grant-funded communities to showcase best practices and implementation strategies
Presentations & workshops	Presentations by grant-funded communities to showcase best practices and implementation strategies
Digital toolkit	Customizable flyers, labels, templates to simplify recycling program rollout to 8 communities
Recognition program	Invite community representatives to present program overview and receive Certificate of Appreciation from SWACO Board.
Convene stakeholders	Annual virtual event with City Managers and Mayors
Case studies	Presentations by grant-funded communities to showcase best practices and implementation strategies

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 and others. Elected officials include city, county and state representatives who are elected to be public sector representatives. Each group is 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.

Needs of the Audience

Community members and elected officials are important stakeholders for SWACO to keep engaged and informed. Due to pandemic challenges, in-person meetings were difficult to host so SWACO elected to host a virtual event with City Managers and Mayors to maintain a connection to them despite the challenges of meeting. This enabled them to learn about programs and initiatives and provide input for future program and service development. For specific communities, SWANA collaborated with Whitehall, Gahanna, and Upper Arlington in presentations about their grant-funded (by SWACO), volume-based collection, cart tagging, and food waste drop-off programs at the MORPC Sustainability Conference. These presentations are accessible online and serve as case studies for other communities to learn from.

Behavior Change

SWACO's Community Recycle Right campaign included eight communities collectively reaching 40,000 households. This campaign included customizable flyers, labels, and other collateral to help communities increase awareness of waste diversion opportunities. In addition to these resources, SWACO offers resource materials that describe SWACO programs, including grant programs, the Consortium program, and others that educate elected officials on program offerings. Going forward, SWACO will be able to measure behavior change by tracking inquiries and action steps that other communities take after learning about success from their peers.

Congratulations to the city of Whitehall. Other communities interested in learning more about a volume-based collection program, can email info@swaco.org.

WHITEHALL

The city of Whitehall's recycling success is a wonderful example of how collaboration can lead to reduced costs and increased recycling for families and residents. In 2021, SWACO worked with the city to transition homeowners to a volume-based trash and recycling collection program that provides an incentive to reduce a household's trash bill by recycling more. The results are in and are impressive when compared with 2020 data:

- *95% participation in the curbside recycling program compared with 26% in 2020*
- *85% increase in the amount of material recycled*
- *21% decrease in trash*

To recognize contributing members of the elected officials and community leaders, SWACO periodically invites community representatives to SWACO's Board meetings to present their efforts and receive a Certificate of Appreciation from the Board. These 'shining star' moments affirm the positive response to SWACO's support of community-based initiatives toward waste reduction and recycling.

Consistent/Frequent Messaging

A district-wide education campaign was created to bring awareness of the importance of waste reduction and diversion (reuse, recycling, composting, etc.) This is aimed at long-term behavior change as the campaign will carry on over multiple years. It was active in Q2-Q4 of 2021 and generated over 51 million impressions and drove 34 thousand visitors to recycleright.org. It featured radio ads in Spanish and a 'Sustainability Edition' of the Columbus African American News Journal. Throughout the campaign, a consistent brand carried the RecycleRight, Make a Difference message.

Tracking Results

As a capstone to the efforts over the previous year, an annual report presents key highlights that SWACO achieved. The '2020 Community Impact Report', issued in 2021, offers insights into the effects of the pandemic on the waste stream, collaborative work on food waste, leveraging the waste stream to benefit economic development, and SWACO's efforts to reduce carbon emissions. Posted on its own website, www.swacoimpactreport.org, the report was distributed electronically to all elected officials and was viewed by more than 1,900 people with 3,800 page views.

SWACO's annual Impact Report effectively reports out the results of the investments in education and outreach which would be of keen interest to elected and appointed officials. By tracking participation, tonnage, and reach, SWACO can have confidence that their messages are creating the change that was intended. Example graphics in the 2021 Impact Report can be found in the 'Residents' section.

To measure the 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 changes or knowledge goals were met. SWACO will also track the number of participants engaging in SWACO programs (presentations, tours, special events, etc.)

Conclusions

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 SWACO's waste diversion goals will ultimately benefit District communities.

Community Leaders and Elected Officials look to SWACO to be their key resource for waste reduction and diversion programs and services. Existing relationships and programmatic focus have 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 SWACO's diversion programs. SWACO will conduct market research to gauge their individual interest in deeper engagement. Once evaluated, 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 empowered to assist in the development of a waste reduction plan within their communities. Education for elected officials will include basic information such as "easily accessible strategies" for waste diversion to assist policy makers in adopting effective programming consistent with the District objectives.
In order to reach and engage Community Leaders and Elected Officials, SWACO will:

- Perform market research
- Create and deliver a targeted outreach campaign (e.g., Leadership Campaign)
- Develop and implement district-wide educational campaigns
- Convene meetings and special events
- Offer tips and advice through digital communications
- Disseminate news and information through earned media and social media
- Offer informational presentations
- Provide customizable digital media tool kits which include talking points for their use
- Promote diversion programs through advertising
- Provide educational collateral materials describing programs
- Participate in special event tabling
- Offer workshops and/or webinars

- Host landfill tours of Franklin County Sanitary Landfill
- Publish an annual report

Programs and detailed in Appendix H Section 12 Education and Outreach.

C. OUTREACH PRIORITIES

Recycle Right and New Recyclable Materials Outreach Campaign

Name	Start Date	End Date	Goal
Recycle Right and New Recyclable Materials Outreach Campaign	Ongoing	Ongoing	3 & 4

Goal/Purpose: The District intends to improve the quality and increase the volume of recycled materials by aggressively promoting the Recycle Right Campaign district wide. The District will also encourage communities that have not yet promoted the Recycle Right program to assist in communication to their residents and businesses.

Targeted Audience: Residents, Community Leaders and Elected Officials

Strategy: The District will use the website and social media to share and remind residents of the correct materials which go into the recycling programs. The local MRF, Rumpke, has recently introduced new recyclable materials such as plastic cups, plastic tubs, and metal cups accepted at the MRF in Cincinnati. The District will assist in reaching out to communities to ensure their community website update and share the correct materials accepted list.

Milestones:

- Collaborate with local MRF to ensure District is sharing consistent messaging
- Consistent signage for correct materials and new materials education on all drop-off sites
- Outreach to all community leaders for website and consistent messaging
- Advertisements and consistent messaging about recycling right
- Increase in recycling tonnage reported by businesses on surveys
- Increase in relationships built with businesses, schools, and community officials

Implementation Responsibility: The District will be responsible for collaborating with the local MRF and sharing content on the District website and social media page. Communities will be responsible for updating their websites to the latest accepted materials list by the local MRF.

The Measure of Success: The District will look at recycling rates and request from haulers a summary of material quality overall once per year per community. The District can quantify the posts and views on social media over time.

Save More Than Food Campaign

Name	Start Date	End Date	Goal
Organics/Food Waste Reduction and Composting	Ongoing	Ongoing	3 & 4

Goal/Purpose: The District intends to increase the volume of food waste and organics recovery and recycling by aggressively promoting the Save More Than Food campaign district wide. The District will encourage all communities to assist in promoting the campaign to residents and food service businesses.

Targeted Audience: Residents, Schools, Food Service Businesses, and Community Leaders

Strategy: Wasted food recovery has emerged as an opportunity for education and outreach. The savemorethanfood.org campaign provides resources and education for residents to reduce food waste. In addition, businesses in Central Ohio are being interviewed to help understand which industries are generating high amounts of food waste, which are already implementing programs and changes to business practices to reduce food waste, and what additional tools or services are needed to support this effort. This analysis will help determine programs, technical assistance, and resources that SWACO can provide to fill the gaps in commercial and institutional food waste reduction efforts. The research is expected to conclude in 2022.

SWACO also provides educational collateral materials to schools including school food waste prevention and diversion on SWACO's School Recycling Resources and School Food Waste Resources webpages.

Milestones:

- Complete research on industries generating high amounts of food waste and best practices from those that are already implementing programs to reduce food waste.
- Complete research on strategies/gap analysis to promote food waste recovery.
- Complete research on additional food waste processing necessary to accept additional volumes.
- Outreach to all community leaders for website and consistent messaging.
- Advertisements and consistent messaging about Save More Than Food Campaign. Increase in waste recovery practices and volumes reported by schools, businesses, haulers, and processors.
- Increase in relationships built with businesses, schools, and community officials

Implementation Responsibility: The District will be responsible for coordinating efforts promoting and providing strategies for processing organics including the potential siting of a processing facility. The District will also collaborate with businesses, schools, and communities to educate, communicate, and implement best practices to minimize food waste generation and recovery.

The Measure of Success: The District will look at organics and yard waste recovery and recycling rates annually to ascertain campaign impact. The District will also track community promotions, participation rates, and business response. The district can also quantify the posts and views on social media over time.

Business Recycling Champion Campaign

Name	Start Date	End Date	Goal
Business Recycling Champion Campaign	Ongoing	Ongoing	3 & 4

Goal/Purpose: The District intends to increase the volume of recycled materials from businesses by aggressively promoting the Business Champion Campaign district wide. The District will encourage all communities and chambers of commerce to assist in promoting the campaign to businesses. As identified in Appendix H approximately 60% of the materials coming to the Franklin County Sanitary Landfill are from this sector. The District also intends to improve data collection on institutional and commercial business waste reduction and diversion efforts.

Targeted Audience: Businesses and Chambers of Commerce

Strategy: The District will continue the implementation of the ongoing Business Recycling Champions Program. This program recognizes businesses for their efforts toward reuse, recycling, composting and other waste reduction activities and encourages other businesses to follow their lead. The District will communicate the potential for direct economic benefits when adopting these waste reduction activities. SWACO will pinpoint companies that would financially benefit from a diversion program and engage the administration and facility managers to build relationships critical to attaining diversion goals.

SWACO will continue the partnership with the Columbus Chamber of Commerce including features in the in the newsletter of the Columbus Regional Logistics Council. SWACO will also continue to publish the Waste to Resources e-newsletter to 10,000+ subscribed members including businesses and industries.

Milestones:

- Outreach to all community leaders and chambers of commerce for website promotion and consistent messaging.
- Advertisements and consistent messaging about Business Champion Campaign.
- Increase in waste recovery practices and volumes reported by schools, businesses, haulers, and processors.
- Increase in relationships built with businesses, schools, and community officials
- Increase in recycling tonnage reported by businesses on surveys

Implementation Responsibility: The District will be responsible for coordinating efforts promoting and providing strategies for the Business Champion Campaign. The District will also collaborate with chambers of commerce and businesses, to educate, communicate, and implement best waste management practices.

The Measure of Success: The District will look at recycling rates annually to ascertain campaign impact. The District will also track community promotions, participation rates, and business response. The district can also quantify the posts and views on social media over time.

To further measure the 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 Changed
Since SWACO employs a business recycling administrator to work with commercial and industrial members of the community, this staff person can gauge the barriers that are preventing institutional and commercial progress toward waste reduction goals. Whether cost, infrastructure, buy-in, or other issues are influencing success, the business recycling administrator can work directly with the audience to affect behavior change.
changes or knowledge goals were met.

Appendix M: Capacity Analysis

This appendix provides the SWMD's strategy for ensuring access to solid waste management facilities. While the primary focus of this strategy is ensuring access to adequate disposal capacity, the SWMD will also ensure that it has access to processing capacity for recyclables, and if needed, access to transfer facilities.

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 (2021), the landfill disposed at least 98.1 percent of the total waste sent for disposal. At the end of 2021, the landfill was estimated to have more than 46 years of remaining capacity based upon the current rate of landfill airspace used. (See Table M-1.)

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

Facility	Location	State	Years of Remaining Capacity
In-District			
SWACO Franklin County Sanitary Landfill	Franklin	OH	46
Out-of-District			
Pine Grove Regional Facility	Fairfield	OH	88
Hancock County Landfill	Hancock	OH	24
American Landfill, Inc.	Stark	OH	74
Suburban Landfill Inc	Perry	OH	77
Crawford County Landfill	Crawford	OH	23
Evergreen Recycling & Disposal	Wood	OH	33
Athens-Hocking Landfill	Athens	OH	48
Kimble Sanitary Landfill	Tuscarawas	OH	20
Stony Hollow Landfill Inc	Montgomery	OH	4
Out-of-State			
Caldwell Landfill	Shelby	IN	46
National Serv-All Landfill	Allen	IN	34

Source(s) of Information:
2021 Ohio Solid Waste Facility Data Report Tables (Table 13) published by Ohio EPA
Project and Landfill Data by State, Indiana (August 2022) published by US EPA

The counties to the southeast of Franklin County also have considerable disposal capacity available at landfills which accepted 1.9 percent in 2021 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.

B. CAPACITY AT PRIVATE LANDFILL FACILITIES

Captive or residual waste landfills are designated exclusively for the disposal of one or any combination of wastes from seven specific industrial categories. Due to regulations these facilities will not receive municipal solid waste. Residual/captive landfills are landfills used to dispose of waste generated exclusively by the manufacturing company that owns the landfill. SWACO did not send waste to captive landfills in the reference year; therefore, Tables M-2 has been omitted.

C. INCINERATORS AND ENERGY RECOVERY FACILITIES

The District sent less than 3,000 tons of waste to medical waste treatment facilities and one energy recovery facility in Indiana during the reference year (2021). 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 0.3% 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-3. Incinerators and Energy Recovery Facilities Used by the District in the Reference Year

Facility Name	Location		Waste Accepted from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Clean Earth Environmental Solutions Inc	Marion	IN	0	0.04	0	0
Covanta Environmental Solutions	Marion	IN	0	503	0	503
Covanta Environmental Solutions LLC	Porter	IN	0	693	0	693
EQ Industrial Services Processing	Marion	IN	0	3	0	3
Indianapolis Resource Recovery Facility	Marion	IN	0	1,632	0	1,632
Medassure of Indiana Treatment Facility	Marion	IN	29	0	0	29
Merrell Brothers Inc Indy Disposal Solutions	Marion	IN	0	8	0	8
Tradebe Treatment & Recycling LLC	Lake	IN	0	63	0	63
Total			29	2,902	0	2,932

Appendix N: Evaluating Green House Gas Emissions

A. GREEN HOUSE GAS (GHG) MEASUREMENT

Gases that trap heat in the atmosphere are called greenhouse gases. The main greenhouse gases are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorinated gases. Each gas's effect on the climate depends on how much is in the atmosphere, how long they stay in the atmosphere, and how strongly they impact the atmosphere. Disposal and treatment of materials results in greenhouse gas emissions from collection, transport, landfill disposal, and other processing activities.

The most common way to measure climate impact of waste management is to state the impact in carbon equivalents. Since waste reduction results in the reduction of several types of greenhouse gases, the conversion to a standard carbon equivalent measurement allows for a total quantification of the impact. It also provides a standard language for people to compare these actions to others such as transportation and energy conservation efforts. A carbon equivalent CO2E is simply the amount of CO2 that would have the same global warming potential as the waste reduction impacts, when measured over a specified timescale. The international reporting standard for CO2 emissions is metric tons, so carbon dioxide amounts may be reported as MTCO2E, metric tons of carbon equivalent.

Produced by US EPA, the Waste Reduction Model (WARM) was designed to help solid waste planners, municipal leaders, and other stakeholder organizations track and report greenhouse gas emissions reductions. It is a database tool that helps decision makers predict the strategies that most reduce GHG emissions. The WARM model calculates GHG emission across six waste management modalities (source reduction, recycling, composting, anaerobic digestion, combustion, and landfilling). Modeling different combinations of waste management practices sees which approach leads to the least GHG entering the atmosphere.

The District used the WARM model to demonstrate the environmental value of recycling and composting materials that would otherwise be landfilled. The WARM model calculates that in the plan year 2021 recycling and composting activities removed over 1.8 million metric tons of carbon dioxide from the atmosphere. Table N-1 also demonstrates that in the CO2 reduction from 2021 recycling and composting activities were equivalent to the emissions from over 400,000 passenger cars yielding a savings of over 214 million gallons of gas.

Table N-1 Tons of Solid Waste Applied to WARM

Green House Gas Production Scenario A

2021 Recycling and Composting Activity

Material	Tons Recycled	Tons Landfilled	Tons Composted	Total MTCO2E
Corrugated Containers	293,389	0		-919,873
Mixed Paper	36,685	0		-130,068
Food Waste		0	29,416	-3,400
Yard Trimmings		0	305,741	-16,376
Branches		0	6,552	-351
Mixed Plastics	6,766	0		-6,262
Mixed Electronics	9,321	0		-7,320
Mixed Metals	180,700	0		-793,483
Glass	30,112	0		-8,314
Tires	23,510	0		-8,847
Mixed Recyclables	758	0		-2,163
Total	581,241	0	341,709	-1,896,456

Green House Gas Production Scenario B

Impact by Landfilling all 2021 Recovered Materials

Material	Tons Recycled	Tons Landfilled	Tons Composted	Total MTCO2E
Corrugated Containers	0	293,389	0	53,288
Mixed Paper	0	36,685	0	553
Food Waste	0	29,416	0	14,634
Yard Trimmings	0	305,741	0	-61,307
Branches	0	6,552	0	-3,512
Mixed Plastics	0	6,766	0	137
Mixed Electronics	0	9,321	0	189
Mixed Metals	0	180,700	0	3,660
Glass	0	30,112	0	610
Tires	0	23,510	0	476
Mixed Recyclables	0	758	0	26
Total	0	922,950	0	8,754

Relative Impact from Landfilling all Waste currently Landfilled

Adding annual emissions from	404,503	Passenger Vehicles
Consuming	214,381,608	Gallons of Gasoline

Table N-2 demonstrates that over the next six years, the increase in recycling and composting activities will be responsible for the reduction of over 2.0 million metric tons of carbon dioxide from the atmosphere the removal of over 425,000 passenger cars yielding a savings of over 225 million gallons of gas.

Table N-2 Tons of Solid Waste Applied to WARM

Green House Gas Production Scenario A

2027 Recycling and Composting Activity

Material	Tons Recycled	Tons Landfilled	Tons Composted	Total MTCO2E
Corrugated Containers	310,992	0 0		-975,066
Mixed Paper	38,886	0 0		-137,872
Food Waste	0	0	31,181	-3,604
Yard Trimmings	0	0	324,085	-17,358
Branches	0	0	6,945	-372
Mixed Plastics	7,172	0 0		-6,638
Mixed Electronics	9,880	0 0		-7,759
Mixed Metals	191,542	0 0		-841,092
Glass	31,919	0 0		-8,812
Tires	24,921	0 0		-9,378
Mixed Recyclables	803	0 0		-2,293
Total	616,115	0	362,212	-2,010,243

Green House Gas Production Scenario B

Impact by Landfilling all 2027 Recovered Materials

Material	Tons Recycled	Tons Landfilled	Tons Composted	Total MTCO2E
Corrugated Containers	0	310,992	0	56,485
Mixed Paper	0	38,886	0	586
Food Waste	0	31,181	0	15,512
Yard Trimmings	0	324,085	0	-64,986
Branches	0	6,945	0	-3,723
Mixed Plastics	0	7,172	0	145
Mixed Electronics	0	9,880	0	200
Mixed Metals	0	191,542	0	3,880
Glass	0	31,919	0	646
Tires	0	24,921	0	505
Mixed Recyclables	0	803	0	27
Total	0	978,327	0	9,279

Relative Impact from Landfilling all Waste currently Landfilled

Adding annual emissions from	428,773	Passenger Vehicles
Consuming	227,244,504	Gallons of Gasoline

The District also used the WARM model to demonstrate the energy savings from recycling and composting materials that would otherwise be landfilled. Table N-3 demonstrates that in the plan year 2021 the recycling and composting activities yielded savings of over 17 million BTUs which is equivalent to the energy consumed by over 192,000 households.

Table N-3 Tons of Solid Waste Applied to WARM

Energy Use Scenario A

2021 Recycling and Composting Activity

Material	Tons Recycled	Tons Landfilled	Tons Composted	Total Million BTU
Corrugated Containers	293,389	0		-4,431,126
Mixed Paper	36,685	0		-754,395
Food Waste		0	29,416	21,386
Yard Trimmings		0	305,741	79,026
Branches		0	6,552	1,694
Mixed Plastics	6,766	0		-236,959
Mixed Electronics	9,321	0		-108,949
Mixed Metals	180,700	0		-12,025,562
Glass	30,112	0		-64,000
Tires	23,510	0		-84,696
Mixed Recyclables	758	0		-11,333
Total	581,241	0	341,709	-17,614,914

Energy Use Scenario B

Impact by Landfilling all 2021 Recovered Materials

Material	Tons Recycled	Tons Landfilled	Tons Composted	Total Million BTU
Corrugated Containers	0	293,389	0	-61,201
Mixed Paper	0	36,685	0	-5,678
Food Waste	0	29,416	0	-74
Yard Trimmings	0	305,741	0	44,727
Branches	0	6,552	0	96
Mixed Plastics	0	6,766	0	1,815
Mixed Electronics	0	9,321	0	2,501
Mixed Metals	0	180,700	0	48,477
Glass	0	30,112	0	8,078
Tires	0	23,510	0	6,307
Mixed Recyclables	0	758	0	-41
Total	0	922,950	0	45,008

Relative Impact from Landfilling all Waste currently Landfilled
Consuming 192,769 Household's Annual Energy Consumption

Table N-4 demonstrates that over the next six years, the increase in recycling and composting activities will be responsible for the reduction of over 18 million BTUs which is equivalent to the energy consumed by over 204,000 households.

Table N-4 Tons of Solid Waste Applied to WARM

Energy Use Scenario A

2027 Recycling and Composting Activity

Material	Tons Recycled	Tons Landfilled	Tons Composted	Total Million BTU
Corrugated Containers	310,992	0 0		-4,696,994
Mixed Paper	38,886	0 0		-799,659
Food Waste	0	0	31,181	22,670
Yard Trimmings	0	0	324,085	83,767
Branches	0	0	6,945	1,795
Mixed Plastics	7,172	0 0		-251,176
Mixed Electronics	9,880	0 0		-115,486
Mixed Metals	191,542	0 0		-12,747,096
Glass	31,919	0 0		-67,840
Tires	24,921	0 0		-89,778
Mixed Recyclables	803	0 0		-12,013
Total	616,115	0	362,212	18,671,809

Energy Use Scenario B

Impact by Landfilling all 2027 Recovered Materials

Material	Tons Recycled	Tons Landfilled	Tons Composted	Total Million BTU
Corrugated Containers	0	310,992	0	-64,873
Mixed Paper	0	38,886	0	-6,018
Food Waste	0	31,181	0	-79
Yard Trimmings	0	324,085	0	47,411
Branches	0	6,945	0	102
Mixed Plastics	0	7,172	0	1,924
Mixed Electronics	0	9,880	0	2,651
Mixed Metals	0	191,542	0	51,386
Glass	0	31,919	0	8,563
Tires	0	24,921	0	6,686
Mixed Recyclables	0	803	0	-43
Total	0	978,327	0	47,708

Relative Impact from Landfilling all Waste currently Landfilled
Consuming 204,335 Household's Annual Energy Consumption

APPENDIX O: FINANCIAL PLAN

A. FUNDING MECHANISMS AND REVENUE GENERATED

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 3734.57. The Plan identifies the Generation Fee collected by SWACO as the primary 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 through increasing revenues, decreasing expenses, or some combination of both.

Appendix-O provides an overview of SWACO's budget using background data from Appendix H-9 2021 Reference Year Financial Analysis. Appendix O also identifies the programs the SWMD intends to fund during the planning period and estimates how much the SWMD will spend on each program in accordance with ten allowable uses that are prescribed in ORC Section 3734.57(G).

Disposal Fee

SWACO does not intend to collect disposal fees in accordance with ORC Section 3734.57(B); therefore, Table O-1 has been omitted.

Generation Fee

In accordance with ORC 3734.573, a solid waste management policy committee may levy fees on the generation of solid wastes within the district. In 2005, the District adopted, ratified, and implemented a $5.00 per ton generation fee. This $5/ton fee amount has remained since 2005 and is expected to remain unchanged during the planning period. Table O-2 illustrates historical and projected Generation Fee revenues using the waste projections from Table D-6 as a guidance tool.

During the 2021 reference year, SWACO's Generation Fee revenue was $6.18 million. Total revenue was $6.25 million. It is projected that generation fee revenue will increase at about 2% per year through the duration of the planning period, from $6.3 million in 2024 to $7.1 million in 2030.

After identifying program needs through the plan development process, it was determined that the $5.00 per ton generation fee would not be sufficient to fund all of the significant new programs that are contemplated under the Plan, such as the potential development of a compost facility, the construction of a new Education Center, the establishment of an HHW/Convenience Center, and continued investment in recycling and organics carts. Many of these programs could require significant capital investments. After evaluating several funding options, SWACO has determined that it can retain a positive fund balance throughout the planning period by utilizing an internal funding mechanism to supplement the generation fee revenue.

Generation Fee Schedule Actual Revenue Compared to 2016 Plan Projection

Projections published in the SWACO 2018-2032 Solid Waste Management Plan approved February 28, 2018, are compared with the actual revenue received during that time in Table O-2A. Note that SWACO in the 2018-2032

Approved Plan chose a conservative revenue estimate of $5,000,000/yr. All subsequent years - from 2018 to 2021 - exceeded $5,000,000.

Table O-2 Generation Fee Schedule and Revenue

Year	Generation Fee Schedule ($ per ton)	Disposal Tons	Generation Fee Estimate Based on Disposal Tons	SWACO Acct. and Finance Projections	Difference SWACO - Disposal Projections	Annual Change in Revenue Received	Annual Percentage Change in Revenue	Average Pct. Change in Revenue
2017	$5.00	1,182,215	$5,911,075	$5,911,075	0			
2018	$5.00	1,352,143	$6,760,715	$6,760,715	0	$849,640	12.6%	12.6%
2019	$5.00	1,278,707	$6,393,535	$6,393,535	0	-$367,180	-5.7%	3.4%
2020	$5.00	1,244,136	$6,220,680	$6,220,680	0	-$172,855	-2.8%	1.3%
2021	$5.00	1,269,259	$6,346,293	$6,181,189	165,104	-$39,491	-0.6%	0.9%
2022	$5.00	1,294,013	$6,470,067	$6,315,796	154,271	$134,607	2.1%	
2023	$5.00	1,319,268	$6,596,340	$6,181,189	415,151	-$134,607	-2.2%	
2024	$5.00	1,345,033	$6,725,163	$6,304,813	420,351	$123,624	2.0%	
2025	$5.00	1,371,318	$6,856,589	$6,430,909	425,680	$126,096	2.0%	
2026	$5.00	1,398,134	$6,990,671	$6,559,527	431,143	$128,618	2.0%	
2027	$5.00	1,411,813	$7,059,066	$6,690,718	368,348	$131,191	2.0%	
2028	$5.00	1,425,630	$7,128,152	$6,824,532	303,620	$133,814	2.0%	
2029	$5.00	1,437,066	$7,185,328	$6,961,023	224,306	$136,491	2.0%	
2030	$5.00	1,448,601	$7,243,004	$7,100,243	142,761	$139,220	2.0%	
2031	$5.00	1,460,237	$7,301,185	$7,242,248	58,937	$142,005	2.0%	
2032	$5.00	1,466,341	$7,331,706	$7,387,093	-55,387	$144,845	2.0%	
2033	$5.00	1,472,472	$7,362,360	$7,534,835	-172,475	$147,742	2.0%	
2034	$5.00	1,478,629	$7,393,146	$7,685,532	-292,386	$150,697	2.0%	
2035	$5.00	1,484,813	$7,424,066	$7,839,242	-415,176	$153,711	2.0%	
2036	$5.00	1,491,024	$7,455,120	$7,996,027	-540,907	$156,785	2.0%	
2037	$5.00	1,497,262	$7,486,308	$8,155,948	-669,640	$159,921	2.0%	
2038	$5.00	1,503,526	$7,517,632	8,319,067	-801,435	$163,119	2.0%	

Table O-2A Generation Fee Schedule Actual Compared to 2018-2032 Plan Projection

Year	Generation Fee Schedule ($ per ton)	Disposal Tons	Total Revenue from Generation Fee	SWACO 2018-2032 Solid Waste Plan Generation Fee Projections	Actual Revenue change from Projected
2017	$5.00	1,121,957	$5,609,783	$5,000,000	$609,783
2018	$5.00	1,194,687	$5,973,433	$5,000,000	$973,433
2019	$5.00	1,200,385	$6,001,925	$5,000,000	$1,001,925
2020	$5.00	1,181,360	$5,906,798	$5,000,000	$906,798
2021	$5.00	1,236,238	$6,181,189	$5,000,000	$1,181,189
2022	$5.00	1,260,281	$6,301,407	$5,000,000	
2023	$5.00	1,319,268	$6,596,340	$5,000,000	
2024	$5.00	1,345,033	$6,725,163	$5,000,000	
2025	$5.00	1,371,318	$6,856,589	$5,000,000	
2026	$5.00	1,398,134	$6,990,671	$5,000,000	
2027	$5.00	1,411,813	$7,059,066	$5,000,000	
2028	$5.00	1,425,630	$7,128,152	$5,000,000	
2029	$5.00	1,437,066	$7,185,328	$5,000,000	
2030	$5.00	1,448,601	$7,243,004	$5,000,000	
2031	$5.00	1,460,237	$7,301,185	$5,000,000	

Reliable Income through Designation

The Generation Fee revenue projections shown in Table O-2 are considered by SWACO to be reliable and relatively predictable for several reasons including 'designation.'

Ohio law gives each district the ability to control where waste generated from within the district is taken for disposal (i.e., flow control). In Ohio, districts establish flow control by designating facilities. SWACO's Solid Waste Plan authorizes the Board to designate solid waste facilities. 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.*"

SWACO anticipates that designated 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. Most importantly, the Franklin County Sanitary Landfill is expected to have 20+ years of remaining capacity and is expected to continue receiving nearly all the District's waste sent for disposal.

The District therefore has, and will continue to have, the ability to accurately track, verify, and enforce the collection of the generation fee from the designated facilities.

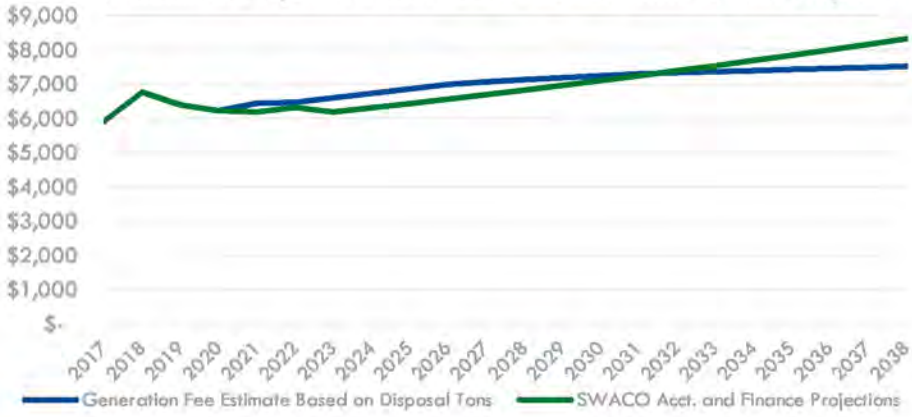
Predictable Waste Generation

The Generation Fee revenue projections shown in Table O-2 are also consider by SWACO as reliable and relatively predictable from the application of the waste projections from Table D-6 which incorporates an analysis of residential and commercial waste reduction and recycling rates to calculate projected disposal tons. Historical disposal has fluctuated largely due to changes in industrial waste reduction and recycling trends. Some of this fluctuation is a result of mixed success in capturing data from brokers and processors that surveys may not capture. SWACO is planning adjustments to the data collection efforts to address these gaps and further enhance the accuracy of projections. Despite the slight historical variances, the D-6 waste projections are considered a conservative, accurate, reliable source based on best data available.

Historical Analysis

The OEPA guidance document requires that the District present projections for the years between the reference year and the first year of the planning and all the years in the planning period. The guidance document does allow a district to project revenues and expenses constant as a conservative strategy after the 7th year. SWACO has not projected flat revenue but used a conservative projection of 2% for 2023 to 2038 to reflect waste disposed tonnages increasing at a modest rate. Historical trends indicate that revenues have been stable except for a slight downward trend in 2020 due to the impact of COVID-19. The District anticipates that future expenditures will be adjusted in each successive five-year plan as actual revenues are incorporated

Table O-2b Revenue Projections 2017 to 2021 Actual - 2022 to 2039 Projected



into more accurate revenue projections.

Table O-2b shows the generation fee estimate from SWACO acct. and finance projections compared to the disposal fee projections.

Note that the District operates on a cash accounting basis, and, as a result, tonnages for fee tracking purposes are not recorded until fee revenue is received from a landfill facility.

Designation Fee

In accordance with Ohio Revised Code 343.014, a solid waste management district may adopt designation fees to assure adequate financing to implement the approved solid waste plan. Designation fees have not been adopted. SWACO does not receive revenue from designation fees; therefore, Table O-3 has been omitted.

Loans

Districts may incur debt in compliance with the Attorney General's Opinion on sources of financing opinion (2015-019) June 5, 2015. The District does not have outstanding debt due to existing loans and the Policy Committee does not intend to secure loans to finance implementing this plan; therefore, Table O-4 has been omitted.

Other Sources of Revenue

- SWACO has historically received limited amounts of "Other Revenue Sources" as outlined in Table O-5 including: 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. SWACO has also received grants from U.S. EPA, The Recycling Partnership, the World Wildlife Fund (WWF), and the Natural Resources Defense Council (NRDC). SWACO will continue to seek out grant opportunities that align and support our activities.
- Recycling Revenue – SWACO has periodically received revenue from recyclable materials recovered through the Recycling Drop-off Program.
- Interest Income – This is comprised of funds generated from interest generated from the fund balance.
- Other Revenue – Miscellaneous revenues sources include restitution for illegal dumping court cases, community contributions (repayment) for recycling cart purchases, and other non-recurring revenues.

Table O-5 and O-6 Other Sources of Revenue and Annual Change in Revenue Received

Year	Recycling Revenue	Interest	Grants	Other	Allocated Dollar	Total Other Revenue	Annual Change in Other Revenue Received	Annual Percentage Change in Other Revenue Received	Average Percentage Change in Revenue Received
2017	$12,637	$0	$0	$372	$0	$13,009			
2018	$0	$28,341	$0	$15,695	$0	$44,036	$31,027	70%	70%
2019	$0	$93,682	$260,526	$1,757	$0	$355,965	$311,929	88%	79%
2020	$0	$33,217	$165,728	$35,349	$0	$234,294	($121,671)	-52%	35%
2021	$53,160	$0	$15,379	$0	$0	$68,539	($133,069)	-131%	-32%
2022	$97,229	$49,228	$0	$5,975	$6,885,738	$7,038,170*			
2023	$0	$0	$0	$0	$1,296,215	$1,296,215			
2024	$0	$0	$0	$0	$1,260,963	$1,260,963			
2025	$0	$0	$0	$0	$1,286,182	$1,286,182			
2026	$0	$0	$0	$0	$1,311,905	$1,311,905			
2027	$0	$0	$0	$0	$1,338,144	$1,338,144			
2028	$0	$0	$0	$0	$1,364,906	$1,364,906			
2029	$0	$0	$0	$0	$1,392,205	$1,392,205			
2030	$0	$0	$0	$0	$1,420,049	$1,420,049			
2031	$0	$0	$0	$0	$1,448,450	$1,448,450			
2032	$0	$0	$0	$0	$1,477,419	$1,477,419			
2033	$0	$0	$0	$0	$1,506,967	$1,506,967			
2034	$0	$0	$0	$0	$1,537,106	$1,537,106			
2035	$0	$0	$0	$0	$1,567,848	$1,567,848			
2036	$0	$0	$0	$0	$1,599,205	$1,599,205			
2037	$0	$0	$0	$0	$1,631,190	$1,631,190			
2038	$0	$0	$0	$0	$1,663,813	$1,663,813			

* For purposes of the Plan, beginning in 2022 the "Allocated Dollar" is recorded as revenue to account for the balance that has accumulated from 2017 to 2021 and the amount from 2022. Thereafter it reflects the yearly projected allocation.

Allocated Dollar Fund Balance

During development of this Plan, the Board determined the necessity of utilizing, or "allocating", $1.00 per ton of the tipping fee at the landfill to be used to fund implementation of the Plan. Note that the 2022 Allocated Dollar revenue in the table above includes the projected $1,294,013 from the $1.00 per ton allocation plus the 2021 calculated fund balance of $5,588,725 for a total Allocated Dollar of $6,885,738. Subsequent planning years reflect only the $1.00 per ton annual revenue. The "Allocated Dollar" will be further discussed below.

Financial Security and Sustainability with Continuation of Allocated Dollar

SWACO has adopted a conservative model for 2023 to 2038 income projections due to the variability and uncertainty of some of these other revenue sources. No Recycling Revenue, Interest, Grants, or Other Revenue is included in the projections from 2023 to 2038. Generation Fee Revenue compromised over 99% of the 2021 reference year total revenue and is used as the basis for total revenue.

SWACO projects that Generation Fee and Allocated Dollar revenue will increase only by the 2% conservative projections and will be regularly updated based on actual tonnages from Table D-6 Waste Disposal Projections. Starting in 2022, the Allocated Dollar is now denoted in the Other Sources of Income Table O-5 and O-6 and is expected to add approximately $1.4 million per year over the planning period.

After identifying program needs through the plan development process, it was determined that the $5.00 per ton generation fee would not be sufficient to fund all of the significant new programs that are contemplated under the Plan, such as the potential development of a compost facility, the construction of a new Education Center, the establishment of an HHW/Convenience Center, and continued investment in recycling and organics carts. Many of these programs could require significant capital investments. After evaluating several funding options, SWACO has determined that it can retain a positive fund balance throughout the planning period by utilizing an internal funding mechanism, the Allocated Dollar, to supplement the generation fee revenue.

OEPA requires that the District clearly explain whether a change in $5/ton Generation Fee is anticipated. SWACO has presented in Appendix-O a thorough but responsible budget for the planning period. Revenues projections are conservative and budget projections are prudent and consistent with the overall waste reduction programs and strategies. SWACO projects that the continued use of the $5/ton Generation Fee with the $1/ton Allocated Dollar from the tipping fee at the landfill and transfer stations will be sufficient to maintain the financial viability of the District over the 20-year planning period and ensure a responsible and sustainable fund balance.

The use of this $1.00 per ton allocated fee is now denoted in the Other Income Table O-5 and in Table 6-1. In addition to allocating this $1.00 per ton for future plan implementation, SWACO is allocating an amount equivalent to an accumulation of the $1.00 per ton fee from 2017 (the year that the tipping was last adjusted) to the end of 2021 (the reference year). At the time of the last tipping fee adjustment in 2017, SWACO recognized that there might be a need to devote some of the tipping fee towards Plan implementation. Therefore, the tables in this Plan show a one-time entry of $6,885,738 in 2022 to account for this accumulated funding, which includes an accumulation of $5,647,697 and an estimated $1,238,041 for 2022. From that point forward the Plan projects annual revenue from this allocated fee from $1.3 million dollars in 2023 to $1.4 million in 2030, consistent with tonnage projections that were used for projecting the generation fee revenue.

Financially Responsible Budget with No Increase in the Generation Fee

OEPA requires that the District clearly explain whether a change in $5.00 per ton Generation Fee is anticipated. SWACO has presented in Appendix O and in Chapter 6 a thorough but responsible budget for the planning period. Revenue projections are conservative and budget projections are prudent and consistent with the overall waste reduction programs and strategies. SWACO projects that the continued use of the $1.00 per ton "Allocated Dollar" from the tipping fee at the landfill and transfer facilities will be sufficient to maintain the financial viability of the District over the planning period and ensure a responsible and sustainable fund balance. Therefore, SWACO does not anticipate that an increase in the $5.00 per ton Generation Fee will be needed during the Planning Period.

SWACO recognizes the responsibility of being a state leader in recycling and waste reduction programs, while remaining an accountable steward of public funds. SWACO is proud to continue and expand on the ambitious and comprehensive programming described in this planning document. Chapter 6 and Appendix O illustrate how this 'best practices' programming can be provided in a financially sustainable manner with no increase in the existing $5.00 per ton Generation Fee.

The current 15-year planning period is from 2024 to 2038. SWACO will remain focused on prudent financial management during this 15-year planning period. SWACO will continue to revisit the generation fee, "Allocated Dollar", fund balance, and budget annually, and on a five-year cadence as each subsequent 15-year solid waste plan is updated and ratified as required by the OEPA.

Note that the SWACO Executive Director, Board, and Planning Committee, and Team considered multiple alternatives to ensure that sufficient funds would be available to provide best-in-class programming to Franklin County. Together, SWACO arrived at a financial solution that does not require raising the generation fee which has remained $5 since 2005.

Table O-6 includes all funding mechanisms that will be used, and the total amount of revenue generated by each method for each year of the planning period.

Table O-6 Total Revenue (in accordance with ORC 3734.57, ORC 3734.572 and ORC 3734.573)

Year	Generation Fee Revenue	Allocated Dollar Revenue	Other Revenue	Total Revenue
2017	$5,911,075	$0	13,009.13	$5,924,084
2018	$6,760,715	$0	44,035.74	$6,804,751
2019	$6,393,535	$0	355,964.92	$6,749,500
2020	$6,220,680	$0	234,293.48	$6,454,973
2021	$6,181,189	$0	$68,539	$6,249,728
2022	$6,315,796	$6,885,738	$152,433	$13,353,967
2023	$6,181,189	$1,296,215		$7,477,404
2024	$6,304,813	$1,260,963		$7,565,775
2025	$6,430,909	$1,286,182		$7,717,091
2026	$6,559,527	$1,311,905		$7,871,433
2027	$6,690,718	$1,338,144		$8,028,861
2028	$6,824,532	$1,364,906		$8,189,439
2029	$6,961,023	$1,392,205		$8,353,227
2030	$7,100,243	$1,420,049		$8,520,292
2031	$7,242,248	$1,448,450		$8,690,698
2032	$7,387,093	$1,477,419		$8,864,512
2033	$7,534,835	$1,506,967		$9,041,802
2034	$7,685,532	$1,537,106		$9,222,638
2035	$7,839,242	$1,567,848		$9,407,091
2036	$7,996,027	$1,599,205		$9,595,232
2037	$8,155,948	$1,631,190		$9,787,137
2038	$8,319,067	$1,663,813		$9,982,880

Fund Balance Reserve Policy

Note that during the planning period, the Board will adhere to the $2.5 million "Fund Balance Reserve Policy." This allows the Programs Department to drawdown from the existing carryover balance to a limit of $2.5M, either for planned or unforeseen expenditures. Note the fund balances projected in Table O-8 exceed the $2.5 million reserve policy limit established except for the years 2032 to 2034. The District is comfortable that this situation is unlikely since revenue projections are conservative and the District does not traditionally spend all the budgeted funds each year.

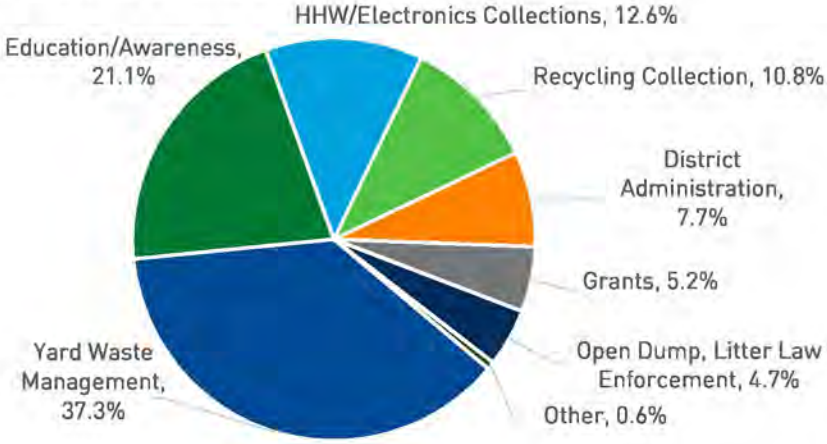
B. COST OF IMPLEMENTING PLAN

Budget

Ohio Revised Code Section 3734.53(B) requires a solid waste management plan to present a budget.

This budget accounts for how the SWMD will obtain money to pay for programs and operations and how the SWMD will spend that money. The plan must demonstrate that planned expenses will be made in accordance with ten allowable uses that are prescribed in ORC Section 3734.57(G) and outlined in Table O-7.

Figure H-9.2 Expense Distribution in 2021



The projected budget, shown in Table O-7, was developed based on programmatic needs identified in Appendices H, I and L, M and N including modeling based on existing programs and best practices. The budget was designed to keep expenses close to the estimated annual revenue amount although SWACO intends to use its existing carryover balance to fund expenses that are above the annual revenue amount. If expenses do not reach the annually budgeted amount, funds will be deposited in the carryover balance. Conversely, if expenses exceed revenues, the fund balance will be used as a contingency source of revenue.

SWACO Programs and Services

Community Programs
- Community Consortiums & Contract Assistance
- Community Recycling Cart Initiative
- Recycle Right Educational Programing
- E-Waste Program
- Annual Community Data Collection
- Presentations and Outreach

Grant Programs
- Community Waste Reduction Grant
- Event Waste Reduction Grant
- Special Project Grants

Communications
- Marketing and External Communications
- Website Management
- Social Media
- Educational Campaigns
- Annual Report Newsletters

School Program
- School Consortium & Contract Assistance
- School Recycling Resources & Campions Program
- School Food Waste Resources
- Presentations and Outreach

Food Waste Initiative
- Composting Infrastructure
- Awareness & Education Campaigns and Activities
- Food Waste Reduction & Rescue
- Community and Business Engagement
- Compost Collection and Drop-off

Larger Programs
- Household Hazardous Waste Program
- Drop-off Recycling Program
- Yard Waste Program
- Environmental Crimes Task Force

Business Program
- Waste Reduction and Diversion Resources
- Technical Assistance
- Recognition Program
- Financial incentives
- Presentations and Outreach

Outreach & Landfill Tours
- Community Groups & Organizations
- School Groups
- Presentations, Workshops, and Tabling

Administrative
- Annual District Report & Data Collection
- Solid Waste Management Plan Management
- Strategic Partnerships
- Research
- Market Development

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 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.

Under this Plan, all of SWACO's projected expenses fall into categories 1, 2, and 7. Table O-7 Expenses outlines the budget for each program and service offered by the District.

Table O-7 Expenses

Line #	Category/Program	2017	2018	2019	2020	2021	2022	2023	2024
1	*1. Plan Monitoring/Prep.*	*$27,120*	*$0*	*$28,143*	*$20,777*	*$7,595*	*$77,319*	*$43,389*	*$44,474*
1.a	a. Plan Preparation	$22,731	$0	$0	$3,899	$7,595	$34,988	$0	$0
1.b	b. Plan Monitoring	$2,992	$0	$26,662	$9,378	$0	$21,525	$22,063	$22,615
1.c	c. Other	$1,397	$0	$1,481	$7,500	$0	$20,806	$21,326	$21,859
2	*2. Plan Implementation*	*$3,929,560*	*$4,015,073*	*$6,184,502*	*$5,462,509*	*$5,245,909*	*$4,924,915*	*$7,756,661*	*$11,290,636*
2.a	a. District Administration	$718,886	$755,771	$1,114,669	$841,954	$816,609	$840,746	$1,061,185	$1,093,335
2.a.1	Personnel	$645,132	$585,823	$1,020,077	$795,490	$775,407	$729,035	$824,261	$921,868
2.a.2	Office Overhead	$66,210	$153,379	$89,519	$44,242	$37,343	$89,038	$91,264	$93,546
2.a.3	Other	$7,543	$16,569	$5,073	$2,222	$3,859	$22,672	$145,659	$77,921
2.b	b. Facility Operation	$1,485,000	$0	$0	$0	$23,557	$0	$0	$0
2.b.1	MRF/Recycling Center	$0	$0	$0	$0	$23,557	$0	$0	$0
2.b.2	Compost	$1,485,000	$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	$833,129	$763,512	$1,379,980	$1,245,021	$546,406	$857,228	$1,391,312	$1,511,645
2.d.1	Curbside	$58,160	$66,727	$28,390	$85,495	$36,906	$0	$271,770	$272,069
2.d.2	Drop-off	$659,996	$674,307	$1,330,308	$1,156,559	$437,976	$812,786	$833,106	$853,933
2.d.3	Combined Curbside/Drop-off	$0	$0	$0	$0	$0	$0	$0	$0
2.d.4	Multi-family	$6,754	$21,100	$21,283	$0	$0	$44,442	$45,553	$46,692
2.d.5	Business/Institutional	$108,219	$1,378	$0	$2,967	$71,524	$0	$240,884	$338,951
2.d.6	Other	$0	$0	$0	$0	$0	$0	$0	$0
2.e	e. Special Collections	$513,919	$414,237	$423,348	$607,536	$639,853	$662,546	$611,272	$700,854
2.e.1	Tire Collection	$0	$0	$0	$0	$0	$0	$0	$0
2.e.2	HHW Collection	$513,919	$414,237	$423,348	$607,536	$638,667	$659,354	$608,000	$697,500
2.e.3	Electronics Collection	$0	$0	$0	$0	$1,187	$3,192	$3,272	$3,354
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	$1,565,777	$1,647,128	$1,661,431	$1,889,116	$1,781,142	$1,000,000	$1,250,000
2.g	g. Education/Awareness	$172,300	$464,816	$719,041	$679,647	$1,065,915	$788,439	$1,192,892	$1,234,803
2.g.1	Education Staff	$0	$162,005	$33,667	$315,394	$241,818	$286,724	$293,892	$301,240
2.g.2	Advertisement/Promotion	$100,619	$193,688	$515,753	$276,974	$741,607	$348,755	$489,000	$495,513
2.g.3	Other	$71,681	$109,123	$169,621	$87,279	$82,490	$152,960	$410,000	$438,050
2.h	h. Recycling Market Development	$154,916	$34,639	$811,335	$426,920	$264,453	-$5,188	$0	$0
2.h.1	General Market Development Activities	$154,916	$34,639	$811,335	$426,920	$264,453	-$16,082	$0	$0
2.h.2	ODNR pass-through grant	$0	$0	$0	$0	$0	$10,895	$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	$89	$27	$0	$0	$0	$0	$0	$0
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	$51,321	$16,294	$89,001	$0	$0	$0	$2,500,000	$5,500,000
3	*3. Health Dept. Enforcement*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
	Health Department Name:								
3.a	a. Personnel	$0	$0	$0	$0	$0	$0	$0	$0
3.b	b. Supplies	$0	$0	$0	$0	$0	$0	$0	$0
3.c	c. Equipment	$0	$0	$0	$0	$0	$0	$0	$0
3.d	d. Vehicles	$0	$0	$0	$0	$0	$0	$0	$0
3.e	e. Other	$0	$0	$0	$0	$0	$0	$0	$0
4	*4. County Assistance*	*$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	*5. Well Testing*	*$3,219*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
6	*6. Out-of-State Waste Inspection*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
7	*7. Open Dump, Litter Law Enforcement*	*$378,477*	*$366,823*	*$240,978*	*$238,846*	*$236,732*	*$263,368*	*$264,852*	*$271,473*
7.a	a. Health Departments	$12,218	$0	$0	$0	$0	$0	$0	$0
7.b	b. Local Law Enforcement	$261,868	$293,827	$154,800	$154,800	$156,432	$156,000	$154,800	$158,670
7.c	c. Other	$104,391	$72,995	$86,178	$84,046	$80,300	$107,368	$110,052	$112,803
8	*8. Health Department Training*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
9	*9. Municipal/Township Assistance*	*$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	*10. Compensation to Affected Community (ORC Section 3734.35)*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
	Total Expenses	$4,338,377	$4,381,895	$6,453,623	$5,722,133	$5,490,237	$5,265,601	$8,064,903	$11,606,583

Table O-7 Expenses

Line #	Category/Program	2025	2026	2027	2028	2029	2030	2031
1	*1. Plan Monitoring/Prep.*	*$45,586*	*$46,270*	*$54,710*	*$83,355*	*$48,145*	*$48,626*	*$49,112*
1.a	a. Plan Preparation	$0	$0	$7,747	$35,687	$0	$0	$0
1.b	b. Plan Monitoring	$23,180	$23,528	$23,881	$24,239	$24,481	$24,726	$24,973
1.c	c. Other	$22,406	$22,742	$23,083	$23,429	$23,663	$23,900	$24,139
2	*2. Plan Implementation*	*$11,480,333*	*$9,849,735*	*$7,734,697*	*$8,322,630*	*$8,670,195*	*$8,492,492*	*$8,961,163*
2.a	a. District Administration	$1,172,674	$1,234,997	$1,278,597	$1,314,264	$1,391,876	$1,288,919	$1,321,834
2.a.1	Personnel	$944,914	$959,088	$973,474	$988,076	$997,957	$1,007,937	$1,018,016
2.a.2	Office Overhead	$95,885	$97,323	$98,783	$100,265	$101,267	$102,280	$103,303
2.a.3	Other	$131,875	$178,586	$206,340	$225,923	$292,651	$178,703	$200,515
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	$1,566,048	$1,581,927	$1,607,155	$1,637,240	$1,646,038	$1,662,498	$1,686,623
2.d.1	Curbside	$281,370	$283,053	$287,799	$294,109	$294,525	$297,470	$302,945
2.d.2	Drop-off	$875,282	$888,411	$901,737	$915,263	$924,416	$933,660	$942,997
2.d.3	Combined Curbside/Drop-off	$0	$0	$0	$0	$0	$0	$0
2.d.4	Multi-family	$47,859	$48,577	$49,306	$50,045	$50,546	$51,051	$51,562
2.d.5	Business/Institutional	$361,537	$361,885	$368,313	$377,823	$376,551	$380,317	$389,120
2.d.6	Other	$0	$0	$0	$0	$0	$0	$0
2.e	e. Special Collections	$725,938	$1,248,153	$1,545,016	$1,797,639	$2,045,561	$2,065,986	$2,089,116
2.e.1	Tire Collection	$0	$0	$0	$0	$0	$0	$0
2.e.2	HHW Collection	$722,500	$1,244,664	$1,541,475	$1,794,044	$2,041,930	$2,062,319	$2,085,412
2.e.3	Electronics Collection	$3,438	$3,489	$3,542	$3,595	$3,631	$3,667	$3,704
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	$1,250,000	$1,250,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000	$2,000,000
2.g	g. Education/Awareness	$1,265,673	$1,284,658	$1,303,928	$1,323,487	$1,336,722	$1,350,089	$1,363,590
2.g.1	Education Staff	$308,771	$313,402	$318,103	$322,875	$326,104	$329,365	$332,658
2.g.2	Advertisement/Promotion	$507,901	$515,519	$523,252	$531,101	$536,412	$541,776	$547,194
2.g.3	Other	$449,001	$455,736	$462,572	$469,511	$474,206	$478,948	$483,738
2.h	h. Recycling Market Development	$0	$0	$0	$0	$0	$0	$0
2.h.1	General Market Development Activities	$0	$0	$0	$0	$0	$0	$0
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	$0	$0	$0	$0	$0	$0	$0
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	$5,500,000	$3,250,000	$500,000	$750,000	$750,000	$625,000	$500,000
3	*3. Health Dept. Enforcement*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
	Health Department Name:							
3.a	a. Personnel	$0	$0	$0	$0	$0	$0	$0
3.b	b. Supplies	$0	$0	$0	$0	$0	$0	$0
3.c	c. Equipment	$0	$0	$0	$0	$0	$0	$0
3.d	d. Vehicles	$0	$0	$0	$0	$0	$0	$0
3.e	e. Other	$0	$0	$0	$0	$0	$0	$0
4	*4. County Assistance*	*$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	*5. Well Testing*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
6	*6. Out-of-State Waste Inspection*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
7	*7. Open Dump, Litter Law Enforcement*	*$278,260*	*$282,434*	*$286,671*	*$290,971*	*$293,880*	*$296,819*	*$299,787*
7.a	a. Health Departments	$0	$0	$0	$0	$0	$0	$0
7.b	b. Local Law Enforcement	$162,637	$165,076	$167,552	$170,066	$171,766	$173,484	$175,219
7.c	c. Other	$115,623	$117,358	$119,118	$120,905	$122,114	$123,335	$124,568
8	*8. Health Department Training*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
9	*9. Municipal/Township Assistance*	*$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	*10. Compensation to Affected Community [ORC Section 3734.35]*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
	Total Expenses	$11,804,179	$10,178,438	$8,076,078	$8,696,957	$9,012,220	$8,837,938	$9,310,062

Table O-7 Expenses

Line #	Category/Program	2032	2033	2034	2035	2036	2037	2038
1	*1. Plan Monitoring/Prep.*	*$49,604*	*$58,001*	*$87,002*	*$51,107*	*$51,618*	*$52,134*	*$52,655*
1.a	a. Plan Preparation	$0	$7,902	$36,401	$0	$0	$0	$0
1.b	b. Plan Monitoring	$25,223	$25,475	$25,730	$25,987	$26,247	$26,510	$26,775
1.c	c. Other	$24,380	$24,624	$24,870	$25,119	$25,370	$25,624	$25,880
2	*2. Plan Implementation*	*$8,751,470*	*$9,302,520*	*$8,569,932*	*$8,522,739*	*$8,519,108*	*$8,551,441*	*$8,511,738*
2.a	a. District Administration	$1,318,878	$1,320,152	$1,309,097	$1,252,554	$1,229,379	$1,229,973	$1,182,333
2.a.1	Personnel	$1,028,196	$1,038,478	$1,040,000	$1,040,000	$1,040,000	$1,040,000	$1,040,000
2.a.2	Office Overhead	$104,336	$105,379	$106,000	$106,000	$106,000	$106,000	$106,000
2.a.3	Other	$186,346	$176,294	$163,097	$106,554	$83,379	$83,973	$36,333
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	$1,697,414	$1,712,873	$1,729,827	$1,732,574	$1,742,923	$1,762,376	$1,763,934
2.d.1	Curbside	$303,949	$306,484	$308,984	$306,484	$306,484	$309,484	$306,484
2.d.2	Drop-off	$952,427	$961,951	$971,570	$981,286	$991,099	$1,001,010	$1,011,020
2.d.3	Combined Curbside/Drop-off	$0	$0	$0	$0	$0	$0	$0
2.d.4	Multi-family	$52,077	$52,598	$53,124	$53,655	$54,192	$54,734	$55,281
2.d.5	Business/Institutional	$388,961	$391,841	$396,149	$391,149	$391,149	$397,149	$391,149
2.d.6	Other	$0	$0	$0	$0	$0	$0	$0
2.e	e. Special Collections	$2,107,952	$2,128,497	$2,131,035	$2,128,573	$2,128,611	$2,131,650	$2,128,689
2.e.1	Tire Collection	$0	$0	$0	$0	$0	$0	$0
2.e.2	HHW Collection	$2,104,212	$2,124,719	$2,127,219	$2,124,719	$2,124,719	$2,127,719	$2,124,719
2.e.3	Electronics Collection	$3,741	$3,778	$3,816	$3,854	$3,893	$3,931	$3,971
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	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000
2.g	g. Education/Awareness	$1,377,226	$1,390,998	$1,399,973	$1,409,038	$1,418,194	$1,427,441	$1,436,781
2.g.1	Education Staff	$335,985	$339,345	$342,738	$346,166	$349,627	$353,124	$356,655
2.g.2	Advertisement/Promotion	$552,666	$558,192	$563,774	$569,412	$575,106	$580,857	$586,666
2.g.3	Other	$488,575	$493,461	$493,461	$493,461	$493,461	$493,461	$493,461
2.h	h. Recycling Market Development	$0	$0	$0	$0	$0	$0	$0
2.h.1	General Market Development Activities	$0	$0	$0	$0	$0	$0	$0
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	$0	$0	$0	$0	$0	$0	$0
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	$250,000	$750,000	$0	$0	$0	$0	$0
3	*3. Health Dept. Enforcement*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
	Health Department Name:							
3.a	a. Personnel	$0	$0	$0	$0	$0	$0	$0
3.b	b. Supplies	$0	$0	$0	$0	$0	$0	$0
3.c	c. Equipment	$0	$0	$0	$0	$0	$0	$0
3.d	d. Vehicles	$0	$0	$0	$0	$0	$0	$0
3.e	e. Other	$0	$0	$0	$0	$0	$0	$0
4	*4. County Assistance*	*$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	*5. Well Testing*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
6	*6. Out-of-State Waste Inspection*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
7	*7. Open Dump, Litter Law Enforcement*	*$302,785*	*$305,813*	*$308,871*	*$311,960*	*$315,080*	*$318,230*	*$321,413*
7.a	a. Health Departments	$0	$0	$0	$0	$0	$0	$0
7.b	b. Local Law Enforcement	$176,971	$178,741	$180,528	$182,333	$184,157	$185,998	$187,858
7.c	c. Other	$125,814	$127,072	$128,343	$129,626	$130,923	$132,232	$133,554
8	*8. Health Department Training*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
9	*9. Municipal/Township Assistance*	*$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	*10. Compensation to Affected Community [ORC Section 3734.35]*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
	Total Expenses	$9,103,859	$9,666,334	$8,965,805	$8,885,805	$8,885,805	$8,921,805	$8,885,805

Table O-7 Expense Narrative

The narrative is organized by the ten allowable uses prescribed in ORC Section 3734.57(G). The following schedule is used to adjust for inflation and growth:

2.5% annual increase through 2025
1.5% annual increase 2026-2028
1% annual increase 2029-2033

1. Plan Monitoring/Prep.

1.a Plan Preparation

SWACO has allocated $77,319 in 2022 to complete the work of the Solid Waste Management Plan update. 2023 budget is $43,389 to complete the approval process. Plan Preparation expenses are included every five years consistent with the OEPA approval cadence.

1.b. Plan Monitoring

Based on historical expenses, SWACO estimates approximately $22,000 annually for outside assistance to help with Plan implementation monitoring and reporting.

1.c Other

SWACO budgets approx. $21,000 for other plan related expenses that 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.

2. Plan Implementation

2.a.1 Personnel

Beginning in 2017, SWACO budgeted personnel costs (includes salaries and benefits) for eight administrative program staff. Two new positions have since been added including 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. The current budget includes a total of 12 FTE's. Funding for 3 FTE's are split between Programs and Operating Fund. One new position is anticipated in 2023 and another in 2024. The new positions will be focused on schools and business. Personnel expenses will be approx. $730,000 in 2022 with an increase to approx. $920,000 in 2024.

2.a.2 Office Overhead

Other office overhead includes direct expenses for utilities, office space, software, vehicle maintenance, mileage reimbursement, printing, and shipping. Office Overhead expenses are budgeted at approx. $90,000/yr.

2.a.3 Other

Administrative expenses, in that vary from $36,000 to $292,000 over the planning period include staff training and professional development, memberships and subscriptions, travel expenses, and internship stipends. Annual variances are calculated based on the overhead expenses for 'allocated administrative' costs to provide support functions from other departments within SWACO which include finance, HR, IT and legal staff. A good faith effort was used to adjust these expenses over the planning period based on the anticipated needs associated with capital, siting, legal work, and administrative capacity.

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 Yard Waste Other Para. 2.f.f.

2.d Recycling Collection

Includes expenditures for the Community Contract Assistance program, the Drop-Off program, multi-family housing unit recycling programs, business/institutional recycling programs, and the Industrial Sector Technical Assistance program.

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 $180,000. 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.

Community programming expenses also include expenditures for salaries and benefits of SWACO's communities program staff, along with expenses associated with providing technical assistance, education materials, managing the Consortium program, implementing the recycling cart grant program, the community Recycle Right education program, cart tagging projects, waste characterization projects, specialized education projects, promotion and expenses associated with community collection events for items such as pharmaceuticals, election signs, and e-waste, promotion of the program, and implementing other elements of the Community program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

2.d.2 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. Expenses for this program are expected to average $900,000/yr. for the planning period.

2.d.4 Multi-Family

Multi-family recycling has been identified as an ongoing programmatic need during the strategic evaluation process. $50,000 has been allocated to work with consultants for analysis and pilot programming. $35,000 is allocated as the annual program cost. Types of expenses may include start-up funds, rebate incentives, consortium collaboration and educational materials and tool kits.

Specifically, drop off expenditures for salaries and benefits of SWACO's drop-off recycling program staff, including costs associated purchase and maintenance of drop off containers, truck purchases and maintenance, fuel, recycling processing costs and contracts, education materials associated with the drop-off program, and other costs of implementing the drop-off recycling program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

2.d.5 Business/Institutional

Developing waste reduction and diversion programs for businesses and institutions is one of SWACO's biggest opportunities. The Commercial/Institutional Sector Technical and Diversion Assistance program began in 2017 and has been very popular. Expenses associated with this activity are anticipated to be approx. $360,000 a year including expenditures for salaries and benefits of SWACO's business recycling program staff, along with expenses associated with providing technical assistance, education materials, incentive programs, container

programs, grants, promotion of the program, and other elements of the Business Recycling program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

2.e.2 HHW Collection

The budget reflects expenditures for the HHW collection program. SWACO will evaluate the existing program to identify opportunities to enhance or modify the program to increase its impact and efficiency as outlined in the capital budget.

Expenses associated with the HHW/Convenience Center include expenditures for salaries and benefits of SWACO's HHW/Convenience Center program staff. Reflects expenditures for the HHW collection program, including contracts with facilities and service providers, costs for legal and consulting services to develop bid specifications for collection and processing of materials, education and promotional expenses, and other costs of implementing the HHW/Convenience Center program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

Collection program costs projected for the planning period include: $600,000 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. This annual expense is adjusted in 2026 and will increase proportionately though 2029 as the anticipated HHW Convenience Center is completed and is fully operational.

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. $3,600 is allocated for legal and consulting services.

2.f Yard Waste/Other Organics

Programming related to organics management includes expenditures for salaries and benefits of SWACO's food waste program staff, includes costs for development of education and promotional materials, conducting district-wide and community-specific education campaigns, providing technical assistance, providing financial incentives, implementing container programs, conducting research, establishing partnership projects, implementing pilot projects, providing grants, maintaining the SaveMoreThanFood web site, and other costs of implementing the food waste program.

Expenses associated with the yard waste management program include two yard waste management contracts that have averaged $1,700,000. The District rebid one of the two contracts in 2022. The other contract is due to be rebid in 2025. The results of the rebid will save the District approx. $150,000 for 2022. The District expects to provide an alternative composting program starting in 2023 that will reduce costs further. Starting in 2023, the budget is reduced to $1,000,000 with annual increases anticipated based on volumes.

Program scope, services and/or funding may change during the planning period based on annual evaluations.

2.g Education/Awareness

Expenses reflect costs for educational staff, and the 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 public, school systems, and city, village, and township administrations.

The District anticipated that expenses would cover 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.

Expenses also include enhancing 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.

2.g.1 Education Staff
This covers the expenses associated with the education staff.

2.g.2 Advertisement/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 using annual District-wide educational campaigns. 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. Total annual costs for media/advertising and the education/awareness campaigns are expected to average approx. $500,000/yr.

2.g.3 Other
Other education and outreach include a variety of educational related programing.

Surveys
SWACO has budgeted $15,000 each year 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 include $15,000 for tours of the Franklin County Sanitary Landfill which includes school bus reimbursement costs and printing of educational materials.

Workshops
Funds are also budgeted annually for educational partnership initiatives which focus on collaborating with local nonprofits and government agencies to jointly promote waste reduction, reuse and recycling initiatives. Expenses may include service agreements, supplies, equipment, promotional items, and educational materials.

School Programs
Expenditure related to school programming include salaries and benefits of SWACO's schools program staff, including costs associated with providing technical assistance, managing the School Consortium program, developing education materials and other resources, providing incentive programs such as the School Recycling Champion program, providing container programs, conducting research and performing waste sorts, implementing pilot projects, implementing partnership projects, and other expenses of implementing the Schools program. Program scope, services and/or funding may change during the planning period based on annual evaluations

Outreach
Outreach programming expenses includes expenditures for salaries and benefits of SWACO's outreach program staff along with expenses associated with promotional items and education materials, operation of the container

loan program, educational partnerships with local government or non-profit organizations, including equipment and materials associated with those partnership programs, creation of new education materials, promotion of the program, and other elements of the Outreach program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

Projects and Initiatives Expenses

Other includes expenses for special projects and initiatives. A sum of $40,000 is typically budgeted annually for unplanned special projects and needs that may arise throughout the planning period. Other budgeted expenses could include $5,000 for continued data collection expansion throughout the planning period.

General Market Development Activities

The SWACO's Community Waste Reduction Grant Program constitutes the majority of the approx. $450,000 annual budget. 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 within this budget

Community Programs

Programming expenses includes expenditures for salaries and benefits of SWACO's communities program staff, along with expenses associated with providing technical assistance, education materials, managing the Consortium program, implementing the recycling cart grant program, the community Recycle Right education program, cart tagging projects, waste characterization projects, specialized education projects, promotion and expenses associated with community collection events for items such as pharmaceuticals, election signs, and e-waste, promotion of the program, and implementing other elements of the Community program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

Public Information

Public information expenses cover salaries and benefits of SWACO's public information program staff, and reflect costs for annual District-wide educational campaigns, which includes content development, advertising, and other promotional expenses. Includes the creation and distribution of mailed, electronic, and video materials. This expense also includes maintenance and upgrades for SWACO websites, securing outside vendors for any and all program elements, and other expenses related to the public information program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

Tours

Tour expense cover salaries and benefits of SWACO's Tours staff, includes costs for education materials, school bus reimbursements, promotional expenses, education center costs such as utilities and groundskeeping, and other costs of implementing the tours program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

Grants

The grant program includes expenditures for salaries and benefits of SWACO's grants program staff, includes costs for SWACO's Community Waste Reduction Grant Program, Event Waste Reduction Grant program, Special Grants, Market Development Grants, Targeted Focus Grants, other grant programs, and other costs of implementing the grants program. Program scope, services and/or funding may change during the planning period based on annual evaluations.

Table O-7b Expenses for 2.p.p Other

Estimated annual capital expense categories in Table 6-2. b. include the following:

- Education Center – includes all capital costs associated with the design and construction of a new education center. Could include purchase of property, although that is not anticipated at this time.
- Composting Facility - includes all capital costs associated with design and construction of a new compost facility capable of accepting food waste and other compostable materials. Could include purchase of property, although that is not anticipated at this time.
- HHW/Convenience Center - includes all capital costs associated with design and construction of a new HHW/Convenience center. Could include purchase of property, although that is not anticipated at this time.
- Organics Carts – includes all expenses associated with purchase and distribution of wheeled curbside carts for the curbside collection of food waste or co-collection of yard and food waste.
- Recycling Carts - includes all expenses associated with purchase and distribution of wheeled curbside carts for the curbside collection of residential recyclables.
- Recycling Truck – all expenses associated with purchase of a new recycling truck to service SWACO's recycling drop-off containers, which is typically done on a 5-to-7-year schedule.

Note that if a property purchase is needed for the Education Center, HHW Center, or Composting Facility, the budget for that capital improvement will be adjusted to include the property cost and the 2.p.p. capital expenditure schedule will be adjusted to ensure an ample ongoing fund balance.

Anticipated capital expenses are included in line 2.p.p. The Annual budgets reflect these activities:

Year	Environmental Education Center	HHW Center	Composting Facility	Organics Carts	Organics Carts Columbus	Recycling Carts	Recycling Truck	Total Capital
2023			$2,000,000			$500,000		$2,500,000
2024			$5,000,000			$500,000		$5,500,000
2025	$2,500,000	$3,000,000						$5,500,000
2026	$2,500,000			$250,000			$500,000	$3,250,000
2027				$250,000	$250,000			$500,000
2028				$250,000	$500,000			$750,000
2029				$250,000	$500,000			$750,000
2030				$125,000	$500,000			$625,000
2031					$500,000			$500,000
2032					$250,000			$250,000
2033					$250,000		$500,000	$750,000
Total	$5,000,000	$3,000,000	$7,000,000	$1,125,000	$2,750,000	$1,000,000	$1,000,000	$20,875,000

7. Open Dump, Litter Law Enforcement

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 approx. $265,000 is budgeted annually to the Franklin County Sheriff's Office.

Expenditures for SWACO's Environmental Crimes Task Force support the Franklin County Sheriff's Office and the Office of the Franklin County Prosecutor and other costs related to enforcement of solid waste laws. These

expenses include maintenance of the itsacrime web page and hotline. 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.

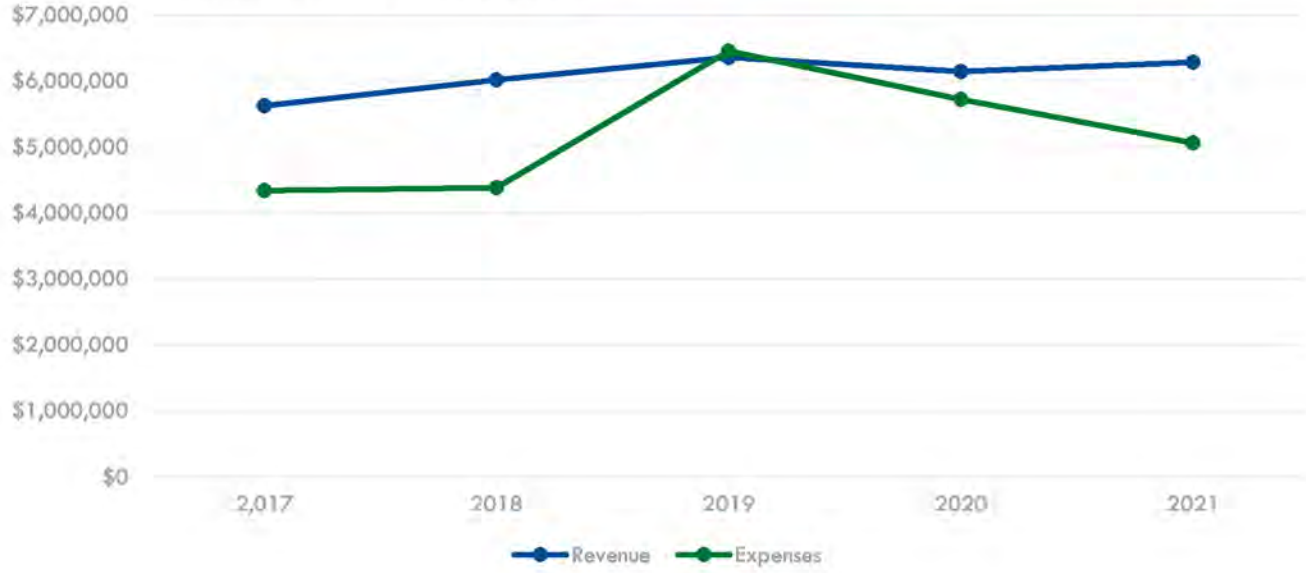
Percentage Increases in Expenses - Inflation Index

The District has considered historical and projected inflationary factors when calculating expenses for the 2023 to 2038 planning period including data from the Federal Bureau of Labor Statistics (http://www.bls.gov/). The District has established that expenses will be adjusted:

Planning Period	Projected Annual Budget Increase
2023 - 2025	2.5%
2026 – 2028	1.5%
2029 – 2038	1.0%

Revenues projections are conservative and budget projections are prudent and consistent with the overall reduction strategy. SWACO has been traditionally responsible when budgeting to ensure that revenues exceed

Figure H-9.3 Historical Revenues versus Expenses



This table will show the annual surplus or deficit and the annual carryover balance for each year in the planning period.

Table O-8: Budget Summary

Year	Generation Fee Revenue	Allocated Dollar Revenue	Other Revenue	Total Revenue	Operating Expenses	Capital Expenses	Total Expenses	Annual Surplus - Deficit ($)	Fund Balance
2017	$5,911,075	$0	$13,009	$5,924,084	4,338,377	$0	$4,338,377	$1,585,707	$3,538,360
2018	$6,760,715	$0	$44,036	$6,804,751	4,381,895	$0	$4,381,895	$2,422,855	$5,961,215
2019	$6,393,535	$0	$355,965	$6,749,500	6,453,623	$0	$6,453,623	$295,877	$6,257,092
2020	$6,220,680	$0	$234,293	$6,454,973	5,722,133	$0	$5,722,133	$732,841	$6,989,933
2021	$6,181,189	$0	$68,539	$6,249,728	$5,490,237	$0	$5,490,237	$759,492	$7,749,425
2022	$6,315,796	$6,885,738	$152,433	$13,353,967	$5,265,601	$0	$5,265,601	$8,088,366	$15,837,791
2023	$6,181,189	$1,296,215		$7,477,404	$5,564,903	$2,500,000	$8,064,903	-$587,498	$15,250,293
2024	$6,304,813	$1,260,963		$7,565,775	$6,106,583	$5,500,000	$11,606,583	-$4,040,808	$11,209,485
2025	$6,430,909	$1,286,182		$7,717,091	$6,304,179	$5,500,000	$11,804,179	-$4,087,088	$7,122,397
2026	$6,559,527	$1,311,905		$7,871,433	$6,928,438	$3,250,000	$10,178,438	-$2,307,006	$4,815,391
2027	$6,690,718	$1,338,144		$8,028,861	$7,576,078	$500,000	$8,076,078	-$47,217	$4,768,174
2028	$6,824,532	$1,364,906		$8,189,439	$7,946,957	$750,000	$8,696,957	-$507,518	$4,260,656
2029	$6,961,023	$1,392,205		$8,353,227	$8,262,220	$750,000	$9,012,220	-$658,993	$3,601,663
2030	$7,100,243	$1,420,049		$8,520,292	$8,212,938	$625,000	$8,837,938	-$317,646	$3,284,017
2031	$7,242,248	$1,448,450		$8,690,698	$8,810,062	$500,000	$9,310,062	-$619,365	$2,664,653
2032	$7,387,093	$1,477,419		$8,864,512	$8,853,859	$250,000	$9,103,859	-$239,347	$2,425,305
2033	$7,534,835	$1,506,967		$9,041,802	$8,916,334	$750,000	$9,666,334	-$624,532	$1,800,773
2034	$7,685,532	$1,537,106		$9,222,638	$8,965,805	$0	$8,965,805	$256,833	$2,057,606
2035	$7,839,242	$1,567,848		$9,407,091	$8,885,805	$0	$8,885,805	$521,285	$2,578,891
2036	$7,996,027	$1,599,205		$9,595,232	$8,885,805	$0	$8,885,805	$709,427	$3,288,318
2037	$8,155,948	$1,631,190		$9,787,137	$8,921,805	$0	$8,921,805	$865,332	$4,153,650
2038	$8,319,067	$1,663,813		$9,982,880	$8,885,805	$0	$8,885,805	$1,097,075	$5,250,724

Major Facility Project

The SWACO Executive Director, SWACO Board, and Team will be completing a thorough cost analysis of potential capital improvements over the planning period. The analysis will include financing, material availability, community programs, and community input. As deemed necessary, a facility siting process would include community and public comments. Further, the District may consider a phase in of some projects that may expand over the planning period to include a full-service program. Examples of this phase-in strategy could be the Composting/Organics Processing Facility and the HHW Convenience center that may be expanded over the planning period based on actual costs, volumes, and efficiencies/economies of scale.

Table O-8a Major Facility Project Expenses Estimates from 2023-2033

Year	Environmental Education Center	HHW Center	Composting Facility	Organics Carts	Organics Carts Columbus	Recycling Carts	Recycling Truck	Total Capital
2023			$2,000,000			$500,000		$2,500,000
2024			$5,000,000			$500,000		$5,500,000
2025	$2,500,000	$3,000,000						$5,500,000
2026	$2,500,000			$250,000			$500,000	$3,250,000
2027				$250,000	$250,000			$500,000
2028				$250,000	$500,000			$750,000
2029				$250,000	$500,000			$750,000
2030				$125,000	$500,000			$625,000
2031					$500,000			$500,000
2032					$250,000			$250,000
2033					$250,000		$500,000	$750,000
Total	$5,000,000	$3,000,000	$7,000,000	$1,125,000	$2,750,000	$1,000,000	$1,000,000	$20,875,000

Contingency or Alternative Budget

Table O-11 details a contingency budget that would be employed in the future if certain circumstances were to occur including:

- There is uncertainty about the SWMD's ability to collect revenue from a primary funding source identified in part A of this appendix or collect the projected amount of revenue.
- There is uncertainty about how much big-ticket line items will cost in the future.
- There is the potential for the District to receive more money than projected.
- The District wants to have flexibility to implement additional programs if it receives the money.

The SWMD does not anticipate the need to identify any type of contingent funding or financing that would be necessary to fund any type of program activity in conjunction with Plan implementation efforts therefore Table O-11 is not provided.

Affected Community Compensation Agreement

Ohio Revised Code 3734.53(A)(10) requires a solid waste management plan to provide an analysis of expenses that the district is liable for under Ohio Revised Code Section 3734.35. No analysis is provided in this plan document. SWACO is not a party to an affected community agreement, nor is it subject to an affected community agreement.

C. SUMMARY FINDINGS

Key Takeaways

The financial plan in Chapter 6 and Appendix O provides the following without any increase in fees:

1. Continuation and growth of virtually all existing waste reduction programming
2. New staff (increased internal capacity)
3. Grants, Educational Institutions, Commercial recycling priorities
4. Continued Emphasis on Education
5. New Strategic Initiatives
6. Composting Infrastructure & Programs
7. Facility, Carts, Incentives, Education
8. Commercial Recycling
9. Incentives, more staff, high priority growth, "Universal Recycling"

10. Environmental Education Center
11. HHW Convenience Centers
12. Continued Evaluation w/ Clear Goal of Expansion
13. Infrastructure and Market Support for Hard to Recycle Material (i.e., Mattresses, Textiles)

Potential New Programming

The District budget as presented in this appendix provides for the continuation and growth of virtually all existing programs. There are also provisions for new staff that will provide an increased internal capacity. Grants, Educational Institutions, and Commercial recycling priorities are maintained. There is a strong emphasis on reduction education with new strategic initiatives focused on "Universal Recycling." All programming is responsibly budgeted and focused on the clear goal of reducing reliance on the landfill.

D. MAJOR FACILITY PROJECTS

During the course of the planning period, SWACO is intending to move forward on 3 significant facility initiatives, each of which is in a different stage of planning and evaluation: a composting facility capable of accepting food waste; a new education center; and an HHW/Convenience Center.

Potential Capital Investments – Major Facility Projects

Appendix O also outlines the capital budget including:

Organics

- Organics Facility: Assumed in operation 2025 with startup of Residential curbside material 2026-2027
- Facility, carts, education
- Cart purchases are projected to be $1,125,000 total starting in 2026 and continuing until 2030. An additional cart purchase budget of $2,750,000 total has been established for the City of Columbus starting in 2027 and continuing until 2033.

HHW/Convenience Center

- Facility: Assumed operation 2026 with a capital cost of $3,000,000
- Operational expenses are anticipated to be $1,000,000 from 2026 – 2028

New Environmental Education Center

- $5,000,000 Capital Cost with startup 2025-2026.

Business Recycling

- Increased assistance and support
- $150,000 operational budget increase 2024-2025 timeframe

Composting and Recycling Infrastructure & Programs

- Facility, Carts, Incentives, Education
- School Recycling
- $500,000 for 2023 and 2024 for recycling carts
- School District-level assistance and focus on Universities.
- $50,000 budget increase 2024-2025 timeframe

Grant Programs

- New Market Development Grant - $100,000 starting in 2024

Recycling Collection Truck

- $500,000 purchase in 2026 with additional vehicle in 2033.

The Section O financial plan provides the following without any increase in fees:

1. Continuation and growth of virtually all existing waste reduction programming
2. New staff (increased internal capacity)
3. Grants, Educational Institutions, Commercial recycling priorities

4. Continued Emphasis on Education
5. New Strategic Initiatives
6. Composting Infrastructure & Programs
7. Facility, Carts, Incentives, Education
8. Commercial Recycling
9. Incentives, more staff, high priority growth, "Universal Recycling"
10. Education Center
11. HHW and Convenience Centers
12. Continued Evaluation w/ Clear Goal of Expansion
13. Infrastructure and Market Support for (i.e., Mattresses, Textiles)

Generation Fee – Revenue Funding Sources and Projections

SWACO has adopted a conservative model for 2023 to 2038 income projections. No Recycling Revenue, Interest, Grants, or Other Revenue is included in the projections from 2023 to 2038. Generation Fee Revenue compromised over 98% of the 2021 reference year total revenue and is used as the basis for total revenue throughout the planning period. SWACO projects that Generation Fee and Allocated Dollar revenue will increase only a conservative 2%/year.

SWACO has presented in Appendix-O a thorough but responsible budget for the planning period. Revenues projections are conservative and budget projections are prudent and consistent with the overall reduction strategy. SWACO projects that the continued use of the $1/ton Allocated Dollar for waste reduction programming will be sufficient to maintain the financial viability of the District over the 20-year planning period and ensure a responsible and sustainable fund balance. SWACO does not at this time anticipate that an increase in the $5/ton Tip Fee will be required to maintain a balanced budget.

Budget and Projected Expenses and Planning Period Fund Balance Projections

The budget over the planning period was designed to keep expenses close to the estimated annual revenue. SWACO intends to use its existing carryover balance to fund expenses that are above the annual revenue amount. If expenses do not reach the annually budgeted amount, funds will be deposited in the carryover balance. Conversely, if expenses exceed revenues, the fund balance will be used as a contingency source of revenue.

The SWACO Board confirmed in January 2023 the programming priorities and opportunities for the planning period.

These priorities and programs are captured in the projected budget Appendix O Table O-7 and are detailed in Appendices H, I and L, M and N including modeling based on existing programs and best practices. Each of these programs and strategies will be established, continued, or enhanced during the planning period:

Contingency Budget and Impact on Fund Balance

The SWMD does not anticipate the need to identify any type of contingent funding or financing that would be necessary to fund any type of program activity in conjunction with Plan implementation efforts therefore Table O-11 is not provided.

Affected Community Compensation Agreement

No analysis is provided in this plan document. SWACO is not a party to an affected community agreement, nor is it subject to an affected community agreement.

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, SWACO Morse Road Transfer Facility and SWACO Jackson Pike Transfer Facility. 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		
In-District				
Franklin Co. Sanitary Landfill	Franklin	OH	MSW Landfill	Ongoing
SWACO Morse Road Transfer Facility	Franklin	OH	Transfer Facility	Ongoing
SWACO Jackson Pike Transfer Facility	Franklin	OH	Transfer Facility	Ongoing
Out-of-District				
None				
Out-of-State				
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 - July 11, 2017

A. 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.

1-2 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.

1-3 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 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.

B. SECTION 2: DISTRICT RULES

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 Section 2, 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.

APPENDIX R: SURVEY FORMS & SURVEY PROCESS

For SWACO's Survey process, please refer to Appendix H.

A. REFERENCE YEAR ADR SURVEY LETTER FOR PREVIOUS NON-REPORTING ENTITIES

SWACO
FROM WASTE TO RESOURCES

www.swaco.org

Dear Facility Manager,

Thank you for being an important part of Central Ohio's recycling industry! We know that 2021 continued to be a challenging time for all local businesses, including those in the recycling industry. Your business plays a critical role in helping Franklin County reach a goal of diverting 75% of the waste stream from the landfill by 2032.

One of the goals of the Solid Waste Authority of Central Ohio (SWACO) is to support businesses like yours that are part of Central Ohio's diverse and growing recycling economy. If you're not familiar with SWACO, we are a governmental entity responsible for providing local businesses, residents, and governments with information and resources to help them recycle the waste that they generate. If there are ways that SWACO can partner with you or help to support your business, please do not hesitate to reach out to us with your ideas!

Each year we also contact all of the recycling related businesses in Central Ohio and ask them to complete a short survey that will help determine Franklin County's progress toward meeting our state and local recycling goals. Your survey response will be combined with other survey responses into a Franklin County report. Individual company information will **not** be identified. Last year we were able to document a 51% waste diversion rate in Franklin County!

While you may not have participated in this survey in the recent past, we would love to include your information as part of this annual report.

We conduct this survey through an online "Re-TRAC" system designed specifically to gather this information. If you have questions or concerns about this please email me or call me at the number below. This survey can also be completed in hard copy form or over the phone.

We encourage you to visit swaco.org to learn more about SWACO and the programs that SWACO provides.

Please submit the calendar year 2021 recycling data for your business by Friday, April 1st, 2022.

Website: http://connect.re-trac.com

Username: customersupport@terracycle.net

Password (case sensitive): Password1

B. REFERENCE YEAR ADR SURVEY LETTER FOR PREVIOUS REPORTING ENTITIES

SWACO
FROM WASTE TO RESOURCES

www.swaco.org

Dear FIRST NAME LAST NAME,

Thank you for being an important part of Central Ohio's recycling industry, and thank you for reporting the recycling data last year for COMPANY!

We know that 2021 continued to be a challenging time for all local businesses, including those in the recycling industry. Your business plays a critical role in helping Franklin County reach a goal of diverting 75% of the waste stream from the landfill by 2032. If there are ways that SWACO can partner with you or help to support your business, please do not hesitate to reach out to us with your ideas!

As we do every year, the Solid Waste Authority of Central Ohio (SWACO) has a short survey of your 2021 recycling activities that will help determine Franklin County's continued progress toward meeting state recycling goals. Your survey response will be combined with other survey responses into a Franklin County report. Individual company information will **not** be identified. Last year we were able to document a 51% recycling rate in Franklin County!

Please submit the calendar year 2021 recycling data for your business by Friday, April 1st, 2022.

Completing this survey should only take a few minutes. Only materials generated *within* Franklin County, Ohio should be reported.

Website: http://connect.re-trac.com

Username:

Password (case sensitive):

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-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

During the process of preparing a plan, the policy committee signs three official documents certifying the plan. These documents are as follows:

A. CERTIFICATION STATEMENT FOR THE DRAFT SOLID WASTE MANAGEMENT PLAN

The Policy committee signs this statement to certify that the information presented in the draft solid waste management plan submitted to Ohio EPA is accurate and complies with the Format 4.1.

B. RESOLUTION ADOPTING THE SOLID WASTE MANAGEMENT PLAN

(adopted prior to distributing the draft plan for ratification)

The policy committee signs this resolution to accomplish two purposes:

- Adopt the draft solid waste management plan.
- Certify that the information in the solid waste management plan is accurate and complies with the Format 4.1.

The policy committee signs this resolution after considering comments received during the public hearing/public comment period and prior to submitting the solid waste management plan to political jurisdictions for ratification. The policy committee should not make any changes to the solid waste management plan after signing the resolution.

C. RESOLUTION CERTIFYING RATIFICATION OF THE SOLID WASTE MANAGEMENT PLAN

The policy committee signs this resolution to certify that the solid waste management plan was ratified properly by the political jurisdictions within the solid waste management district. The policy committee signs this resolution after the solid waste management plan is ratified and before submitting the ratified plan to Ohio EPA)

- Other documents to include in Appendix T include:
- Public notices
- Copies of notices sent to:
    - adjacent SWMDs;
    - the director of Ohio EPA;
    - the 50 industrial, commercial, or institutional facilities that generate the largest quantities of solid waste within the SWMD; and
    - the local trade associations representing the industrial, commercial, or institutional facilities generating the largest quantities of solid waste in the SWMD.

RESOLUTION 04-23

Certifying SWACO's draft Solid Waste Management Plan update for submittal to the Ohio Environmental Protection Agency for review.

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,* version 4.1, the *2020 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 no later than February 28, 2023, for review and comment.

Requested by: Andrew Booker, Programs Manager

BE IT RESOLVED by the Board of Trustees of the Solid Waste Authority of Central Ohio that:

1. The SWACO Board of Trustees authorizes the submission of the draft Solid Waste Management Plan update (Plan) to the Ohio Environmental Protection Agency for review and comment.

2. If necessary to demonstrate the availability of financial resources to implement the Plan pursuant to Ohio Revised Code Section 3734.53(13)(d), the SWACO Board of Trustees shall, in conjunction with the submission of the ratified Solid Waste Management Plan, authorize the use of one dollar ($1.00) per ton from the gate rate charged at the Franklin County Sanitary Landfill, the Jackson Pike Transfer Station, and the Morse Road Transfer Station for Plan implementation.

3. This resolution shall be in full force and effect from and immediately upon its adoption.

Patrick King

Patrick King, Chair of the SWACO Board of Trustees — **Date**
Representing the Public

Susan A. Tilgner — 2/14/2023

Susan Tilgner, Vice Chair of the SWACO Board of Trustees — **Date**
Representing the General Interests of Citizens

Jennifer Gallagher
Designee of the Mayor of the City of Columbus

2-14-2023
Date

Richard J. Gibbs
Designee of the Franklin County Health Commissioner

2-14-2023
Date

Ron Grossman
Appointed by the Franklin County Townships Association

2/14/23
Date

Kevin Pangrace (for the Honorable John O'Grady)
Representing the President of the Franklin County Commissioners

2-14-2023
Date

Kathy Owens
Appointed by the Mayor of the City of Columbus

2-14-2023
Date

Kenneth N. Wilson
Appointed by the Franklin County Board of Commissioners

Date

Date Approved: February 14, 2023

Patrick King
Chair, Board of Trustees

Vote:
For: 7 Against: 0 Abs: 0

Danielle Kuskowski, Secretary

Approved as to Form: Rebecca L. Egelhoff, Director of Legal Affairs

SWACO
FROM WASTE TO RESOURCES

LOCALiQ
The Alliance Review | Ashland Times Gazette
The Daily Jeffersonian | Record-Courier
The Daily Record | The Repository
The Times-Reporter | The Independent
Akron Beacon Journal | Columbus Dispatch

PO Box 630599 Cincinnati, OH 45263-0599

PROOF OF PUBLICATION

Barbara Colebank
Attn: Accounts Payable
Swaco
4239 London Groveport RD

Grove City OH 43123-9522

STATE OF OHIO, COUNTY OF FRANKLIN

The Columbus Dispatch, a newspaper printed and published at Columbus, Franklin County, Ohio, and of general daily circulation, and personal knowledge of the facts herein state and that the notice hereto annexed was Published in said newspapers in the issue dated on:

10/15/2023

and that the fees charged are legal.
Sworn to and subscribed before on 10/15/2023

Legal Clerk

Notary, State of WI, County of Brown 8.25.26

My commision expires

Publication Cost:	$1241.81	
Order No:	9401687	# of Copies:
Customer No:	775896	1
PO #:		

THIS IS NOT AN INVOICE!

Please do not use this form for payment remittance.

MARIAH VERHAGEN
Notary Public
State of Wisconsin

PUBLIC NOTICE
SOLID WASTE
AUTHORITY OF
CENTRAL OHIO

Public Comment Period and Public Hearing for Draft Solid Waste Management Plan Update

The Solid Waste Authority of Central Ohio (SWACO) is establishing a 30-day written comment period (October 16 - November 16, 2023) on the draft Solid Waste Management Plan Update (Plan Update) (Ohio Revised Code Section 3734.54). SWACO has prepared the draft Plan Update as required by Section 3734.54 of the Ohio Revised Code. The draft Plan Update includes a budget and fees to finance the Plan, a solid waste facility inventory, projections and strategies, facilities and programs to be used, an analysis of the progress made toward achieving state solid waste reduction goals, and SWACO rules.

The Plan Update includes six chapters that are prepared specifically for the public's review. They include:
1. Introduction
2. District Profile
3. Waste Generation
4. Waste Management
5. Waste Reduction and Recycling
6. Budget

This draft is an update to a previously approved solid waste plan. This Plan Update details the following: Recycling Infrastructure Inventory, Population Data, Disposal Data, Residential/Commercial/Industrial Recycling Data, Waste Generation Data, a Strategic Evaluation of Old and New Proposed SWACO Programs, Program Priorities, Achievement of State Recycling Goals, Education and Outreach Programs, Greenhouse Gas Emissions Calculations, Financial Data, Designation of Facilities, District Rules, and a Siting Strategy.

The draft Plan Update includes a demonstration of access to landfill capacity and determines there are more than twenty years of landfill capacity available at the Franklin County Landfill.

Under this plan, the Board of Commissioners is authorized to designate facilities in accordance with Section 343.014 and 343.015 of the Ohio Revised Code. 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.

The draft Plan update includes existing SWACO rules contained in Appendix Q. 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.

The draft Plan Update complies with State Plan Goal #2: The SWMD shall reduce and recycle at least 25 percent of the solid waste generated by the residential/commercial sector. SWACO is committed to maintaining its achievement of Goal 2. SWACO also complies with Goal #1: Providing infrastructure for recycling to over 80% of the population.

SWACO primarily funds plan programs and current operations through a generation fee of $5.00 per ton for all solid waste generated within Franklin County and disposed at all Ohio based transfer stations or landfills. SWACO is projected to remain at the current rate of $5 per ton for the entire planning period. SWACO projects that the continued use of the $5/ton Generation Fee with a $1/ton Allocated Dollar from the tipping fee at the landfill and transfer stations will be sufficient to maintain the financial viability of the District over the 20-year planning period and ensure a responsible and sustainable fund balance.

Public Hearing Notice: SWACO will hold a public hearing to obtain oral comments regarding the draft Plan Update on Thursday, November 16, 2023 at 6:00 PM at the Solid Waste Authority of Central Ohio Administrative Building, 4239 London-Groveport Road, Grove City, Ohio 43123.

SWACO will accept written comments as required by Ohio Revised Code Section 3734.55 on the draft Plan Update from October 16 until November 16, 2023. Written comments should be sent to the attention of Mr. Andrew Booker, Solid Waste Authority of Central Ohio, 4239 London-Groveport Road, Grove City, Ohio 43123.

The draft Plan Update is available for review on SWACO's website at www.swaco.org or at SWACO's office located at 4239 London-Groveport Road, Grove City, Ohio 43123.

Please contact SWACO at 614-871-5100 with any questions about the Plan Update.

PUBLIC NOTICE
SOLID WASTE AUTHORITY OF CENTRAL OHIO

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The Solid Waste Authority of Central Ohio (SWACO) is establishing a 30-day written comment period (October 16 – November 16, 2023) on the draft Solid Waste Management Plan Update (Plan Update) (Ohio Revised Code Section 3734.54). SWACO has prepared the draft Plan Update as required by Section 3734.54 of the Ohio Revised Code. The draft Plan Update includes a budget and fees to finance the Plan, a solid waste facility inventory, projections and strategies, facilities and programs to be used, an analysis of the progress made toward achieving state solid waste reduction goals, and SWACO rules.

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SWACO will accept written comments as required by Ohio Revised Code Section 3734.55 on the draft Plan Update from October 16 until November 16, 2023. Written comments should be sent to the attention of Mr. Andrew Booker, Solid Waste Authority of Central Ohio, 4239 London-Groveport Road, Grove City, Ohio 43123.

The draft Plan Update is available for review on SWACO's website at www.swaco.org or at SWACO's office located at 4239 London-Groveport Road, Grove City, Ohio 43123.

Please contact SWACO at 614-871-5100 with any questions about the Plan Update.

RESOLUTION 065-23

Adopting SWACO's amended draft Solid Waste Management Plan for ratification.

WHEREAS, SWACO completed the draft Solid Waste Management Plan ("Plan") and submitted it to the Ohio Environmental Protection Agency ("OEPA") for review and comment on February 24, 2023, and the OEPA provided comments in a non-binding advisory opinion on April 10, 2023;

WHEREAS, the SWACO Board of Trustees ("Board") has reviewed the non-binding advisory opinion received from the OEPA and has taken into consideration these comments, incorporating changes into the Plan as necessary; and

WHEREAS, SWACO has conducted a thirty (30)-day comment period (October 16, 2023–November 16, 2023) and a public hearing (November 16, 2023) to provide the public an opportunity to have input in this Plan.

NOW, THEREFORE, under such procedures, and with a simple majority vote by the Board of Trustees of the Solid Waste Authority of Central Ohio, the amended draft Plan is adopted for ratification.

BE IT RESOLVED by the Board of Trustees of the Solid Waste Authority of Central Ohio that:

1. The SWACO Board of Trustees adopts the amended draft Solid Waste Management Plan for the Solid Waste Authority of Central Ohio.
2. The SWACO Board of Trustees certifies that, to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the Plan, and the availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of SWACO for the period of time covered by the Plan, are accurate and in compliance with the requirements of the District Solid Waste Management Plan Format, revision 4.1.
3. This resolution shall be in full force and effect immediately upon its adoption.

12-12-2023

Patrick King, Chair of the SWACO Board of Trustees — **Date Signed**
Representing the Public

12/12/2023

Susan Tilgner, Madam Vice Chair of the SWACO Board of Trustees — **Date Signed**
Representing the General Interests of Citizens

Jennifer Gallagher — **Date Signed**
Designee of the Mayor of the City of Columbus

12/12/2023

Richard J. Gibbs
Designee of the Franklin County Health Commissioner

Date Signed

Kathy Owens
Appointed by the Mayor of the City of Columbus

Date Signed

12/12/23

Kevin Paragrace
Representing the President of the Franklin County Board of Commissioners

Date Signed

12/12/23

Randy Sokol
Representing the Industrial, Commercial, or Institutional Generators of Solid Wastes within the District

Date Signed

Ken Wilson
Appointed by the Franklin County Board of Commissioners

Date Signed

Date Adopted: December 12, 2023

Vote:
For: 5 Against: 0 Abs: 0

Patrick King
Chair, Board of Trustees

Danielle Kaskowski, Secretary

Approved as to Form:

Rebecca L. Egelhoff, Director of Legal Affairs

RESOLUTION 022-24

Declaring SWACO's Solid Waste Management Plan to be ratified as the Plan for the District.

WHEREAS, the Solid Waste Authority of Central Ohio ("SWACO") completed the draft Solid Waste Management Plan ("Plan") and submitted it to the Ohio Environmental Protection Agency ("OEPA") for review and comment on February 24, 2023, and the OEPA provided comments in a non-binding advisory opinion on April 10, 2023; and

WHEREAS, the SWACO Board of Trustees ("Board") reviewed the non-binding advisory opinion received from the OEPA and took into consideration these comments, incorporating changes into the Plan as necessary; and

WHEREAS, SWACO conducted a thirty (30) day comment period (October 16, 2023–November 16, 2023) and a public hearing (November 16, 2023) to provide the public an opportunity to have input in the Plan; and

WHEREAS, the Board adopted the Plan on December 12, 2023, and within thirty (30) days delivered a copy of the Plan to the Franklin County Board of Commissioners and to the legislative authority of each municipal corporation and township under SWACO's jurisdiction ("District") for their approval or disapproval; and

WHEREAS, the Board has determined that the Franklin County Board of County Commissioners and legislative authorities of a combination of municipal corporations and townships with a combined population comprising at least sixty percent (60%) of the total population of the District have approved the Plan, including the City of Columbus, which is the municipal corporation having the largest population within the boundaries of the District.

NOW, THEREFORE, under such procedures, and with a simple majority vote by the Board of SWACO, the Plan is declared to be ratified as the solid waste management plan for the District in accordance with Ohio Revised Code §3734.55 and shall be submitted to Ohio EPA for review and approval.

Requested by: Andrew Booker, Programs Manager

BE IT RESOLVED by the Board of Trustees of the Solid Waste Authority of Central Ohio that:

1. The SWACO Board of Trustees declares the Solid Waste Management Plan for the Solid Waste Authority of Central Ohio to be ratified as the solid waste management plan for the District in accordance with Ohio Revised Code §3734.55.
2. The SWACO Board of Trustees certifies that, to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the Solid Waste Management Plan, and the availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of SWACO for the period of time covered by

the Plan, are accurate and in compliance with the requirements of the District Solid Waste Management Plan Format, revision 4.1.

3. This resolution shall be in full force and effect from and immediately upon its adoption.

Patrick King, Chair of the SWACO Board of Trustees
Representing the Public

Date Signed

Susan A. Tilgner

Susan Tilgner, Vice-Chair of the SWACO Board of Trustees
Representing the General Interests of Citizens

04-09-2024
Date Signed

Chelsea Barnett (for Hon. Kevin Boyce)
Representing the President of the Franklin County Board of Commissioners

4/9/24
Date Signed

Jeff Gibbs
Franklin County Health Commissioner Designee

4/9/24
Date Signed

Ron Grossman
Appointed by the Franklin County Township Association

Date Signed

Kathy Owens
Appointed by the Mayor of the City of Columbus

Date Signed

Randy Sokol
Representing the Industrial, Commercial, or Institutional Generators of Solid Wastes within the District

4/9/24
Date Signed

Kenneth N. Wilson
Appointed by the Franklin County Board of Commissioners

4/9/24
Date Signed

SWACO
GOOD WASTE IS RESOURCES

Date Approved: April 9, 2024

Vote:
For: 5 Against: 0 Abs: 0

Susan A. Tilgner

Patrick King
Chairman, Board of Trustees

Danielle Kuskowski, Secretary

Approved as to Form: Rebecca L. Egelhoff, Director of Legal Affairs

SWACO
FROM WASTE TO RESOURCES

Appendix U: Ratification Results

Franklin			
Board of County Commissioners	Approved	Rejected	Date Resolution Adopted
	Yes		3/26/2024
Community	Population		Date Resolution Adopted
	Approved	Rejected	
Cities			
Bexley	13,862		3/26/2024
Canal Winchester	9,469		2/6/2024
Columbus	909,686		3/4/2024
Dublin	49,221		3/25/2024
Gahanna			
Grandview Heights	8,078		1/22/2024
Grove City	41,323		3/18/2024
Groveport			
Hilliard	37,094		3/11/2024
New Albany	10,863		2/6/2024
Obetz	5,632		3/24/2024
Reynoldsburg			
Upper Arlington	36,618		2/5/2024
Westerville	39,163		3/5/2024
Whitehall	20,254		2/20/2024
Worthington	14,709		3/18/2024
Townships			
Blendon Township	8,105		2/28/2024
Brown Township	2,631		1/15/2024
Clinton Township			
Franklin Township			
Hamilton Township	4,204		1/10/2024
Jackson Township	4,235		2/13/2024
Jefferson Township	13,830		2/28/2024
Madison Township	11,041		1/23/2024
Mifflin Township	2,625		4/1/2024
Norwich Township	3,820		3/20/2024
Perry Township	4,210		1/17/2024
Plain Township	1,977		2/7/2024
Pleasant Township	6,406		2/13/2024
Prairie Township	17,406		2/1/2024
Sharon Township			
Truro Township	1,414		2/1/2024
Washington Township	1,002		2/13/2024
Villages			
Brice	92		3/14/2024
Harrisburg	313		2/6/2024
Lockbourne			
Marble Cliff	630		1/16/2024
Minerva Park			
Riverlea			
Urbancrest			
Valleyview			
Total	1,279,913		
County Population	1,383,836		
Ratification percentage	92.49%		

Appendix V: Inventory of Open Dumps & Other Disposal Facilities

A. EXISTING OPEN DUMP SITES AND WASTE TIRE DUMPS

Ohio Revised Code Section 3734.53 (A)(4) require an inventory of open dumping sites for solid wastes, and scrap tires and facilities for the disposal of fly ash and bottom ash, foundry sand, and slag within the district. The following table and map would present information about the known open dumps located in Franklin County during the reference year. The City of Columbus Public Health Department and the Environmental Crimes Task Force (ECTF) reported that there are no ongoing open dumps, nor were there any during the planning year 2021. The previous plan identified 2 open dumps sites that were abated during the 2018 reference year. There are no orphaned landfills in the District.

Table V-1 Inventory of Open Dump Sites

Site Location (either address or description of site location)	Materials at Site (solid waste and/or scrap tires)
None	NA

B. ASH, FOUNDRY SAND, AND SLAG DISPOSAL SITES

There are no facilities for these materials in the District.

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

Site Location (Address, description of site location)	Materials at Site (fly ash, bottom ash, foundry sand, and/or slag)
None	NA

Illegal Dump Clean Up Programming

There are no ongoing illegal dumping issues in the District partially because SWACO has been very aggressive about clean up and enforcement. SWACO first designed the Adopt-A-Roadway, Litter Hotline, Litter Management, and Litter Marshall programming 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. This programming was enhanced by the development of the Environmental Crimes Task Force (ECTF).

The ECTF of Central Ohio is made up of representatives from the Franklin County Sheriff's Office, the Franklin County Prosecutor's Office, Franklin County Public Health, and the City of Columbus Division of Refuse, and is funded by SWACO.

The ECTF is a solid waste enforcement program. In the prosecution of persons who violate the environmental protection laws of Ohio concerning solid waste, all laws (water pollution, air pollution, record-keeping violations, theft, etc.) are utilized.

Effective Prosecution Deters Crime

One of the most important tools for deterring future criminal activity is timely prosecution and the imposition of appropriate sentences. Several illegal dumpers who were caught and prosecuted by the ECTF later implicated other polluters in order to "level the playing field." Word-of-mouth is also an effective deterrent, as persons who have been prosecuted by the ECTF warn relatives and co-workers not to dump illegally based upon their own experiences.

Finally, and most importantly, illegal dumping penalties must be significant enough that they cannot blithely be considered a cost of doing business. The Defendants charged by the ECTF with environmental crimes in 2021 were collectively sentenced to spend nearly three years in jail or in-house incarceration. These same defendants were ordered to spend 1,556 hours in service to the community removing trash from our county's roads, waterways and parks through the Franklin County Environmental Court's community service program. They were also ordered to pay $413,045 in fines and restitution. Illegal dumping doesn't make economic sense when penalties such as these are routinely levied.

Active Dumpsite Inventory

At the time of the creation of the ECTF in 1992, there were 42 active dumpsites in Franklin County. Within just a few years, those 42 dumpsites had been eliminated. Aggressive investigation and prosecution by the ECTF have forced illegal dumpers to find other, less convenient sites; when these new sites are identified by the Task Force, aggressive monitoring, investigation and prosecution usually eliminate the sites within days.

Note that 2021 activity was impacted in a significant way according to the Franklin County Prosecuting Attorney's Office on behalf of the Franklin County Sheriff's Office and the City of Columbus, Division of Refuse Collection. The pandemic not only disrupted the normal functions of the partnering organizations but significantly impacted the functioning of the court system, including the Franklin County Environmental Court.

Litter Warning Letters Sent

When members of the public report litterers to the ECTF Hotline or Website, ECTF Detectives determine the identity of the person caught littering and send the offender a warning letter explaining Ohio's solid waste laws, the fact that they were observed littering at a certain time and location on a specific date and warning them not to repeat the behavior. In 2021, 393 instances of littering were reported, and 174 litter warning letters were issued to individuals caught littering by members of the public as reported through the ECTF Hotline/Website. Those that were not issued a warning letter were typically due to an inability to accurately identify the individual.

Although work continued throughout the year investigating cases, the Franklin County Environmental Court, the Franklin County Court of Common Pleas and the United States District Court for the Southern District of Ohio continued to limit their operations in 2021. With very few exceptions—typically involving offenses of violence in which defendants were incarcerated—trials were essentially halted from March 2020 through April 2021. In-person courtroom appearances—including the holding of pre-trial hearings—were greatly reduced. Non-violent-offense presentations to the Grand Jury were severely curtailed. The filing of non-violent-offense charges was discouraged. Compounding these difficulties, investigatory and prosecution personnel were ordered to work remotely and in a more limited fashion through Spring 2021. Despite these limitations, the ECTF did achieve success:

Prosecution Cases Closed and Convictions Obtained in 2021	Quantity
Total Convictions Obtained	20
Conspiracy to Transport Hazardous Waste (federal):	2
Hazardous Waste Transportation (federal):	2
Illegal Disposal of Hazardous Waste (federal):	2
Conspiracy to Operate Chop Shop (federal):	1
Conspiracy to Violate Clean Air Act (federal):	1
Illegal Tire Transportation:	3
Open Dumping:	1
Littering:	3
Water Pollution:	2

Prosecution Cases Closed and Convictions Obtained in 2021	Quantity
Open Burning	1
Arson	1
Animal Cruelty	1

Sentencing Data for 2021	Quantity
Defendants prosecuted in 2021:	11
Environmental Convictions Obtained in 2021	20
Jail Time Imposed by Judges:	4 years, 4 months, 5 days
House Arrest Imposed by Judges (Covid-19 sanction):	18 months
Jail Time Suspended:	54 months
Total Length of Probation Time Ordered	22 years
Total Fines & Court Costs Ordered:	$76,005
Restitution to Victims and Other Environmental Funds:	$335,809.14

Community Service

Over the course of 2021, the polluters investigated and prosecuted by the Environmental Crimes Task Force of Central Ohio (ECTF) were ordered to spend a total of 1,556 hours in service to the community removing trash from Franklin County roadways, waterways, and parklands.

Outreach, Training Activities & Deterrence

Members of the ECTF engage in educational contacts with the public daily. Task Force members provide citizens with information on yard waste removal, recycling programs, hazardous materials disposal, and proper bulk trash disposal methods, as well as the laws governing the disposal of waste. For every person prosecuted for illegal dumping, many others are warned that their conduct may constitute a crime and are educated as to proper disposal methods.

Deterrence

Cameras conspicuously placed in high crime areas, including active dumpsites, are an effective deterrent to future criminal behavior. Conversely, hidden cameras are an excellent tool for identifying and prosecuting repeat offenders who have avoided detection. The ECTF utilizes cameras in both capacities.

An example of recent ECTF activity was posted to Facebook in April 2022 showing a man in a red truck appearing to throw multiple tires from the truck's bed onto the ground then driving away. Investigations like this are common and city and county officials are putting more resources into combating and prosecuting illegal dumping cases. The City of Columbus purchased more equipment and added more manpower to clean up the dumping. The City also added more Solid Waste Investigators and changed the city code to give those investigators more authority. Columbus also launched two dashboards to show areas where there has been illegal dumping and who has been prosecuted for dumping. Much of the illegal dumping is construction and demolition debris. This photo of an illegal dump site is off Eakin Road in southwest Columbus.

The defendant appeared in court December 2022 and pled guilty to ORC 3767.32 was sentenced to 60 days in jail, suspended for one year of probation, $300 restitution to SWACO, 8 hours of community service removing litter from Franklin County roadways (supervised by the Environmental Court Clean-up Program) and $258 in fines and court costs.

Investigations Conducted by the ECTF

As mentioned, statistics shown below are from 2020 which is a more accurate representation of typical enforcement activity. The planning year 2021 was impacted by the pandemic and enforcement action although extensive was partially curtailed.

Agency	Q1 2020	Q2 2020	Q3 2020	Q4 2020	TOTAL
FCSO	106	134	158	82	480
REFU	74	100	145	81	400
Total	180	234	303	163	880

Submissions	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Totals
Unassigned	**0**	**1**	**0**	**0**	**1**
Hotline	**117**	**122**	**164**	**81**	**484**
itsacrime.org	**63**	**110**	**139**	**82**	**394**
Other	**0**	**1**	**0**	**0**	**1**
Total	**180**	**234**	**303**	**163**	**880**

Month	2019	2020
Jan	47	62
Feb	63	48
Mar	90	70
Apr	103	75
May	118	72

Month	2019	2020
Jun	118	87
Jul	127	109
Aug	148	105
Sep	147	89
Oct	99	54
Nov	68	62
Dec	70	47
Totals	**1196**	**880**

	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Total
Litter Letters Sent	**51**	**44**	**47**	**32**	**174**

Referral Method	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Totals
Unassigned	**1**	**0**	**0**	**0**	**1**
Columbus 311	**30**	**19**	**34**	**22**	**105**
Friend	**12**	**6**	**10**	**7**	**36**
Gov't Referral	7	14	12	6	**39**
Internet Search	40	72	72	49	**233**
Local Event	1	0	0	0	**1**
Media	7	9	6	4	**26**
Other	37	52	72	36	**197**
Police Agency	19	20	31	11	**81**
Road Sign	10	22	27	17	**76**
Website	16	20	39	11	**86**
Total	**180**	**234**	**303**	**163**	**880**

Community Identified	Unassigned	Hotline	itsacrime.org	Other	Totals
Unassigned	0	7	4	1	12
BEXLEY	0	0	1	0	1
BLENDON TWP	0	0	0	0	0
BROWN TOWNSHIP	0	1	0	0	1
CANAL WINCHESTER	0	1	2	0	3
CLINTON TWP	0	1	1	0	2
COLUMBUS	1	365	251	0	617
DUBLIN	0	4	1	0	5

Community Identified	Unassigned	Hotline	itsacrime.org	Other	Totals
FRANKLIN TWP	0	9	7	0	16
GAHANNA	0	2	8	0	10
GRANDVIEW HEIGHTS	0	0	0	0	0
GROVE CITY	0	5	7	0	12
GROVEPORT	0	3	1	0	4
HAMILTON TWP	0	2	1	0	3
HILLIARD	0	5	1	0	6
JACKSON TWP	0	2	2	0	4
JEFFERSON TWP	0	2	0	0	2
MADISON TWP	0	3	1	0	4
MIFFLIN TWP	0	1	3	0	4
NEW ALBANY	0	0	2	0	2
NORWICH TWP	0	2	0	0	2
OBETZ	0	0	0	0	0
OUT OF COUNTY	0	55	70	0	125
PERRY TWP	0	0	0	0	0
PLEASANT TWP	0	1	3	0	4
PRAIRIE TWP	0	2	8	0	10
REYNOLDSBURG	0	3	5	0	8
SHARON TWP	0	1	0	0	1
TRURO TWP	0	0	0	0	0
UPPER ARLINGTON	0	1	3	0	4
VALLEYVIEW	0	0	0	0	0
WASHINGTON TWP	0	0	1	0	1
WESTERVILLE	0	3	5	0	8
WHITEHALL	0	2	2	0	4
WORTHINGTON	0	1	4	0	5
TOTALS	**1**	**484**	**394**	**1**	**880**

Source: ECTF 2021 Annual Report

Investigation Results: Other Agencies

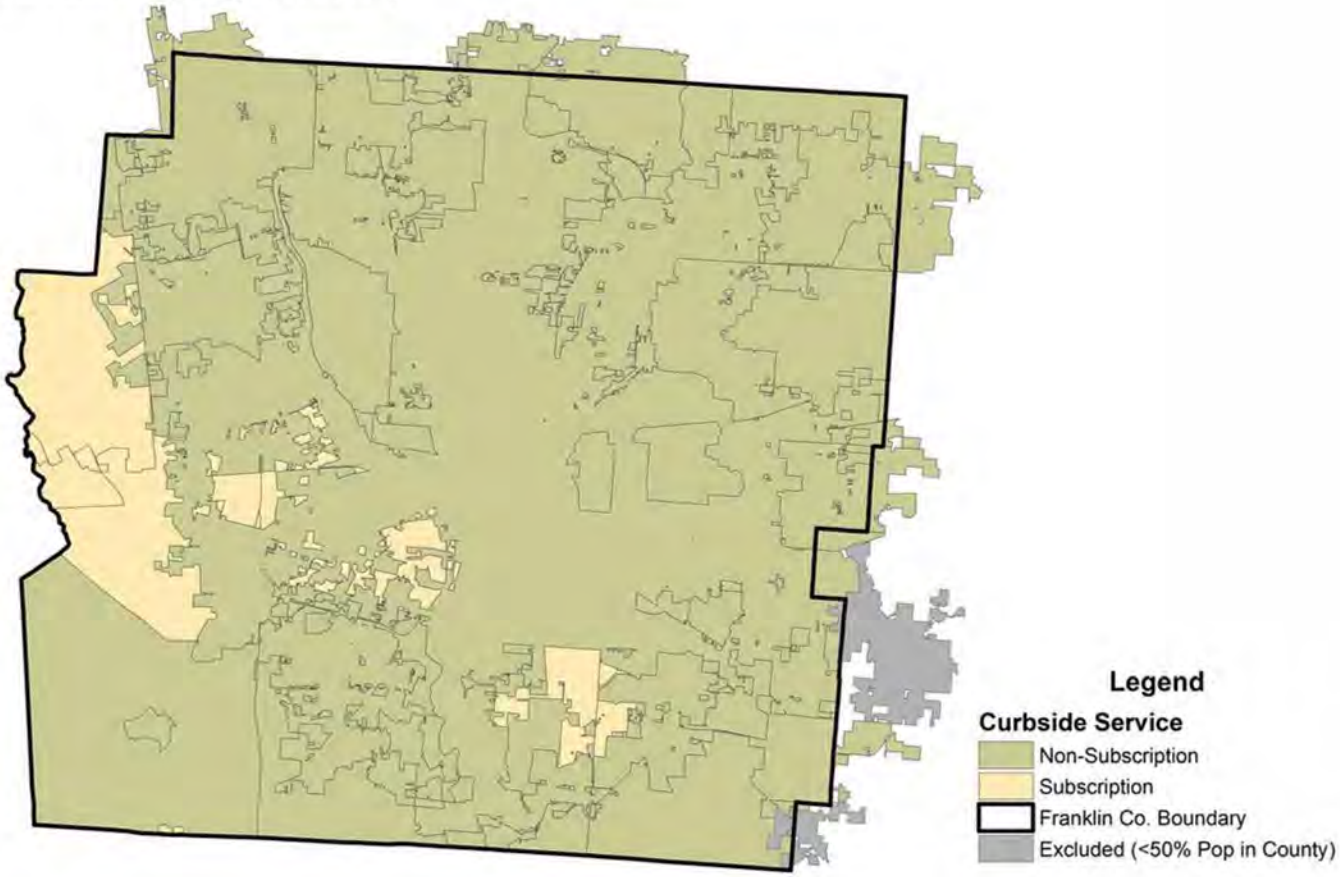
Many of the cases filed by the ECTF are investigated with the assistance of agencies in addition to those comprising the Task Force; in 2021, those agencies included the following:

- Columbus Division of Police
- Columbus Division of Fire
- Franklin County Sheriff's Office (deputies in addition to those assigned to the ECTF)
- Ohio Attorney General's Office, Bureau of Criminal Investigation
- Ohio Environmental Protection Agency
- United States Environmental Protection Agency

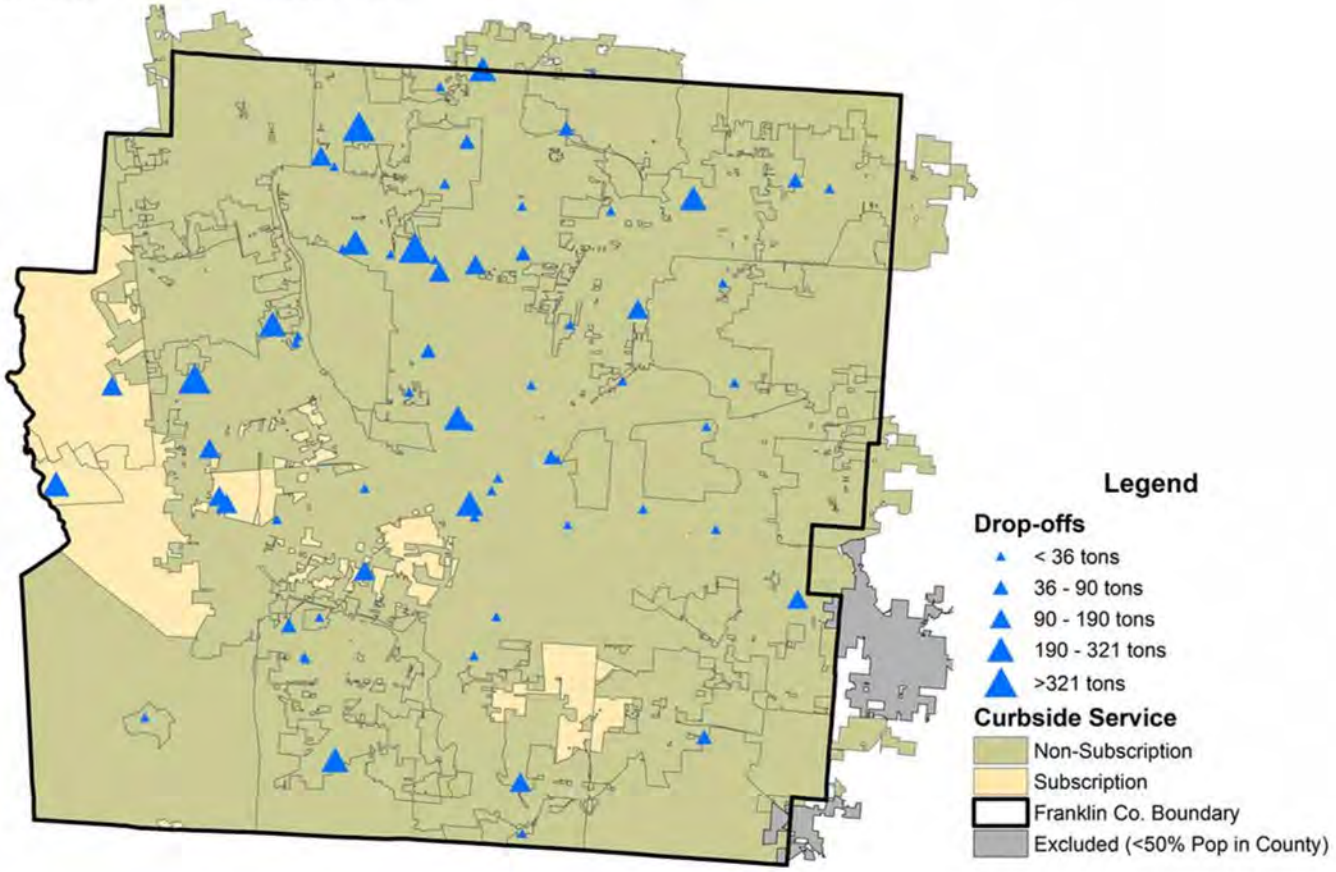
Appendix W: District Map

A. SOLID WASTE MANAGEMENT AND RECYCLING INVENTORIES RESPONSE

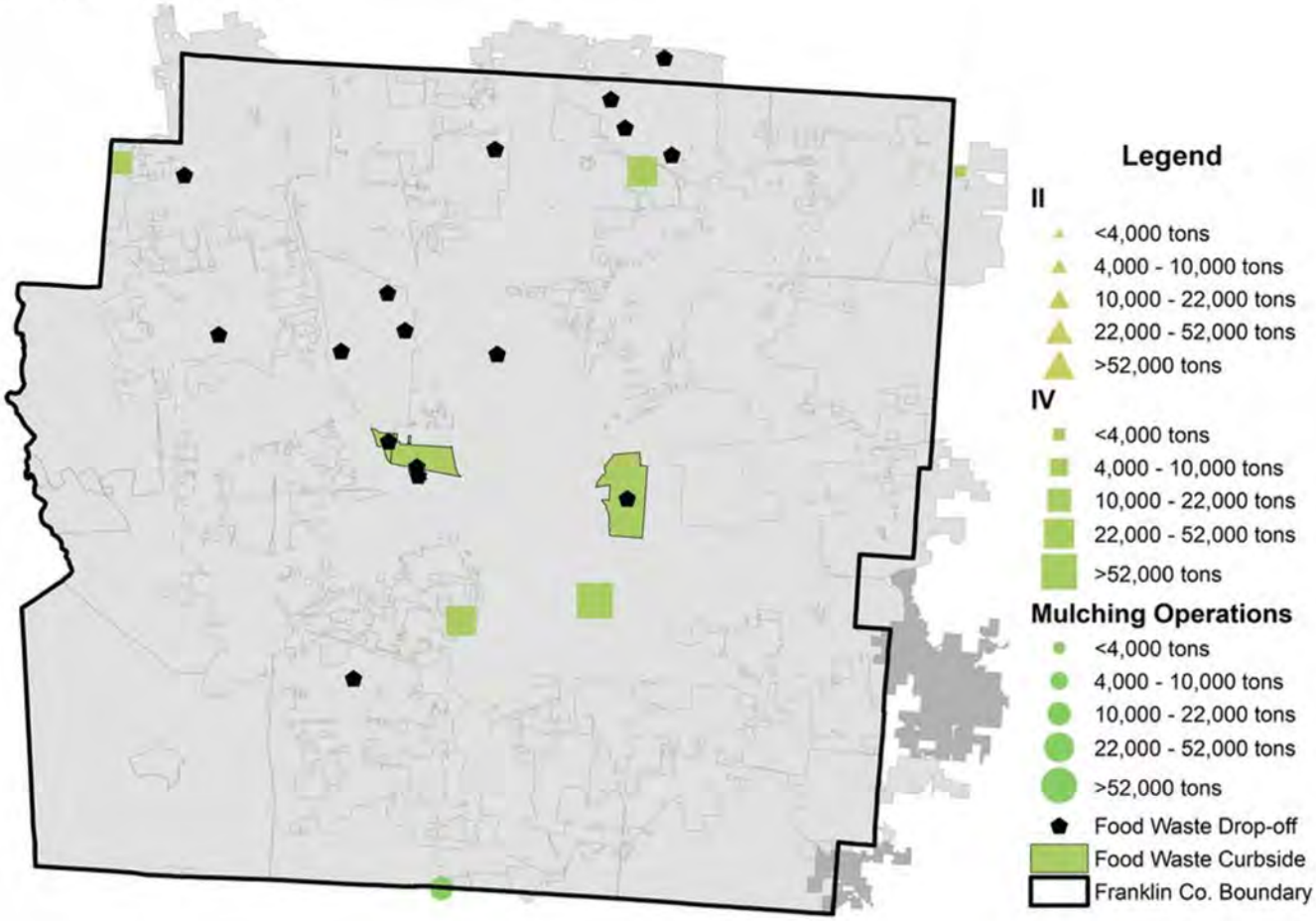
Curbside Recycling Access Map



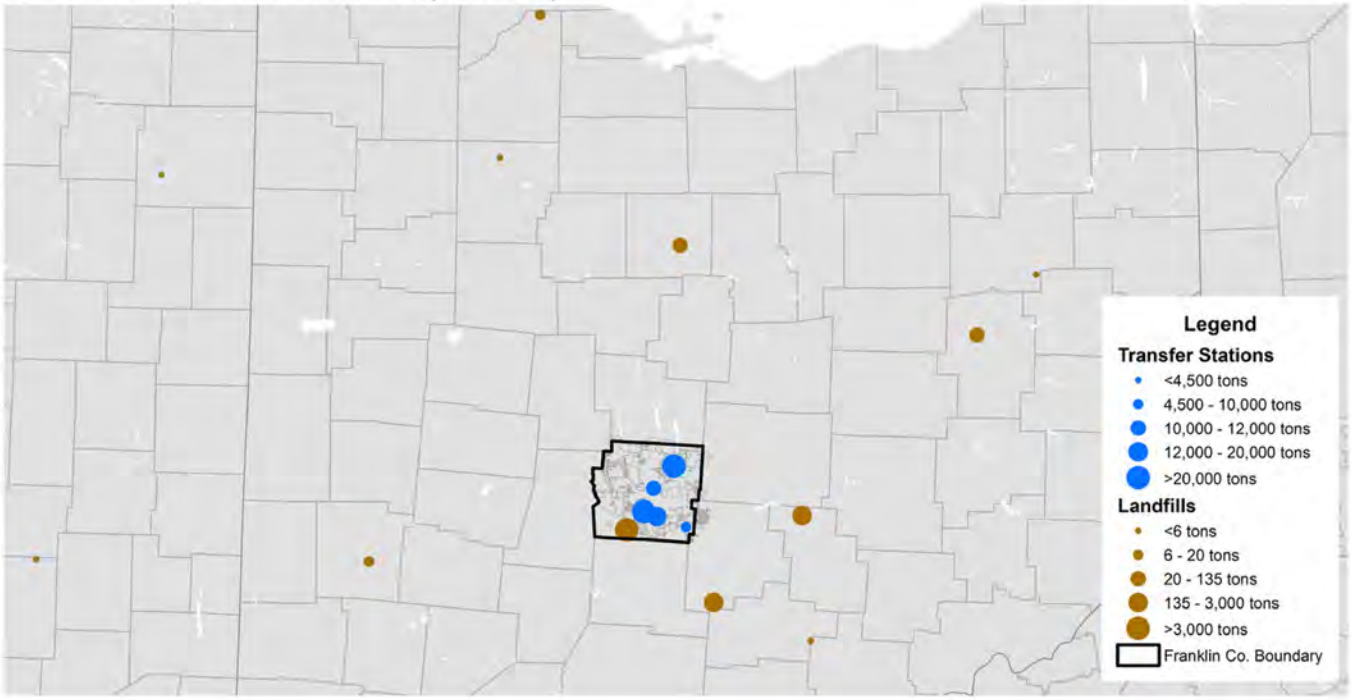
Drop-off Recycling Access Map



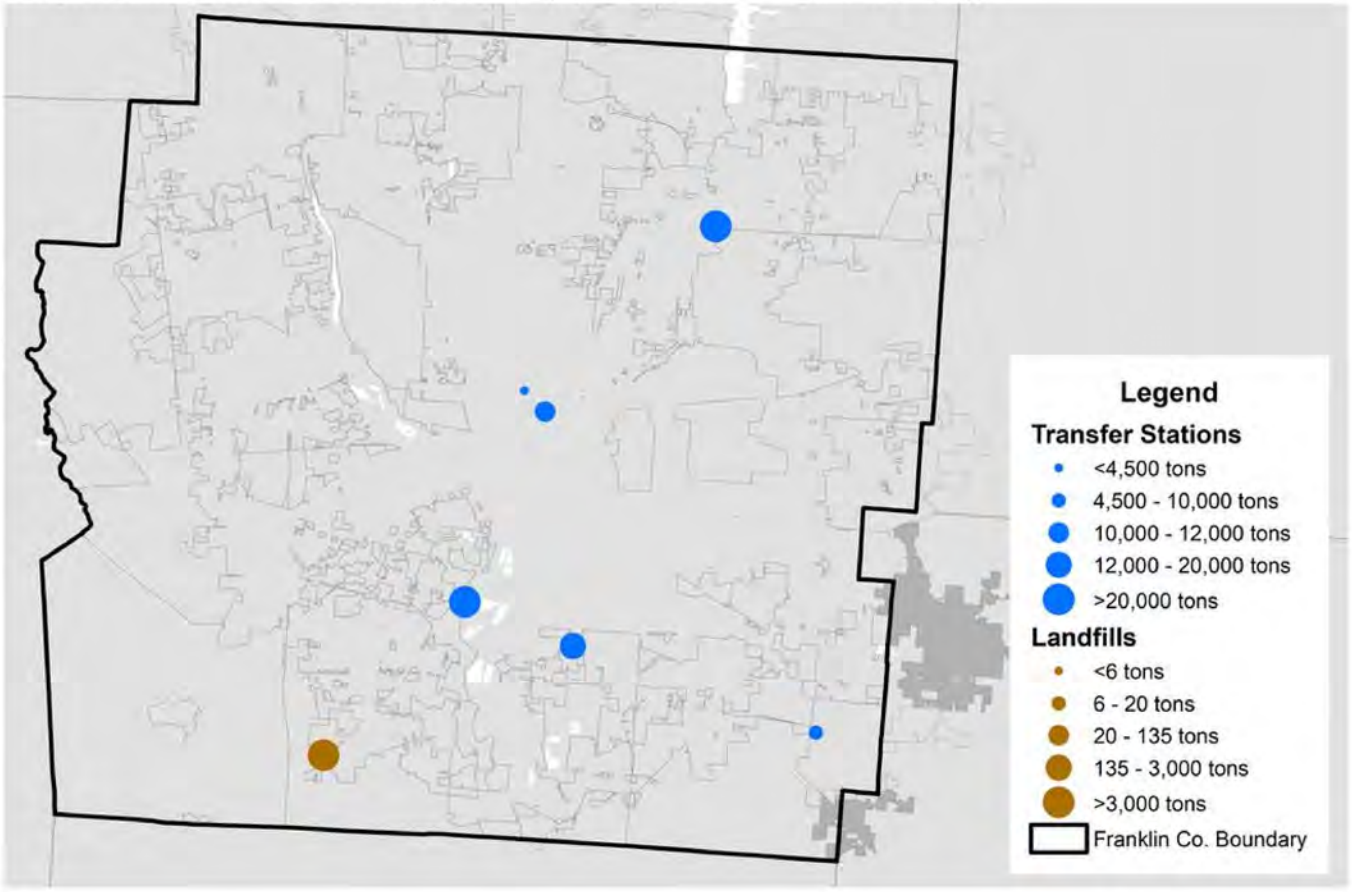
Compost Facilities Map



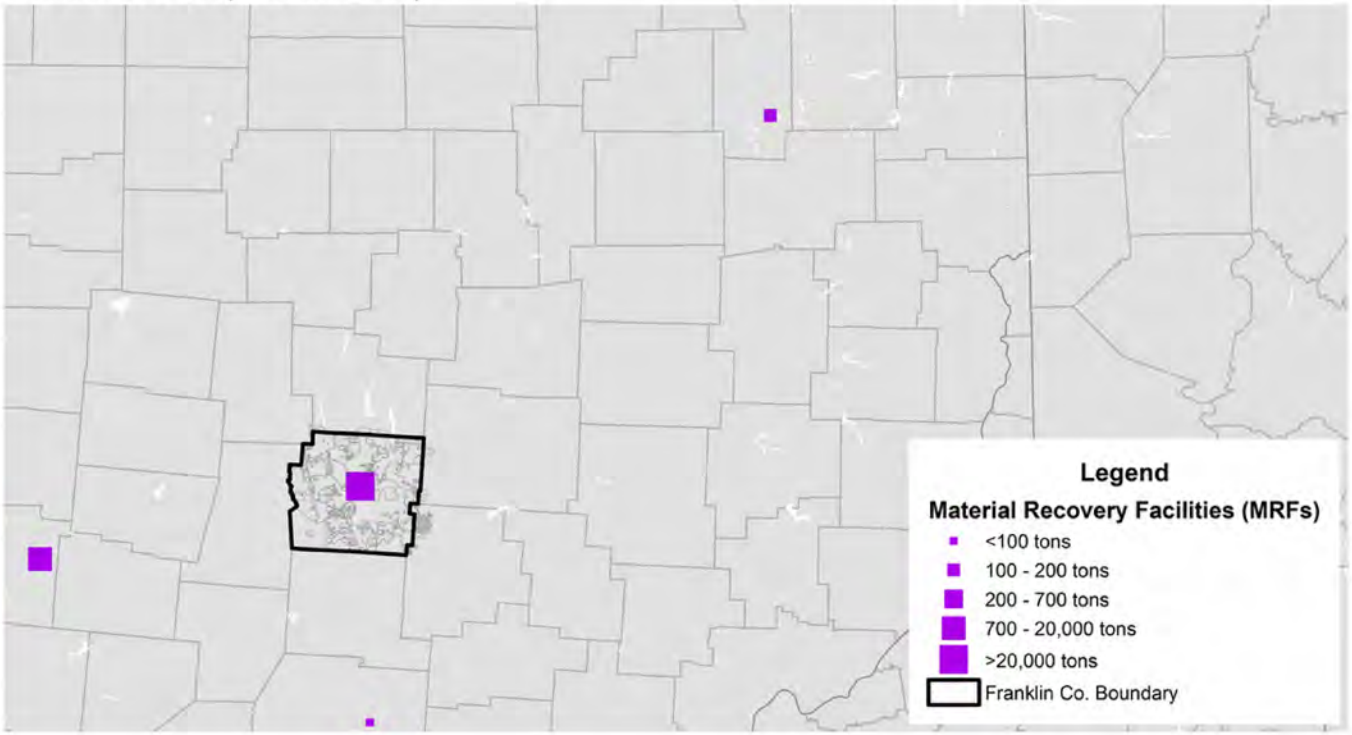
Landfill and Transfer Station Disposal Map



Landfill and Transfer Station Disposal Map (Zoomed in on Franklin County)



Material Recovery Facilities Map



SOLID WASTE
APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
July 11, 2024
AS EVIDENCED BY COPY OF
LETTER OF APPROVAL
ATTACHED HERETO