2022 SOLID WASTE MANAGEMENT PLAN

Clinton County Solid Waste Management District

PREPARED BY:

RRS recycle.com

commissioned BY:

Clinton County Solid Waste Management District

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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 3734-27-01(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 3734-27-01(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 3734-27-01(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.

Waste Minimization – Any effort to reduce or recycle the quantity of hazardous waste generated, and where feasible, to reduce or eliminate toxicity. Treatment of hazardous waste is not waste minimization, unless such treatment is part of a recycling process. (Please note that the definition of this term as used in this document does not include solid wastes.)

Waste Reduction – Refers to activities that decrease the quantities of waste disposed in landfills and includes recycling, volume reduction due to composting waste and volume reduction due to incinerating waste.

Waste Stream – The amount of materials that are destined for disposal. The waste stream may refer to specific, homogenous material or numerous materials mixed together.

White Goods – Discarded large appliances (such as refrigerators, ovens, dish washers, washing machines, clothes driers, hot water heaters, etc.).

Acronyms Used in this Document

2009 State Plan is used when referring to the *2009 State Solid Waste Management Plan* that was adopted in 2010.

2020 State Plan is used when referring to the *2020 State Solid Waste Management Plan*, adopted November 2, 2020.

ADR – Annual district report

Authority –Regional Solid Waste Management Authority

CCSWMD – Clinton County Solid Waste Management District

C&DD - Construction and demolition debris

DO – Drop-off

FGD – Flue gas desulfurization waste

FTR – Full-time, rural drop-off

FTU – Full-time, urban drop-off

Format is used when referring to this document, the *District Solid Waste Management Plan Format*, version 4.0

HHW – Household hazardous waste

HB – House Bill

MRF – Material Recovery Facility

MSW – Municipal Solid Waste

NAICS - North American Industry Classification System

NSC – Non-subscription curbside recycling

PAYT – Pay as you throw trash collection

PPD – Pounds per person per day

OAC – Ohio Administrative Code

Ohio EPA – Ohio Environmental Protection Agency

ORC – Ohio Revised Code

PA – Publicly available

PPD – Pounds per person per day

PTR – Part-time, rural drop-off

PTU – Part-time, urban drop-off

SIC – Standard Industrial Classification

SC – Subscription curbside recycling

State Plan is used when referring to the state solid waste management plan in general.

SWMD - Solid Waste Management District

TPD –Tons Per Day.

TPY –Tons Per Year

SECTION i SOLID WASTE MANAGEMENT DISTRICT INFORMATION

Table i-1 Solid Waste Management District Information

SWMD Name	Clinton County Solid Waste Management District
Member Counties	Clinton County
Coordinator's Name (main contact)	Jeffrey D. Walls
Job Title	Coordinator
Street Address	180 East Sugartree Street
City, State, Zip Code	Wilmington, Ohio 45177
Phone	937-382-6177
Fax	937-382-5678
E-mail address	walls.jeff@clintoncountyohio.us
Webpage	co.clinton.oh.us/recycling/

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

Member Name	Representing
Clinton	
Brenda Woods	County Commissioners
Brian Shidaker	Municipal Corporations
Andy Borton (alternate Chris Horsley)	Townships
Pam Walker Bauer (alternate Matt Johannes)	Health District
Brian Laycock	Generators
Charlie Weaver	Citizens
Jo Ellen Vance	Public

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

Name	Brian Shidaker
Street Address	69 North South Street
City, State, Zip Code	Wilmington, Ohio 45177
Phone	937-382-6509
Fax	
E-mail address	bshidaker@wilmingtonoh.org

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

Commissioner Name	County	Chairperson/President
Kerry R. Steed	Clinton	
Brenda K. Woods	Clinton	
Mike McCarty	Clinton	President

Table i-5 Technical Advisory Committee

Name
N/A

Technical Advisory Committee was not utilized for this Plan Update and has not been appointed.

Consulting Information:
The SWMD used Resource Recycling Systems, Inc. (RRS) to prepare the solid waste management plan.

Resource Recycling Systems
416 Longshore Drive
Ann Arbor, Michigan 48105
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1-734-996-1361

Principal Consultant: Jamie Zawila and Kate Maguire

CHAPTER 1 INTRODUCTION

(Ohio EPA authored A and B of this Section)

A. Brief Introduction to Solid Waste Planning in Ohio

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

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

B. Requirements of County and Joint Solid Waste Management Districts

1. STRUCTURE

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

A SWMD is governed by two bodies. The first is the board of directors, which consists of the county commissioners from all counties in the SWMD. The second is a policy committee. The policy committee is responsible for developing a solid waste management plan for the SWMD. The board of directors is responsible for implementing the policy committee's solid waste management plan.[2]

2. SOLID WASTE MANAGEMENT PLAN

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

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

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

Solid waste management plans must contain the information and data prescribed in Ohio Revised Code (ORC) 3734.53, Ohio Administrative Code (OAC) Rule 3745-27-90. Ohio EPA prescribes the format that details the information that is provided and the manner in which that information is presented. This format is very similar in concept to a permit application for a solid waste landfill.

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

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

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

C. District Overview

The SWMD was originally a member of the Clinton-Warren Joint Solid Waste Management District. In 1993, the joint solid waste management district split into two single county solid waste management districts and the Clinton County Solid Waste Management District was formed. Located in southwest Ohio, the SWMD operates out of Wilmington, Ohio. Since 1993, solid waste management plans were prepared, ratified, and implemented to ensure residents had adequate solid waste disposal capacity and meet the state plan goals.

The SWMD's role is to administer the programs in the solid waste management plan. These programs reduce the reliance on landfills through diversion. Equally important is the assurance of landfill capacity for the waste generated that is not diverted. The landscape of landfills has not changed; there is competition in the region with public sector and private sector landfills. This competition also is a factor for low landfill tip fees, which add to the economic challenge of recycling that is somewhat difficult to overcome.

The Clinton County SWMD's waste management strategy is integrated with a mix of several waste management approaches for managing the waste stream: source reduction, recycling, composting, and landfilling. Processing of recyclables relies on regional facilities. There is little to no competition in the region for recyclable processing. One private sector business, Rumpke, has invested considerably in recycling infrastructure within reasonable transport distance to process recyclables.

Collection services of trash and recyclables are self-haul, private, or public sector provided. There is one public sector collection program (trash and recycling) active and services approximately 30% of households in the County.

Over the planning years, the SWMD increased recycling infrastructure by developing a drop-off recycling program and developing programs to support and encourage the infrastructure. The focus of the SWMD Plan has not only developed infrastructure opportunities, but has also created a culture for the residents and businesses to actively reduce, reuse and recycle. These strategies combined saw growth of 14.8% residential/commercial diversion rate in 2006 to a high of 35% in 2012. Both the residential and commercial sectors' measured growth is a success. In recent years, the diversion rate has declined to roughly 29%.

Monitoring programs and commodity streams diverted show the decline is a result of lack of recycling reporting from businesses. The culture in the County demonstrates a commitment to recycling; it's simply a matter of capturing the data. This 2022 Plan Update looks at these and other potential challenges and gaps to set in place a plan to cultivate commercial sector reporting and additional programs for reaching higher diversion rates over this next planning period.

D. Waste Reduction and Recycling Goals

As explained earlier, a SWMD must achieve goals established in the state solid waste management plan. The current state solid waste management plan is the *2020 Solid Waste Management Plan* (2020 State Plan), adopted November 2, 2019. The 2020 State Plan established ten goals as follows:

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.

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

3. The SWMD shall provide the following required elements: a website; a comprehensive resource guide; an inventory of available infrastructure; and a speaker or presenter.

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.

5. The SWMD shall incorporate a strategic initiative for the industrial sector into its solid waste management plan.

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.

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

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.

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

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

SWMDs are not required to demonstrate it will achieve both Goal 1 and Goal 2. Instead, SWMDs have the option of meeting either Goal 1 or Goal 2 for their solid waste management plans. This affords SWMDs with two methods of demonstrating compliance with the State's solid waste reduction and recycling goals. Many of the programs and services that a SWMD uses to achieve Goal 1 help the SWMD make progress toward achieving Goal 2 and vice versa.

A SWMD's solid waste management plan will provide programs to meet up to eight of the goals. Goal 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 Authority will use to achieve the nine goals.

CHAPTER 2 DISTRICT PROFILE

Purpose of Chapter 2 (Content in this box is authored by Ohio EPA)
This chapter provides context for the SWMD's solid waste management plan by providing an overview of general characteristics of the SWMD. Characteristics discussed in this chapter include:

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

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

Population distribution, density, and change affect the types of recycling opportunities that make sense for a particular community and for the SWMD as a whole.
The make-up of the commercial and industrial sectors within the SWMD influences the types of wastes generated and the types of programs the SWMD provides to assist those sectors with their recycling and waste reduction efforts.

Unique circumstances, such as hosting an amusement park, a large university, or a coal burning power plant present challenges, particularly for providing waste reduction and recycling programs.
The policy committee must take into account all of these characteristics when developing its overall waste management strategy.

A. Profile of Political Jurisdictions

1. COUNTIES IN THE SOLID WASTE MANAGEMENT DISTRICT

Clinton County is a single-county solid waste management district composed of Clinton County and the local units of governments within the County borders, except for the Village of Lynchburg, which is included in the Ross Pickaway Highland Fayette solid waste management district.

The District was originally a member of the Clinton-Warren Joint Solid Waste Management District. In 1993, the joint solid waste management district split into two single-county solid waste management districts. The Clinton County Solid Waste Management District obtained approval of its first solid waste management plan in 1993. There have been no changes in the configuration of the District since the District's original solid waste management plan was approved.

2. COUNTY OVERVIEW

Clinton County is located in southwest Ohio and is positioned roughly a one-hour drive from Cincinnati, Dayton, and Columbus metro areas. The county seat is the City of Wilmington, which is the largest population center and only city in the county. Wilmington is centrally located. There are seven villages and thirteen townships within the county. Population density is 103 people per square mile.

Clinton County is flat, with nearly 70 percent of land in the County used for cultivated crops. Only approximately 8 percent is developed land. Cowan Lake State Park is located in the south-central part of the county, and Caesar Creek State Park is located in the north-western part. Clinton County is heavily rural. According to the US Census, the poverty rate in Clinton County, Ohio has fallen from 16.9% in 2014 to 13% in 2018, so that the County in 2018 had a lower poverty rate than the Ohio state average of 13.9%.

B. Population

1. REFERENCE YEAR POPULATION

In 2018, Clinton County was the 58th most populous county in Ohio out of 88 total counties[3]. Ohio law requires that the entire population of a municipality located in more than one solid waste management district be added to the solid waste management district containing the largest portion of the jurisdiction's population. As mentioned above, the Village of Lynchburg straddles between Clinton County and Highland County, with the majority of the population residing in Highland County. The population of Lynchburg residents residing in Clinton County is subtracted from the County population. Blanchester Village is located in Clinton and Warren Counties; however, all of the population of Blanchester resides in Clinton County so that no population adjustment was needed for Blanchester Village.

Table 2-1 Population of District in the Reference Year

	Clinton
Before Adjustment	42,057
Additions	
None	0
Subtractions	
Lynchburg Village	2
After Adjustment	42,057
Total Adjusted Population	42,057

2. POPULATION DISTRIBUTION

Table 2-2 shows the largest community in each county and the size of the community relative to the total population of the county. The largest community in Clinton County is the City of Wilmington, accounting for 29 percent of the SWMD's population.

[3] Ohio Development Services Agency 2019 Ohio County Population Estimate, https://development.ohio.gov/files/research/P5007.pdf

Table 2-2 Population Distribution in the Reference Year

County		Largest Political Jurisdiction		
Name	Population	Community Name	Population	Percent of Total County Population
Clinton	42,057	City of Wilmington	12,401	29%

Table 2-3 shows distribution of the population in cities, villages, and townships, and the distribution of the population in incorporated versus unincorporated areas. Nearly half of all Clinton County residents reside in unincorporated townships, 29 percent reside in cities, and 23 percent reside in villages.

Table 2-3 Population Distribution

County	Percent of Population in Cities	Percent of Population in Villages	Percent of Population in Unincorporated Township
Clinton	29%	23%	48%

3. POPULATION CHANGE

According to the Ohio Development Services Agency (ODSA), Office of Statistical Research, Clinton County's population grew from 1950 to 2010 then declined by 0.17 percent from 2010 to 2017. While the District's population declined, Ohio's population grew 1.3% from the same time period.

UB: Unincorporated balance.

Total Population

Census

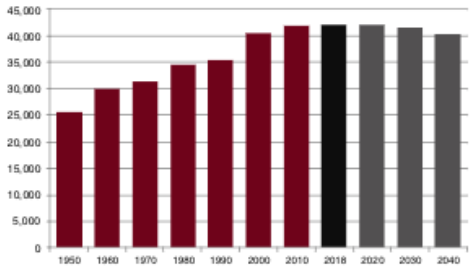
1800		1910	23,680
1810	2,674	1920	23,036
1820	8,085	1930	21,547
1830	11,436	1940	22,574
1840	15,719	1950	25,572
1850	18,838	1960	30,004
1860	21,461	1970	31,464
1870	21,914	1980	34,603
1880	24,756	1990	35,415
1890	24,240	2000	40,543
1900	24,202	2010	42,040

Estimated

2013	41,847
2014	41,787
2015	41,817
2016	41,853
2017	41,966
2018	42,057

Projected

2020	42,100
2030	41,590
2040	40,380



Source: Ohio Development Services Agency, "Ohio County Profiles Clinton County", 2018.

While population had been declining, the County saw growth in population in 2018. Clinton County's population is forecasted to increase by 0.04 percent through the planning period. Projections of population through the planning period are based on the latest population projections from the ODSA Office of Statistical Research. The ODSA Planning Research and Strategic Planning Office provided year 2014 census data and projected estimates for 2020, 2025, 2030 and 2035. To determine population estimates between these years, straight-line interpolation was used.

4. IMPLICATIONS FOR SOLID WASTE MANAGEMENT

The profile of the SWMD can provide key insights into solid waste management planning. Factors such as population density, housing characteristics, and poverty rates apply when assessing which

programs and program structure are needed to meet residential needs for solid waste management.

Clinton County is a rural SWMD with a population density of 103 people per square mile. In the City of Wilmington, the community with the highest population and population density, curbside recycling is a valuable service for residents. Providing curbside recycling to the rural low-density areas of the County can be challenging and cost prohibitive. Villages offer more density and continue to explore curbside services. The District's grant program is structured to offer an incentive for curbside start-ups. In the lesser dense rural areas, drop-off recycling provides access to recycling.

There are over 18,000 housing units in Clinton County. The majority of housing structures are single family homes (over 79 percent).[4] Of the total housing units, approximately one-third are renter occupied (Figure 2-1). Renters tend to be more mobile than homeowners, and as such, it can be difficult to engage with renters around recycling programs. Due to the mobility of this demographic, frequent education and outreach is needed to encourage recycling participation.

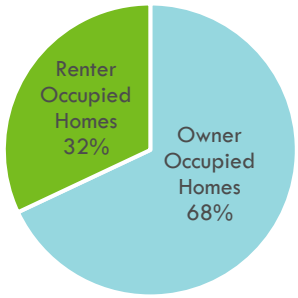


Figure 2-1: Percent of Owner & Renter Occupied Homes

According to the US Census, the poverty rate in Clinton County was 13% in 2018- or roughly 5,500 people within the county live in poverty. While this is lower than Ohio state average of 13.9%, it is impactful in finding economic solutions for sustainable waste management.

C. Profile of Commercial and Institutional Sector

By employment trade, the top commercial and institutional sector employers are as follows: transportation and utilities; local government; and education and health services. The top employment is shown in Figure 2-2 and Table 2-4. Since 2012, employment in the commercial and institutional sectors in Clinton County increased by 16 percent. The increase was not uniform across sectors. Certain sectors saw an increase in employment such as trade, transportation, and utilities, information, and professional business services, while others such as financial services and education and health services declined.

[4] Census Reporter. American Community Survey 2018 5-year. https://censusreporter.org/profiles/05000US39027-clinton-county-oh/

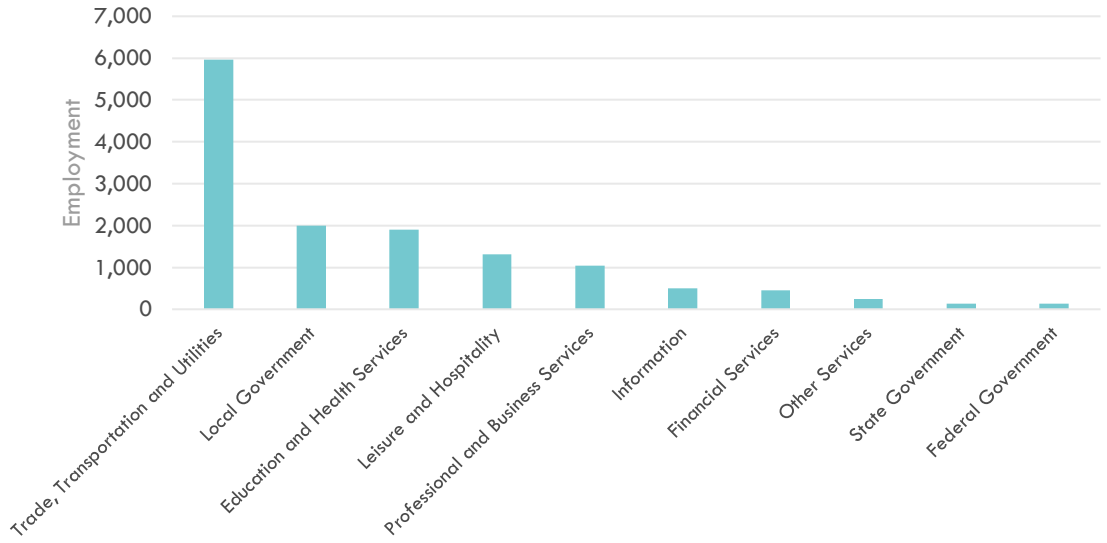


Figure 2-2 Employment Per Sectors (2018)

Table 2-4 Top District Employers by Employment in Commercial and Institutional Sectors

Business	Type of Business
ATSG/ABX Air	Professional and Business Services
Clinton Memorial Hospital	Education and Health Services
R & L Carriers	Transportation
Wilmington City Schools	Education and Health Services
Wilmington College	Education and Health Services
D&E Equipment	Services

County data source: Ohio County Profiles for Clinton County 2018.

D. Profile of Industrial Sector

In 2018, Clinton County had 126 goods-producing establishments (industrial sector), which include natural resource mining, construction, and manufacturing. While only roughly a third of the industrial sector establishments are manufacturing, it accounts for more than 90 percent of all industrial sector employment in Clinton County. The top manufacturing employers in the County are listed in Table 2-5. Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The State of Ohio is a leader in manufacturing jobs, with 14,000 establishments.

Since 2012, employment in the three industrial sectors mentioned above – natural resource mining, construction, and manufacturing – has grown by 109, 24, and 8 percent, respectively.

Table 2-5 Top District Employers by Employment in Manufacturing Sectors

Business	Type of Business
Ahresty Wilmington Corp	Manufacturing
Alkermes Inc	Manufacturing
Ferno-Washington Inc	Manufacturing
Nippon Seiki/New Sabina Industries	Manufacturing
Showa Corp/American Showa	Manufacturing
TimberTech	Manufacturing
Pennant Moldings Inc	Manufacturing

County data source: Ohio County Profiles for Clinton County 2018.

The industrial sector in Clinton County accounts for 47 percent of the total waste generated. Industries are financially responsible for implementing their own recycling programs and contracting for trash and recycling services. In Clinton County, the industrial sector diverts 97 percent of the waste generated, so that industrial waste has a much smaller impact on disposal compared to the residential/commercial sectors and exempt waste.

CHAPTER 3 WASTE GENERATION

Purpose of Chapter 3 (The language in this box is authored by Ohio EPA)
This chapter of the solid waste management plan provides a summary of the SWMD's historical and projected solid waste generation. The policy committee needs to understand the waste the SWMD will generate before it can make decisions regarding how to manage the waste. Thus, the policy committee analyzed the amounts and types of waste that were generated within the SWMD in the past and that could be generated in the future.

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

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

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

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

A. Solid Waste Generated in Reference Year

Waste generation refers to the volume of materials that enter the waste stream before recycling, composting, landfilling or other waste management. To estimate waste generation, Clinton County SWMD collected data from several sources including:

- Ohio EPA Facility Data (some facilities are required to submit annual reports to Ohio EPA)
- Surveys of commercial and industrial businesses, recyclers, buybacks, brokers, and scrap dealers (these surveys are voluntary and rely on the willingness of any company to provide the data)
- Ohio EPA MRF reports (Ohio EPA collects data from commercial 'big box stores' and material recovery facilities)

Waste Generation = Wastes Disposed + Wastes Diverted

In 2018, Clinton County generated 92,624 tons of material, as shown in Figure 3-1.

Table 3-1 Solid Waste Generated in the Reference Year

Type of Waste	Quantity Generated (tons)
Residential/ Commercial	39,930
Industrial	43,388
Excluded	9,307
Total	92,624

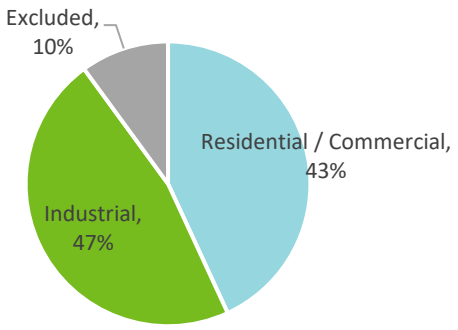


Figure 3-1 Waste Generation

1. Residential/Commercial Waste Generated in the Reference Year

Clinton County generated 39,930 tons of waste in the residential/commercial sector. This estimated generation indicates each person generates approximately 5.2 pounds per day. Benchmarking Clinton County's per capita generation shows the County's average is on par with Ohio's statewide average and other District's, as shown in Table 3-2. The challenge facing the SWMD is to find ways to reduce waste generation as well as characterizing landfilled waste to identify diversion methods to lower the disposal rate.

Table 3-2 Benchmark Per Capita Residential/Commercial Solid Waste

County Name	Per Capita
Preble	3.92
Clinton	5.17
Greene	4.6
FHPR	5.11
Warren	5.4
Adams-Clermont	6.3
Hamilton	9.55
Ohio Statewide	6.85

2. Industrial Waste Generated in the Reference Year

The industrial sector generated 43,388 tons of waste, accounting for approximately 47% of total waste generated in the County. Clinton County's industrial sector is dominated by manufacturing and includes auto parts, pharmaceutical, and medical supplies manufacturing companies.

3. Excluded Waste Generated in the Reference Year

Excluded waste is waste material exempt from the definition of solid waste in ORC 3734.01. All exempt waste is also fee exempt. Ohio EPA Format 4.0 adds a threshold for exempt waste which excludes exempt waste from calculations if it is less than 10% of total waste generated. Exempt waste for Clinton County accounts for 10% of the waste generated and is considered in the analysis of this plan.

B. Historical Waste Generated

1. Historical Residential/Commercial Waste Generated

Residential/Commercial waste generation has fluctuated over the past five years, as shown in Figure 3-2. Generation was greatest in 2014, dipped in 2016, and rebounded to higher levels in 2017 and 2018. Disposal for residential/commercial sector appeared to follow the US economy which tracked a slow pace in 2015 and 2016. Recycling, the other part of the equation, is collected through voluntary data reporting and by nature succumbs to data fluctuations. During this time, population was flat so that generation is not tracking any change in population.

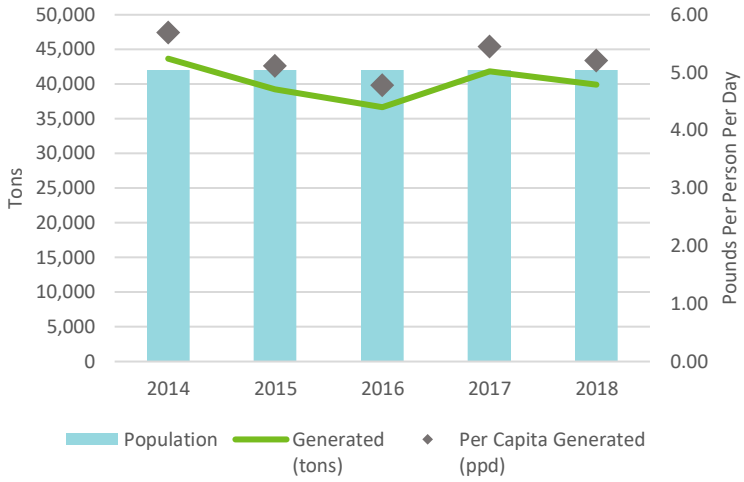


Figure 3-2 Historical Residential/Commercial Waste Generation

2. Historical Industrial Waste Generated

Industrial generation dropped sharply from 2016 to 2017. The sharp drop is attributed to one facility that reported a 90% reduction of the amount of material as recycled. While not entirely certain, the higher reporting levels prior to 2017 may have been reported to the District in error.

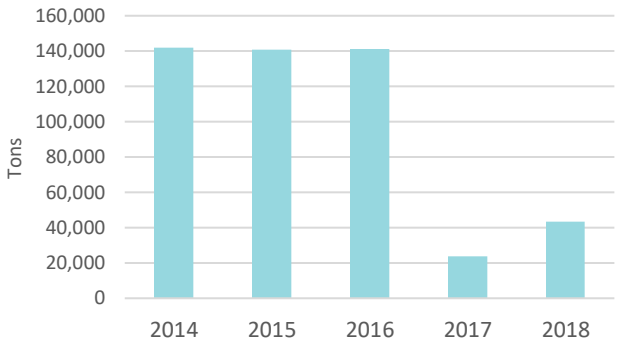


Figure 3-3 Historical Industrial Waste Generation

C. Waste Generation Projections

In the residential/commercial sector the historical and reference year data assists in forecasting waste generation. Residential and commercial waste generation is anticipated to grow at a slow rate throughout the planning period. This growth projected is based on a steady per capita generation rate so that the increase in disposal is mainly attributed to the projected population. Diversion is projected to remain stable with the current recycling program options available to District residents.

To project the industrial sector generation, the District looked to economic indicators. Prior to COVID-19 pandemic which began in the US in March 2020, predictions expected a gross domestic product growth of 1.7% annually through 2023. Taking this into consideration, the SWMD is conservatively estimating

industrial sector diversion to increase at half the predicted gross domestic product rate and industrial disposal to remain stable so that industrial waste generation will increase throughout the planning period.

Excluded Waste has not exhibited any clear pattern over the past 5 years. Without any insights into how excluded waste may change over time, this waste stream is projected to remain at 2018 levels through the planning period.

Estimation and forecasting explanations are provided in more detail in Appendices D, E, F and G.

Table 3-3 presents projected waste generation for the first 6 years of the planning period.

Table 3-3 Waste Generation Projections

Year	Residential Commercial Waste	Industrial Waste	Excluded Waste	Total
	Waste (tons)	Waste (tons)	Waste (tons)	Waste (tons)
2021	41,397	34,413	9,307	85,117
2022	41,509	34,710	9,307	85,526
2023	41,620	35,011	9,307	85,938
2024	41,732	35,313	9,307	86,353
2025	41,844	35,619	9,307	86,770
2026	41,955	35,927	9,307	87,190

Source: Appendices G and K
Sample Calculation:
Generation = Disposal + Recycle
Total = Residential/Commercial Generation + Industrial Generation
Per Capita Generation = ((Generation x 2000) / 365) / Population

CHAPTER 4 WASTE MANAGEMENT

Purpose of Chapter 4 (Content in this box is authored by Ohio EPA)
Chapter 3 provided a summary of how much waste the SWMD (refers to both SWMDs and Authorities) generated in the reference year and how much waste the policy committee estimates the SWMD will generate during the planning period. This chapter summarizes the policy committee's strategy for how the SWMD will manage that waste during the planning period.

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

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

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

Ohio has more than 30 years of remaining landfill capacity. That is more than enough capacity to dispose of all of Ohio's waste. However, landfills are not distributed equally around the state. Therefore, there is still the potential for a regional shortage of available landfill capacity, particularly if an existing landfill closes. If that happens, then the SWMDs in that region would likely rely on transfer facilities to get waste to an existing landfill instead of building a new landfill.

Finally, SWMD has the ability to control which landfill and transfer facilities can, and by extension cannot, accept waste that was generated within the SWMD. The SWMD accomplishes this by designating solid waste

A. Waste Management Overview

Clinton County manages waste through a combination of landfills and incinerators, recycling programs and facilities, transfer stations, and composting facilities. Figure 4-1 depicts total waste generation management in the reference year. More than 50% of the

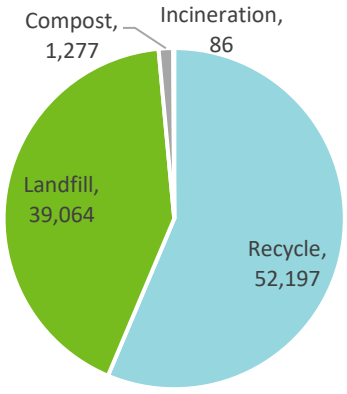


Figure 4-1 Methods of Managing Waste

waste generated is diverted– meaning the majority of generation is being recycled or composted.

Table 4-1 presents projected waste generation for the first 6 years of the planning period. The District is expecting growth in recycling and landfilling and composting to hold flat.

Table 4-1 Methods for Managing Waste Projections

Year	Generate[1]	Recycle[2]	Compost[2]	Transfer[3]	Landfill[3]
2022	85,117	44,184	1,181	857	38,895
2023	85,526	44,581	1,181	857	38,906
2024	85,938	44,981	1,181	857	38,918
2025	86,353	45,384	1,181	858	38,929
2026	86,770	45,790	1,181	858	38,941
2027	87,190	46,198	1,181	858	38,952

Source:
[1]Reference Year Appendix Table G-1 and Projections Table G-2
[2]Reference Year Appendix Table E-7 and Projections Table E-8 and Reference Year Appendix Table F-6 and Projections Table F-7
[3]Reference Year Appendix Table D-5 and Projections Table D-6

B. Profile of Waste Management Infrastructure

This next section identifies waste management infrastructure, and identifies gaps and needs to handle the expected growth.

1. Landfill Facilities

A wide variety of wastes are disposed in municipal solid waste landfills and includes 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 may also be disposed in municipal solid waste landfills.

Roughly 56% of the District's municipal solid waste (includes direct hauled and transferred) is disposed in the Wilmington Sanitary Landfill in Clinton County (Figure 4-2). Additionally, there are several landfills within reasonable direct haul and transfer distance. The volume of waste each landfill receives is dependent on its own collection and transport capabilities or upon its relationships with independent haulers, and its permit to accept approved daily waste tons. The majority of the landfills are owned and operated by the private sector. Clinton County completed a landfill capacity analysis to determine the available capacity for handling the expected growth. This analysis found there is over 100 years of landfill capacity available in the region.

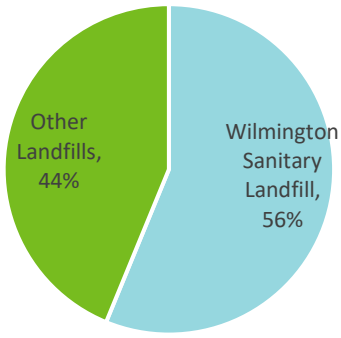


Figure 4-2 Landfills Used in Reference Year

2. Transfer Facilities

Waste collection service in the District is provided by public haulers, private haulers, or self-haul. The path of waste to a landfill flows either by direct haul or through a transfer facility. Approximately 98% 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.

Five transfer facilities transferred waste during the reference year. All transfer facilities are located outside the SWMD, and all transfer facilities handling SWMD waste are privately owned and operated.

3. Composting Facilities

Two compost facilities reported receiving materials from the District. The Wilmington Sanitary Landfill is the only registered Class IV compost facility in the District. Class IV materials were also tracked to a compost facility in Warren County. Regionally, organics (includes a variety of biodegradable feedstocks, including yard debris, wood chips, brush, wood waste, manure, household organics, soiled paper, and food scraps) diversion facilities (Class II, III, and IV) are located within the District or in the immediately adjacent counties. While organic diversion facilities are within a reasonable distance there is a lack of collection infrastructure to transport feedstock to these processing facilities. Collection of organic waste is integral to any composting system and economics is generally more than twice the processing cost on a per ton basis.

4. Processing Facilities

A MRF is a specialized facility that receives, separates and prepares recyclable materials for marketing to end-user manufacturers. Materials collected at the curb and through drop-off programs are sent to MRFs. Clinton County relies on out-of-district material recovery facility (MRF) processing capacity.

In 2018, Clinton County's recycling was processed at three single-stream MRFs. The majority of recyclables went to Rumpke Recycling in Dayton. A smaller portion of recyclables were processed at Rumpke Recycling in Hamilton County and Rumpke Elmwood Recycling Cincinnati. These facilities have complex sorting equipment designed to sort and separate specific materials (plastic bottle and jugs, paper, cardboard, glass, and cans). If other materials are placed in the bins destined for these MRFs, it can be dangerous for the workers and sorting machinery.

5. Waste Collection

The City of Wilmington operates their own municipal solid waste collection service for their residents, businesses, and institutions. Outside of Wilmington, municipal solid waste is collected from residents, businesses, and institutions and transported to landfills by private waste operators.

Curbside recycling is provided by the City of Wilmington from to residents and businesses within the City.

C. Solid Waste Facilities Used in the Reference Year

1. Landfill Facilities

Table 4-2 lists the landfills receiving waste from Clinton County in the reference year, which is direct hauled, i.e., not transferred through a transfer facility.

Table 4-2 Landfill Facilities Used by the District in the Reference Year (2018 Direct Hauled)

Facility Name	Location		Waste Accepted from SWMD (tons)	Percent of all SWMD Waste Disposed	Remaining Capacity (years)[2]
	County	State			
In-District					
Wilmington Sanitary Landfill	Clinton	OH	21,958	57%	48
Out-of-District					
Rumpke Brown Co Sanitary Landfill	Brown	OH	8,388	22%	83
Rumpke Waste Inc Hughes Rd Landfill	Hamilton	OH	7,431	19%	44
Stony Hollow Landfill, Inc	Montgomery	OH	256	1%	24
Athens Hocking C&DD/Reclamation Center Landfill	Athens	OH	110	0.3%	49
American Landfill, Inc.	Stark	OH	58	0.2%	70
Pine Grove Regional Facility	Fairfield	OH	14	0.04%	67
Out-of-State					
Tradebe Treatment & Recycling LLC (solidification facility)	Lake	IN	5	0.01%	Unknown
Total			38,220	100%	385

Source:
2018 Ohio Facility Data Report Tables. Ohio EPA .
[2]2019 Ohio Facility Data Report Tables. Ohio EPA
Appendix D, Table D-1 and Appendix M, Table M-1

2. Transfer Facilities

Table 4-3 lists the transfer facilities receiving waste from Clinton County in the reference year before landfilling.

Table 4-3 Transfer Facilities Used by the District in the Reference Year (2018)

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					
None					
Out-of-District					
Waste Management Transfer Station Fairborn	Greene	OH	17	2%	Stony Hollow Suburban Landfill
Evendale Transfer Station	Hamilton	OH	3	0.4%	Rumpke Waste Out-of-State
Montgomery Co. South Transfer Facility	Montgomery	OH	255	30%	Stony Hollow Rumpke Brown Cherokee Run Various
Waste Management of Ohio - Chillicothe	Ross	OH	522	62%	Beech Hollow
Fayette County Transfer Facility	Fayette	OH	47	6%	Beech Hollow

Facility Name	Location		Waste Accepted from District (tons)	Percent of all District Waste Transferred	Landfill Where Waste was Taken to be Disposed
	County	State			
Out-of-State					
None					
Total			844	100%	0

Source: "2018 Ohio Facility Data Report Tables". Ohio EPA .
Appendix D, Table D-2

3. Incinerator Facilities

Table 4-4 lists the incinerator facilities receiving materials from Clinton County in the reference year.

Table 4-4 Incinerator Facilities Used by the District in the Reference Year (2018)

Facility Name	Facility Type	Location		Total (tons)
		County	State	
Indianapolis Resource Recovery Facility		Marion	IN	86
Total				86

4. Composting Facilities

Table 4-5 lists the permitted composting facilities receiving materials from Clinton County in the reference year.

Table 4-5 Compost Facilities Used by the District in the Reference Year (2018)

Facility Name	Location (County)	Material Composted (tons)	Percent of all Material Composted
In District			
Wilmington Sanitary Landfill	Clinton	357	32%
Out-of-District			
Brausch Farms		761	68%
Total		1,118	100%

Source:
Appendix B, Table B-5

5. Processing Facilities

Table 4-6 lists the processing facilities receiving materials from Clinton County in the reference year.

Table 4-6 Processing Facilities Used by the District in the Reference Year (2018)

Name of Facility	Location		Facility Type	Recyclables Accepted from District (tons)
	County	State		
In-District				
None				
Out-of-District				
Rumpke Recycling – Dayton	Montgomery	OH	SS, MS, Blue Bag MRF	1,960
Rumpke Center City Recycling	Hamilton	OH	SS MRF	1
Rumpke Elmwood Recycling Cincinnati	Hamilton	OH	Per item basis, call Rumpke for assistance	14
Out-of-State				
None				
			Total	**1,975**

Source:
Appendix B, Table B-7
Note:
* Tons reported are from Clinton County collection programs.

D. Use of Solid Waste Facilities During the Planning Period

The District continues to support an open market for the collection, transport and disposal of solid waste. There is sufficient access to municipal solid waste landfill capacity for the planning period and access to transfer facilities to manage waste. Landfill capacity remains abundant and exceeds available volume of waste generated locally.

Clinton County is not expecting changes in the management of waste through the planning period. Following historical trends, the planning period expects waste to be similarly managed as shown in Figure 4-3. Clinton County does not expect any changes to the recyclable processing facilities or flows to processing facilities during the planning period. Additional capacity is not needed.

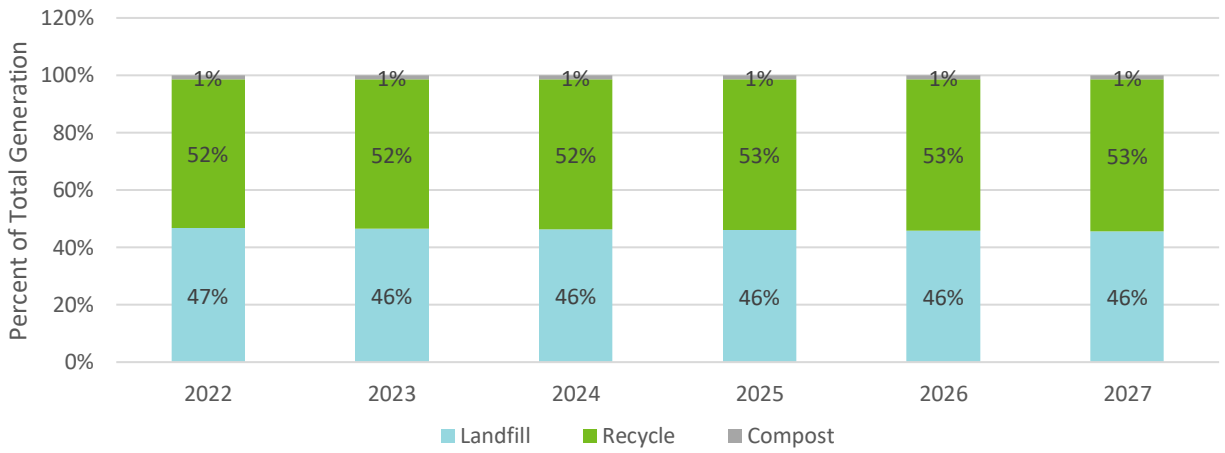


Figure 4-3 Historical Management Methods

E. Siting Strategy

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

Although unlikely, the policy committee can conclude that it is in the SWMD's best interest to construct a new solid waste landfill facility to secure disposal capacity. In that situation, Ohio law requires the policy committee to develop a strategy for identifying a suitable location for the facility. That requirement is found in Ohio Revised Code Section 3734.53(A)(8). This strategy is referred to as a siting strategy. The policy committee must include its siting strategy in the solid waste management plan. The siting strategy is located in Appendix S.

The District will rely upon the Ohio EPA siting strategy contained in Ohio Administrative Code 3745-27, 3745-30, and 3745-37 as well as other available siting criteria guidance from Ohio EPA's Southwest District Office.

F. Designation

Purpose of Designation

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

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

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

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

If the board of directors designates facilities, then the next section will provide a summary of the designation process and Table 4-7 will list currently designated facilities.

1. Description of the SWMD's Designation Process
   The Clinton County Board of County Commissioners is hereby authorized to designate solid waste management facilities in accordance with ORC Section 343.014, and reserves the right to do so during the period covered by the Plan update. At this time, the Board chooses not to designate facilities and will allow any industry, political jurisdiction, and solid waste hauler to use any solid waste management facility. If circumstances change and the Board of Directors determines it is appropriate to designate, the designation process outlined in Ohio Revised Code shall be followed.

2. List of Designated Facilities
   There are no facilities currently designated.

Table 4-7 Facilities Currently Designated

Facility Name	Location		Facility Type
	County	State	
In-District			
none		Ohio	
		Ohio	
Out-of-District			
none		Ohio	
Out-of-State			
none			

CHAPTER 5 WASTE REDUCTION AND RECYCLING

Purpose of Chapter 5

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

Between achieving the goals of the state plan and meeting local needs, the SWMD needs 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 member counties.

Before deciding on the programs and services that are necessary and will be provided, the policy committee (board of trustees for an Authority) performed a strategic, in-depth review of the SWMD's existing programs and services, recycling infrastructure, recovery efforts, finances, and overall expectations. This review consisted of a series of 14 analyses that allowed the policy committee to obtain a holistic understanding of the SWMD by answering questions such as:

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

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

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

A. Solid Waste Management District Priorities

Priority areas to focus efforts in the 2022 Plan include:

Priority Program	Priority Area
Full-Time Drop-off	Optimizing drop-off locations
Fiber Collection Program	Enhancing fiber, specifically cardboard collection
Data Collection Program	Collecting data
Countywide Curbside Recycling Promotion	Engaging community elected officials for curbside recycling
Social Media Outreach	Increase social media presence and develop short videos
Scrap Tire Collection Program	Continue holding annual scrap tire events

Strategies/programs being implemented currently address these priority areas. However, based on the evaluation, the programs can adapt specific actions to continue to progress towards the broad goal.

B. Program Descriptions

This section briefly describes major programs and services available during the planning period. Appendix I contains complete descriptions.

1. Residential Recycling Programs

Curbside Recycling Services

The District does not haul curbside recycling or waste services.

Table 5-1 Curbside Recycling Services

ID#	Name of Curbside Service/Community Served	Service Provider	When Service Was/Will be Available
NSC1	City of Wilmington	City of Wilmington	ongoing

The City of Wilmington offers curbside recycling service as part of its residential waste collection program. Materials accepted include paper, cardboard, plastic bottles and jugs, glass bottles and jars, cartons, and metal cans. In Spring 2018, the subscription bin-based program changed to non-subscription cart-based program. Operationally, the City collects recyclables in the recycling truck and hauls to the processor (MRF) when truck capacity is reached.

Drop-off Recycling Locations

The District does not haul curbside recycling or waste services. Funding collected pays for contract services between the solid waste district and a private service provider to service drop-off recycling locations.

Table 5-2 Drop-off Recycling Locations

ID #	Name	Service Provider	When Service was/will be Available
FTU1	Wilmington City-West, next to Bill Marine Ford (1274 W. Main St)	SWMD contracts private service provider	ongoing
FTU2	Wilmington City-South, JFS Parking Lot (1025 S. South St.)	SWMD contracts private service provider	2021 to ongoing
FTR2	Blanchester Village, across from post office (115 S. Wright St)	SWMD contracts private service provider	ongoing

ID #	Name	Service Provider	When Service was/will be Available
FTR5	Liberty Township House (7277 S.R. 134 N)	SWMD contracts private service provider	ongoing
FTR8	New Vienna Village, Peoples Bank (141 W. Main St.)	SWMD contracts private service provider	2021 to ongoing
FTR9	Sabina Village, Uhl's Market (MOVING to Sabina Pool: 449 South Jackson Street in 2021))	SWMD contracts private service provider	ongoing

The SWMD contracts with a private service provider (provide containers, collection and processing) to have available single-stream recycling drop-off containers. Containers are available for use 24/7. Materials accepted include plastic bottles and jugs, glass bottles and jars, metal cans, and paper. Containers are 6-cubic yards.

One of the priority areas is optimizing drop-off locations. The optimization plan includes adding an additional full-time urban location on the south side of town in the City of Wilmington, improving sites, removing underutilized locations, and expanding materials. Future site improvement changes to the two full-time urban drop-off sites include: resurfacing, fencing, and stationary security cameras. The end vision is six locations to service the County. The optimization plan will impact the full-time rural locations by removing 6 locations. Future site improvement changes to the remaining three full-time rural drop-off sites include: resurfacing, fencing, and stationary security cameras. Operational changes to the three full-time rural drop-off sites include: security monitoring and contracted vendor monitoring and clean-up. Operational changes to the two full-time urban drop-off sites include: security monitoring, cardboard-only container recycling, and contracted vendor monitoring and clean-up. These changes are expected to occur in 2021.

Name	Description
Fiber collection Locations	Reporting of source separated collection of fiber (paper, cardboard, etc.) occurring in the District.

2. Commercial/Institutional Sector Reduction and Recycling Programs

These programs are programs directly provided by District staff.

Name	Description
Commercial/Industrial Recycling Recognition Program	The District publicly recognizes commercial and industrial businesses for recycling efforts and stewardship utilizing media outlets.

Name	Description
Technical Assistance	The District conducts waste assessments and audits, provides education, resource materials, and assistance to the commercial and industrial sectors on source reduction, reuse and recycling. Assistance to set up recycling programs is also provided.

3. Industrial Sector Reduction and Recycling Programs

Commercial/Institutional sector programs also extend to Industrial Sector.

4. Restricted/Difficult to Manage Wastes

Name	Description
HHW / Electronics Education	District provides information on its website and resource brochure for proper handling of HHW materials, and assists residents/businesses in finding outlets for specific items.

Name	Description
Lead Acid Battery Education	District provides information on its website and resource brochure for proper handling of lead-acid batteries, and assists residents/businesses in finding outlets for specific items.

Name	Description
Scrap Tire Collection Program	The District contracts with a local or regional company to handle, transport, and process collected tires at the yearly collection event. The Scrap Tire Collection Event collects passenger-sized tires only. Additionally, the SWMD collaborates with the Clinton County Soil & Water Conservation District to host a Tire Amnesty Day for the collection of larger tires (including agricultural tires.)

Name	Description
Wilmington City Compost Site	The District does not fund or operate the Wilmington City Compost Site. The City of Wilmington operates a Class IV compost facility and accepts various yard waste materials at its compost site located adjacent to the Wilmington Landfill. Residents throughout the County were permitted to deposit materials at this location.

5. Funding/Grants

The District's economic incentives are designed to assist communities, schools, and businesses. By providing grants to these target audiences, the District assists with infrastructure gaps these audiences may experience to divert materials and litter issues. Annually, the District reviews the budget to ensure its economically feasible to issue grants.

Name	Description
Community Grants	The District offers grants to local municipalities and townships for clean-up events, recycling, and litter prevention programs. Grantees are required to provide a 25% match. Funding allocations are based on the amount of applications received in a given year. Grantees are required to submit an application.

Name	Description
P.E.A.R. Grants	The District offers grants to local schools for implementation of recycling and litter prevention education programs on their campuses. Grantees are required to provide a 25% match. Funding allocations are based on the amount of applications received in a given year. Grantees are required to submit an application.

Name	Description
Go-GREEN Grants	The District offers grants to businesses to implement or expand recycling programs. Grantees are required to match the grant dollar-for-dollar. Funding allocations are based on the amount of applications received in a given year. Grantees are required to submit an application.

Name	Description
Curbside Recycling Grant	The District set aside funding to be used for curbside recycling programs. Grant money can be used for existing curbside programs or for start-up expenses such as: infrastructure materials, supplies, printing, advertising, outreach expenses, and equipment. Communities wishing to receive money for their curbside recycling program need to apply for a grant. Grant applications will be subject to a review process and recipients to expectations and reporting requirements. Grants are awarded annually.

Name	Description
Economic Incentive Program	The District may apply for Ohio EPA grants to help waste diversion efforts, buy recycled, or closing the loop.

6. Facility Ownership/Operations

Name	Description
none	The District does not own facilities/operations.

7. Other

Name	Description
Buy Recycled Promotion	The District makes it a point to promote the concept of buying recycled-content materials during environmental presentations to schools and civic groups. The District's Outreach Specialist also encourages local businesses to purchase recycled-content materials whenever possible.

Name	Description
Market Development Outreach Program	The strategy works to incorporate more strategies at the community, County, and District level to support end markets. The District will look to develop environmentally preferable purchasing guidelines to spur demand for recovered materials. The District will also look to create a Recycled Products Directory to find companies within the County that manufacture and sell products made from recycled materials.

Name	Description

Bottle Bins for Event Recycling	Portable collection containers (shaped like large pop bottles) are used for collection of various recyclables such as plastic/glass bottles, jugs and jars, and aluminum beverage cans. Schools, businesses, and civic groups can request the use of these containers for special activities such as sporting events, company picnics, or community festivals.

Name	Description
Christmas Tree Recycling	The District instructs residents to simply deliver their trees directly to the City's compost site for shredding/composting.

Name	Description
Disaster Debris Funding Development	The District has a set plan with the Clinton County EMA to be the primary responder and serve as communication coordinator in natural disasters.

Name	Description
Litter Collection Program	The District provides bags, gloves, and other supplies to Juvenile Probation Department and various schools and civic groups to collect litter from area roadways.

Name	Description
Litter Law Enforcement	District staff perform weekly (minimum) site observations of the drop-offs to ensure they are clean and free of loose debris. Large debris pick-ups are contracted to an outside vendor. In cases where waste can be traced back to specific individuals, the District staff mails a letter to violators as a warning regarding the consequences of a repeat offense. A copy of the letter is forwarded to the Clinton County Sheriff's Office. In situations of deliberate abuse involving large amounts of unacceptable or potentially dangerous materials, local law enforcement is immediately contacted to file a report and follow up with offenders accordingly. District staff assists in identifying the individual(s) and issuing citations for municipal court.

Name	Description
Open Dump/Scrap Tire Abatement and Solid Waste Enforcement Program through Health Department	The District provides funding to the Health Department to assist in offsetting some of the costs associated with investigating and potentially remediating open dumps, scrap tire sites, and solid waste nuisance complaints within the County.

8. Data Collection

Name	Description
Data Collection Program	The District conducts surveys on residential, commercial and industrial recycling, waste reduction, and yard waste composting practices every other year. Surveys to brokers, processors, and

	solid waste haulers are also conducted. This program focuses on large generators with a goal of increasing the number of businesses surveyed.

9. *Outreach, Education, Awareness, and Technical Assistance*

Minimum education requirements prescribed by Goal 3:

- District maintains a website at www.co.clinton.oh.us/recycling.
- District's webpage serves as a resource guide.
- Solid Waste Management Plan and website serve as an infrastructure inventory.
- District staff are available for presentations.

Supplying information and seeking behavior changes is the central objective for the District's outreach and marketing. The District will employ various collateral and promotions. The key is to integrate communication such that promotional efforts are effective with the marketing activities. Incorporating the strategies and best practices described below provides a multi-layered, multi-faceted marketing and outreach strategy. Flyers, ads, postcards, print/digital advertisements, etc. are all District branded with consistent recognizable look that ties the resident/business back to the District. The following table lists the education/outreach programs.

Education/Outreach Program	Target Audience				
	Residents	Schools	Industries	Institutions and Commercial Businesses	Communities and Elected Officials
Countywide Curbside Recycling Promotion					X
Get Caught Recycling	X				
Advertisements and Promotional Item Distribution	X	X	X	X	X
Civic Group Presentations	X	X			
Outreach Partnership Development	X	X	X	X	X
Recycling Outreach to Communities	X				X
Recycling Resources Brochure	X				
School Contests		X			
School Open House Events		X			
School Presentations		X			
Social Media Outreach	X	X	X	X	X
The Recycling Educator Newsletter		X			

OUTREACH PRIORITY – CARDBOARD

Name	Start Date	End Date	Goal
Outreach Priority – Drop-off Recycling	2021	Fall 2022	4

The District is consolidating drop-off locations beginning in 2021. To keep users recycling, users need to know changes to the program so as to avoid confusion and frustration during changes. About a month before sites close,

the District will inform residents of location closings and changes and continue education during changes as well as after. Much of the campaign design will be from input received from users during engagements (see table below).

Target Audience	Tier	Tactic	Deliverable	Metrics
Audience: Residents using drop-off recycling locations **Problem (Desired Behavior Change):** 1) Use consolidated drop-off locations 2) Decrease material contamination	1	Educate residents about consolidation plan and create baseline measurement on tonnage	FY2021 Develop consolidation plan and post new consolidation location map on Facebook and website. Present new locations at City of Wilmington council and township trustee meeting.	Establish baseline tonnage at drop-off
	1	Observe current behavior and conduct onsite interviews with recycling users understand what media platform to use to reach the audience.	FY2021 Staff locations and hand out address for new location and direct audience to website for additional drop-off location addresses prior to consolidation. Increase presence on social media.	Define barrier to craft message. Track media posts messages and frequencies
	1	After site location changes, staff new drop-off consolidation locations to obtain feedback	FY2021 Discover incidents barriers and benefits with move	Define barrier to craft communication message.
	1	Continued outreach to users	FY2021 Implement additional campaign strategy	Using measurement baseline determine campaign success after 3 months of implementation
	2	Create baseline measurement on number of sites (disregard locations that are closing for consolidation) that have had dumping issues in the past	Already completed observational measurement pre-campaign. FY2021 Complete observational measurement post-campaign.	Establish baseline number to weigh against after communications campaign
	2	Observe current behavior and conduct onsite interviews with recycling users at at-risk drop-off locations to understand why contamination material and to understand what media platform to use to reach the audience.	FY2021 Discover incidents, barriers, and benefits	Define barrier to craft communication message. Establish baseline number of incidents observed by users to weigh against after communications campaign
	2	Based on data, create strategic, material contamination communications campaign measurement and tactics. Message specific to barriers. Identify media platform and prompts.	FY2021 Implement campaign strategy	Using measurement baseline and goals determine campaign success after 6-12 months of implementation

Name	Start Date	End Date	Goal
Outreach Pilot – Cardboard Campaign	2021	2021 but if pilot extends could also be ongoing	4

Start date is expected in 2021 but may be delayed depending on the challenges with cardboard pilot program adding to Wilmington-West location.

Research

Research demonstrates challenges with the infrastructure to collect cardboard. Currently only those residents living in the City of Wilmington have access to recycle cardboard at the curb. Other residential access is available for residents to drop-off at the Wilmington Landfill. Barriers to this drop-off are lack of convenient hours to drop-off in the evening or on the weekend. Recognizing these challenges, the District needs to be ready to implement a communication strategy to tell residents changes and opportunities to recycle this material if and when program/infrastructure changes occur. Implementation for this outreach priority is not yet established because of the challenges with cardboard management.

Baseline cardboard collected in 2018 is 2,272 tons.

Outreach Planning and Implementation

There are two audience groups the District is targeting.

1. City of Wilmington

   The District will conduct more research through meetings and phone calls to further refine and identify challenges and barriers the City anticipates operationally to scale operations larger to handle cardboard from the Wilmington location drop-offs. With the changes to the City's cardboard operations, they agreed to pilot a cardboard only drop-off at the Wilmington-West location. At this location, the City will provide the container (6-yard dumpster), collection, and compaction to send to a processor. The District also anticipates technical assistance support service and operations.

2. Residents

   The behavior change desired for residents is to recycle their cardboard at the Wilmington-West drop-off location. In the developed outreach it is important the District identify this as a pilot program.

Target Audience	Tier	Tactic	Deliverable	Metrics
Audience: Residents recycle cardboard at Wilmington-West drop-off recycling location **Problem (Desired Behavior Change):** Recycle cardboard	1	Educate residents to specific drop-off location cardboard will be accepted at and create baseline measurement on tonnage	FY SPRING 2021 Staff location to pre-educate residents that change is coming and when to expect change. City and District will jointly release a press release. District will develop collateral of how to recycle cardboard (photos, videos, etc.)	Establish baseline tonnage at drop-off.
	1	After material added, observe behavior and conduct onsite interviews with recycling users to understand what media platform to use to reach the audience.	FY2021 Staff locations and / or use sandwich education signs to show best practices. Obtain quotes from users for social media.	Define barrier to craft message. Track media posts, messages, and frequencies.
	1	After site location changes, staff drop-off location to obtain feedback.	FY2021 Discover incidents, barriers, and benefits.	Define barrier to craft communication message.
	1	Continued outreach to users.	FY2021 Use signs and show stats to show impact of diverting cardboard.	Using measurement baseline, determine campaign success after 3 months of implementation

Evaluation

The District tracks recycling annually from a variety of sources. The District plans to monitor the annual tonnage of cardboard recovered to measure for impacts from outreach and infrastructure changes.

C. Waste Reduction and Recycling Rates

The SWMD met the 25% residential/commercial waste reduction rate goal in the reference year, 2018, and the SWMD is projected to continue to meet that goal throughout the planning period.

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

Year	Projected Quantity Collected (tons)	Residential/ Commercial WRR[1] (%)
2022	12,308	30%
2023	12,408	30%
2024	12,508	30%
2025	12,608	30%
2026	12,708	30%
2027	12,808	31%

Notes: WRR = Waste Reduction Rate
Source:
Appendix K, Table K-1
Sample Calculation:
Waste Reduction Rate = Recycled / Total Generated

Table 5-4 Industrial Waste Reduction and Recycling Rate

Year	Projected Quantity Collected (tons)	Industrial WRR[1] (%)
2022	33,057	96%
2023	33,354	96%
2024	33,654	96%
2025	33,957	96%
2026	34,263	96%
2027	34,571	96%

Notes: WRR = Waste Reduction Rate
Source:
Appendix K, Table K-2
Sample Calculation:
Waste Reduction Rate = Recycled / Total Generated

CHAPTER 6 BUDGET

Purpose of Chapter 6

Ohio Revised Code Section 3734.53(B) requires a solid waste management plan to present a budget. This budget accounts for how the SWMD will obtain money to pay for operating the SWMD and how the SWMD will spend that money. For revenue, the solid waste management plan identifies the sources of funding the SWMD will use to implement its approved solid waste management plan. The plan also provides estimates of how much revenue the SWMD expects to receive from each source. For expenses, the solid waste management plan identifies the programs the SWMD intends to fund during the planning period and estimates how much the SWMD will spend on each program. The plan must also demonstrate that planned expenses will be made in accordance with ten allowable uses that are prescribed in ORC Section 3734.57(G).

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

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

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

A. Overview of SWMD's Budget

The activities and services described in Chapter 5 are supported through generation fees, tier disposal fees, and miscellaneous other revenues. The District projects to receive an annual average of $211,022 in revenues over the first six years of the planning period (2022-2027). The first six years of District expenses are projected to average an annual of $242,057. Expenses are projected higher than revenues, expecting a net loss with the purpose of drawing down the reserve balance.

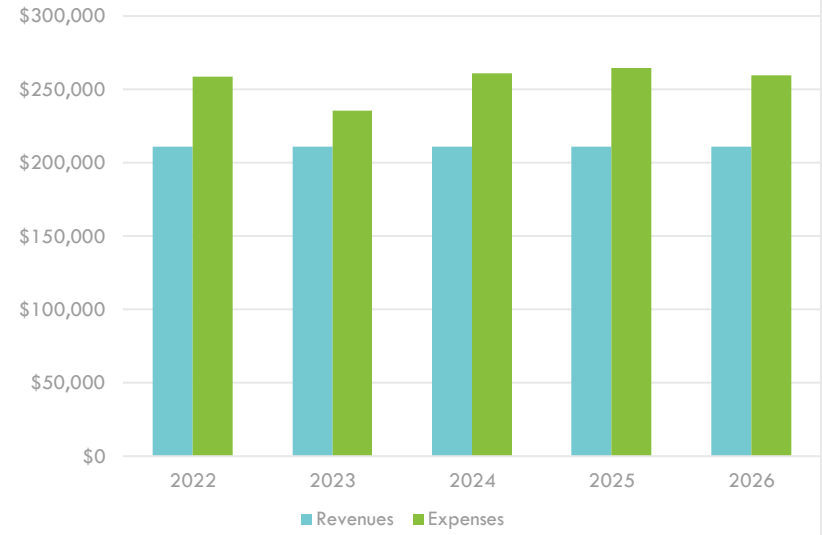


Figure 6-1 Projected Revenues and Expenses

B. Revenue

Overview of How Solid Waste Management Districts Earn Revenue

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

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

Disposal Fees (See Ohio Revised Code Section 3734.57(B))
Disposal fees are collected on each ton of solid waste that is disposed at landfills in the levying SWMD. There are three components, or tiers, to the fee. The tiers correspond to where waste came from – in-district, out-of-district, and out-of-state. In-district waste is solid waste generated by counties within the SWMD and disposed at landfills in that SWMD. Out-of-district waste is solid waste generated in Ohio counties that are not part of the SWMD and disposed at landfills in the SWMD. Out-of-state waste is solid waste generated in other states and disposed at landfills in the SWMD.

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

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

Generation Fees (see Ohio Revised Code Section 3734.573)
Generation Fees are collected on each ton of solid waste that is generated within the levying SWMD and accepted at either a transfer facility or landfill located in Ohio. The fee is collected at the first facility that accepts the SWMD's waste. There are no minimum or maximum limits on the per ton amount for generation fees.

Rates and Charges (see Ohio Revised Code Section 343.08)
The board of directors can collect money for a SWMD through what are called rates and charges. The board can require anyone that receives solid waste services from the SWMD to pay for those services.

Contracts (see Ohio Revised Code Sections 343.02 and 343.03)
The board of directors can enter into contracts with owners/operators of solid waste facilities or transporters of solid waste to collect generation or disposal fees on behalf of a SWMD.

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

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

1. Disposal Fee

The District collects: $1.00 per ton of solid waste in-district; $2.00 per ton of solid waste out-of-district; and $1.00 per ton of solid waste out-of-state. Thus, for every ton generated by the District and disposed at landfills in the District $1.00 per ton is received. For every ton generated out of district by other Ohio counties, the District receives $2.00 per ton. The District receives $1.00 per ton on out-of-state generated waste.

Evaluating historical revenues, in-district waste has been fairly stable from 2014 to 2018, averaging approximately $12,700. Out-of-district revenue from the disposal fee has increased significantly since 2014 from approximately $1,000 to $11,900 in 2018, corresponding to the increase in out-of-district waste being disposed in the Wilmington Sanitary Landfill. To forecast through the planning period the District calculated the 2015 to 2018 average annual revenues and estimated a flat projection through the planning period for each tier disposal fee source.

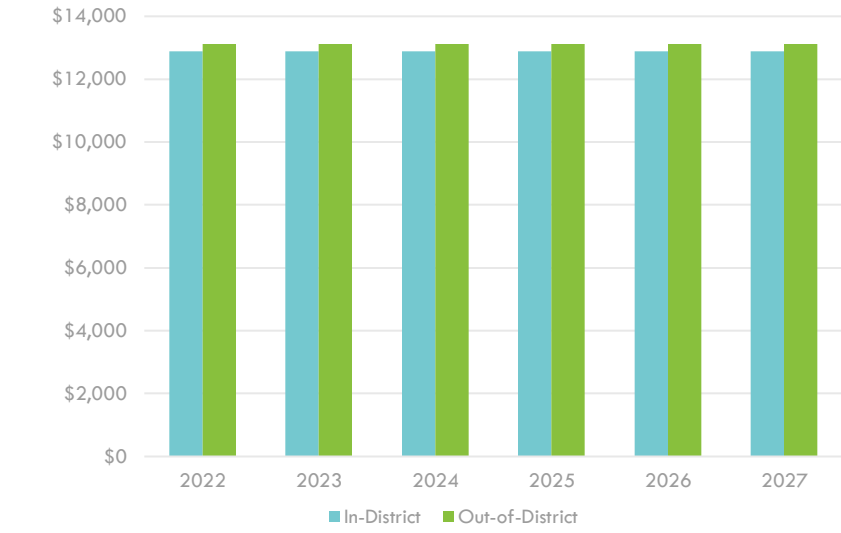


Figure 6-2 Tiered Disposal Fee Projected Revenues

2. Generation Fee

The generation fee is the primary funding source for the District. The generation fee for the District is $6.50 per ton, and this fee has not changed since 2010.

Historically the revenue from the generation fee has been fairly stable, with a slight dip in 2016 that corresponds to a drop in residential and commercial disposal. On average, the District collected $185,005 annually from 2014 to 2018 in generation fees. To forecast, the average revenue of $185,005 is estimated from 2021 to 2027.

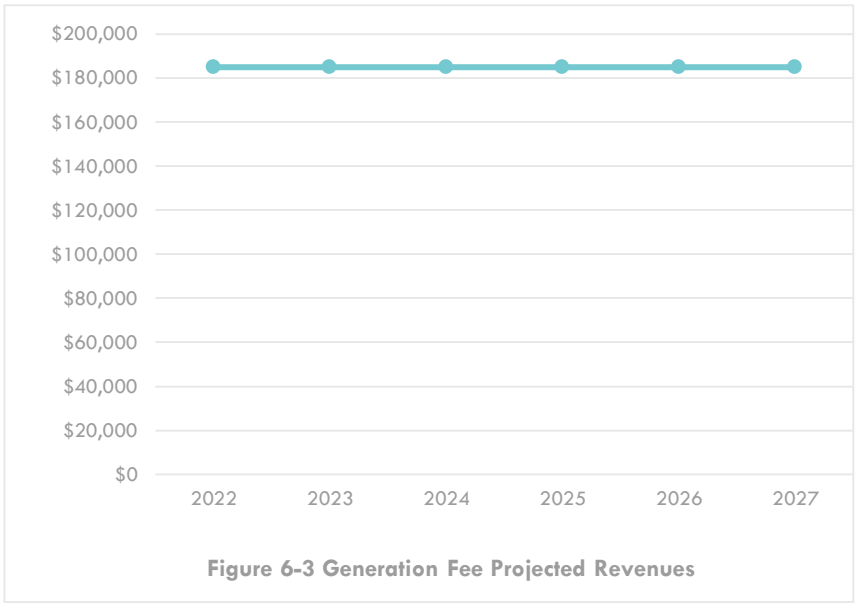


Figure 6-3 Generation Fee Projected Revenues

A $2.00 generation fee increase is shown beginning in year 2028. Before the forecasted fee increase would be implemented, the District will be preparing another Plan Update and will assess the actual revenues and expenses to determine if the forecasted increase is necessary. The forecasted $2.00 generation fee increase is not being ratified with this 2022 Plan Update. It is forecasted to show a balanced budget in 2036, the last year of the planning period. The generation fee increase is not shown in Figure 6-3 since it is beyond the first six years of the planning period.

3. Fees collected via Designation Agreements

The District does not receive revenues from designation fees.

4. Other Funding Mechanisms Reimbursements
    a. Reimbursements: The District receives a small amount of revenue from reimbursements. Reimbursement revenues are miscellaneous monies resulting from worker's compensation refunds, unused community grant refunds, various rebates, and personnel reimbursements. The revenue from this source is not stable from year to year and the District does not project receiving any reimbursement revenue during the planning period.

    b. Grants: The District has received grants each year from 2014 to 2019, averaging approximately $12,800 annually in revenue for the District. The grant funding received by the District is directed towards the scrap tire collection programs. Due to COVID-19 and the resulting state revenue shortfalls for this year, the Ohio EPA is suspending their grant program for 2020 and 2021. The District anticipates that the Ohio EPA will resume their grant funding program in 2022, however a revenue projection is not forecasted in the planning period.

    c. Recycling Revenue: Income from sale of recyclable materials. Recycling revenue fluctuates with the markets. In 2014, the District received $1,230 in recycling revenue. In 2018, recycling revenue was down to $103 and at $17 in 2019. The decline in revenue is due to an overall decline in market value of commingled recyclable commodities on a nationwide scale. Along with declining market value of recyclable commodities, processing cost of recyclables has increased. In 2018, the District entered a new three-year agreement with Rumpke to process the drop-off recycling collected in the District. The new agreement came with a 30% increase in cost. Due to the instability of recycling markets, the District does not project receiving any revenue from the sale of recyclable commodities.

    d. Tire Event User Fees: In years 2020 and 2021 users are charged $1 per tire at the scrap tire recycling events. When the District holds a scrap tire event in the planning period, user fees are anticipated to be charged. Since the event is contingent on successful grant funding and grant revenues are not forecasted, user fees are not forecasted in Table O-5.

Table 6-1 shows the projected revenues for the first six years of the planning period

Table 6-1 Summary of Revenue

Year	Disposal Fees	Generation Fees	Other Revenue				Total Revenue
			Reimbursements	Grants	Recycling Revenue	Tire Event Revenue	
2018	$25,065	$191,068	$0	$13,363	$0	$0	$229,598
2022	$26,017	$185,005	$0	$0	$0	$0	$211,022
2023	$26,017	$185,005	$0	$0	$0	$0	$211,022
2024	$26,017	$185,005	$0	$0	$0	$0	$211,022
2025	$26,017	$185,005	$0	$0	$0	$0	$211,022
2026	$26,017	$185,005	$0	$0	$0	$0	$211,022
2027	$26,017	$185,005	$0	$0	$0	$0	$211,022

Source(s) of Information:
Year 2018 sourced from Quarterly Fee Reports
Planning period years sourced from Appendix O
Sample Calculations:
Total Revenue = Generation Fes + Other Revenue

C. Expenses

Overview of How Solid Waste Management Districts Spend Money

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

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

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

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

Table 6-2 summarizes the types of expenses the District expects for implementation of this Plan Update. Detailed information regarding expenses is provided in Appendix O.

Table 6-2 Summary of Expenses

Expense Category	Reference	Planning Period Year					
	2018	2022	2023	2024	2025	2026	2027
Plan Monitoring/Prep.	$0	$0	$3,600	$15,000	$18,600	$0	$3,600
Administration and Overhead	$116,906	$159,505	$165,141	$170,995	$178,077	$183,397	$189,963
Recycling Collection - Curbside	$0	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Recycling Collection - Drop-off	$11,154	$64,120	$39,633	$40,157	$40,691	$41,236	$41,792
Special Collection - Tire Collection	$12,623	$0	$0	$0	$0	$0	$0
Education Awareness	$6,706	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000
Recycling Market Development	$0	$28,000	$0	$8,000	$0	$8,000	$0
Litter Collection/Education	$0	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000

Expense Category	Reference	Planning Period Year					
	2018	2022	2023	2024	2025	2026	2027
Open Dump, Litter Law Enforcement - Health Dept	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Municipal/Township Assistance - Providing Other Public Services	$3,503	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Total Expenses	$152,891	$278,625	$235,374	$261,152	$264,369	$259,633	$262,355

Source(s) of Information:
Year 2018 sourced from Quarterly Fee Reports
Planning period years sourced from Appendix O
Sample Calculations:
Total Expenses = sum of expenses category

D. Budget Summary

Table 6-3 Budget Summary

Year	Revenue	Expenses	Net Difference	Ending Balance
Reference Year				
2018	$229,598	$152,891	$76,707	$787,372
Planning Period				
2022	$211,022	$278,625	($67,603)	$683,340
2023	$211,022	$235,374	($24,352)	$658,988
2024	$211,022	$261,152	($50,130)	$608,858
2025	$211,022	$264,369	($53,347)	$555,511
2026	$211,022	$259,633	($48,611)	$506,900
2027	$211,022	$262,355	($51,333)	$455,566

Source(s) of Information:
Year 2018 sourced from Quarterly Fee Reports
Planning period years sourced from Appendix O
Sample Calculations:
Net Difference = Revenue – Expenses
Ending Balance = Net Difference + Previous Year Ending Balance

E. Major Facility Project

Purpose of a Budget for a Major Facility Project

SWMDs can own and operate solid waste management facilities, and a number already do. Other SWMDs include feasibility studies or strategies to build new or make renovations to existing facilities in their solid waste management plans.

The types of facilities solid waste management districts own and operate include landfills, transfer facilities, material recovery facilities, recycling centers, household hazardous waste collection centers, and composting facilities.

Solid waste facilities represent major financial undertakings that can result in substantial capital investments along with ongoing operating costs. For this reason, when the policy committee decides that the SWMD will develop a new or make extensive renovations to an existing solid waste management facility, the solid waste management plan provides a specific budget for that facility.

This chapter of the solid waste management plan provides a summary of the SWMD's major facility budget. The full details of the budget are provided in Section D of Appendix O.

A major facility project is not scheduled in this 2022 Plan Update.

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 2018.

B. Planning Period

The planning period for this solid waste management plan is 2022 to 2036.

C. Goal Statement

The District will achieve the following Goal:
Goal 1: The SWMD shall reduce and recycle at least 25 percent of the solid waste generated by the residential/commercial sector.

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

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

   Data does not differ.

b. 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

This Plan Update is written for a fifteen-year planning period, in accordance with ORC Section 3734.56(A), an amended plan will be submitted to the director every five years on or before the anniversary date of the approval of this Plan Update. Should a material change in circumstances occur within the District from those addressed in this Plan Update prior to the required update submission, the Board of County Commissioners may request the preparation of a draft amended plan. The process used for determining when a material change in circumstances has occurred will be the following:

Criteria and Monitoring

Waste Generation – The District Coordinator will annually evaluate waste generation in the District and will identify any significant changes in waste generation by monitoring the disposal of District generated solid waste in landfills. A significant change is defined as a thirty percent increase or decrease in the amount of solid waste that is disposed in landfills in any one year. Should such a change occur, the District Coordinator will investigate the reasons for the change and report the findings of the investigation to the Board of County Commissioners and the Policy Committee.

Capacity – A reduction in capacity availability shall include the unexpected landfill closure and/or twenty percent or greater reduction in the ability to process or dispose of District waste of any facility currently used by the District that receives twenty percent or more of the District's waste stream. This does not include normal down time to fix or install equipment or temporary emergencies of less than ninety days. This would include facilities that did not receive approval for expansions, where site capacity was reduced, or for which permits or licenses were revoked due to environmental problems. The District Coordinator will annually monitor landfill capacity from each landfill identified as accepting District waste.

A material change has not occurred if the District can secure arrangements to manage the waste generated by the District at another facility.

If the District Coordinator believes a reduction in capacity has occurred, and there are no other facilities available to manage the waste, a special meeting with the Board of County Commissioners and Policy Committee will be called.

Waste Reduction and Recycling – During the annual review of plan implementation, the District and the Policy Committee will identify any significant changes to strategies for waste reduction and/or recycling, significant delays in program implementation and changes in plan implementation procedures. A significant change to strategies for waste reduction and recycling is defined as the discontinuance or alteration of programs as provided for in the Plan Update that prevents the District from implementing the Plan Update as envisioned by the Policy Committee. A significant delay in program implementation is defined as a delay in implementing any scheduled program from the Plan Update that is greater than one year from the deadlines established in the Plan Update. A change to plan implementation procedures is defined as a change that represents a significant deviation from implementation as envisioned in the Plan Update.

Revenues for Plan Implementation – Changes in the availability of funds for the District resulting in significant deviation in the implementation schedule of the approved plan could result in a material change. If the District can modify programs thus reducing costs while continuing to maintain compliance, then a material change in circumstances has not occurred. The District reserves the right to adjust the amount of funds allocated to individual programs without causing a material change in circumstance, to maintain budget solvency.

A reduction in revenues that would initiate a review for a potential material change in circumstances is defined as either: a calendar year in which revenues received by the District are equal to or greater than twenty-five percent below the revenues projected for that year in this Plan Update; or a calendar year in which revenues received by the District are equal to or greater than fifteen percent below revenues received in the previous year. An increase in expenses that would initiate a review for a potential material change in circumstances is defined as either: a calendar year in which actual expenses exceed anticipated expenditures as projected in the Plan Update by $25,000; or a calendar year in which actual expenditures exceed expenditures from the previous year by $15,000 and the extra expenditures were unexpected. Any of the situations described in this paragraph have the potential to negatively impact the District's ability to fund planned activities.

The District Coordinator will annually prepare a financial report of revenues and expenses for the previous year. If the financial report indicates that any of the conditions defined in the previous paragraph have occurred, then the District Coordinator will notify the Board of County Commissioners and the Policy Committee of the findings within thirty days.

Timetable and Notification

After completion of the Annual District Report, the District with the Policy Committee and the Board of County Commissioners will review the report and any subsequent and substantial events. At this time, it will be determined whether a substantive change has occurred. Within thirty days after the Board of County Commissioners decides

that a material change has occurred, the Board shall notify Ohio EPA and direct the Policy Committee to prepare a Plan Update and proceed to adopt and obtain approval of the amended plan in accordance with ORC 3734.55 (A) through (C).

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 and trash collection services, composting facilities and yard waste management programs.

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

1. Curbside Recycling Services

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

ID #	Name of Curbside Service	Service Provider	County	How Service is Provided	Collection Frequency	Materials Collected[1]	Type of Collection	PAYT (Y/N)	Weight of Materials Collected from SWMD (tons)[2]	Service will Continue Throughout Planning Period (Y/N)
NSC1	City of Wilmington	City of Wilmington	Clinton	NSC, carts	Weekly	Cardboard, Paper, Plastic bottles and jugs, Metals, Glass, Cartons	Single Stream manual	N	334	Y
Total									334	

[1]Paper includes: Newspaper, Cardboard, Other Paper, Paper, Junk Mail & Telephone books; Plastic includes: any plastic container shaped like a bottle or jug; Metals include: Aluminum containers, Steel cans, & Tin cans; Glass includes: brown, clear, & green glass
[2]Data is 2018.
Source: City of Wilmington website: https://wilmingtonoh.org/municipal-services/sanitation-department/collection-information/

Clinton County has one city, 7 villages, and 13 townships. The City of Wilmington, the only city in Clinton County, has the only curbside recycling program in the County. Since the last plan update, the City of Wilmington has expanded their curbside recycling program from a bin-based subscription program to a cart-based non-subscription program. Tonnage increased from 78 tons collected in 2017 to 334 tons in 2018.

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

ID #	Name of Curbside Service	County	How Service is Provided	Collection Frequency	Materials Collected[1]	Type of Collection	PAYT (Y/N)	Weight of Materials Collected from SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
None	None								
Total								0	

[1]Paper includes: Newspaper, Cardboard, Other Paper, Paper, Junk Mail & Telephone books; Plastic includes: any plastic container shaped like a bottle or jug; Metals include: Aluminum containers, Steel cans, & Tin cans; Glass includes: brown, clear, & green glass
[2]Data is 2017.

Source: District

No subscription curbside recycling programs in the reference year.

2. Drop-Off Recycling Locations

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

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected[1]	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons)[2]	Service will Continue Throughout Planning Period (Y/N)
FTU1	City of Wilmington, next to Bill Marine Ford (1274 W. Main St.)	Rumpke	Clinton	Contract between SWD and a private hauler;	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	217	Y
FTU2	City of Wilmington, Wilmington College - Austin-Pickett Parking Lot	Rumpke	Clinton	Contract between SWD and a private hauler;	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	10	Unknown the College is responsible for this location
FTU3	City of Wilmington, Wilmington College - Bailey Hall Parking Lot	Rumpke	Clinton	Contract between SWD and a private hauler;	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	9	Unknown the College is responsible for this location
FTU4	City of Wilmington, Wilmington College - College Commons Parking Lot	Rumpke	Clinton	Contract between SWD and a private hauler;	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	6	Unknown the College is responsible for this location
FTU5	City of Wilmington, Wilmington College - College Hall Parking Lot	Rumpke	Clinton	Contract between SWD and a private hauler;	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	7	Unknown the College is responsible for this location
FTU6	City of Wilmington, Wilmington College - Kettering Parking Lot	Rumpke	Clinton	Contract between SWD and a private hauler;	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	7	Unknown the College is responsible for this location
FTU7	City of Wilmington, Wilmington College - Marble Hall Parking Lot	Rumpke	Clinton	Contract between SWD and a private hauler;	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	12	Unknown the College is responsible for this location

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected[1]	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons)[2]	Service will Continue Throughout Planning Period (Y/N)
FTU8	City of Wilmington, Wilmington College - Sports Science Building	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	4	Unknown the College is responsible for this location
Total								271	

[1]Paper includes: Newspaper, Other Paper, Paper, Junk Mail & Telephone books; Plastic includes: any plastic container shaped like a bottle or jug; Metals include: Aluminum containers, Steel cans, & Tin cans; Glass includes: brown, clear, & green glass
Source: 2018 Annual District Report Implementation Schedule

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

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTU1	None								
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	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected[1]	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)[2]	Service will Continue Throughout Planning Period (Y/N)
FTR1	Adams Township, across from old school (424 Clarksville Rd.)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	9	N
FTR2	Blanchester Village, across from post office (115 S. Wright St.)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	101	Y
FTR3	Chester Township House (5606 S.R. 380)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	15	N
FTR4	Liberty Township House (7277 S.R. 134 N)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	19	Y

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected[1]	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)[2]	Service will Continue Throughout Planning Period (Y/N)
FTR5	Martinsville Village, Old Schoolhouse (100 School St.)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	15	N
FTR6	Midland Village, next to Council Building (111 S. Broadway St.)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	9	N
FTR7	New Vienna Village, Streber's Market (299 N. South St.)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	60	Y
FTR8	Sabina Village, Uhl's IGA Foodliner (444 Washington St.)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	75	Y
FTR9	Vernon Township House (228 W. Main St.)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	11	N
FTR10	Wayne Township House (12 Cox Rd.)	Rumpke	Clinton	Contract between SWD and a private hauler	24hrs, 7days/week	Glass, Metal, Plastics bottles and jugs, Paper	Y	7	N
Total								321	

[1]Paper includes: Newspaper, Other Paper, Paper, Junk Mail & Telephone books; Plastic includes: any plastic container shaped like a bottle or jug; Metals include: Aluminum containers, Steel cans, & Tin cans; Glass includes: brown, clear, & green glass
Source: 2017 Annual District Report Implementation Schedule

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

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
None	None								
Total								0	

3. Mixed Municipal Solid Waste Material Recovery Facility

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

Name of Material Recovery Facility	Location (County, City)	Communities Served	Types of Materials Recovered	Weight of Materials Recovered (tons)	Waste Processed (tons)	Bypass Waste (tons)	Total Waste (tons)	Recovery Rate in Reference Year (percent)
None							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	Trash Collection Services				Curbside Recycling Services		
		PAYT (Y/N)	**Residential**	**Commercial**	**Industrial**	**Residential**	**Commercial**	**Industrial**
Caribou Sanitation and Recycling	Clinton County	Y	Y	Y	N	N	N	N
Rumpke	Clinton County	N	Y	Y	Y	Y	Y	N
Waste Management	Clinton County	N	Y	Y	Y	N	N	N
Wilmington Sanitation	City of Wilmington	N	Y	Y	Y	Y	Y	N

C. Composting Facilities

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

Facility Name	Compost Facility Classification	Publicly Accessible (Y/N)	Location	Food Waste (tons)	Yard Waste (tons)	Total
Wilmington Sanitary Landfill	IV	Y	Clinton County	0	357	0
Brausch Farms	II	N	Warren County	0	761	0
Total				0	1,118	0

Source: Ohio EPA 2018 Compost Facility Planning Report. Compost facilities (all classes) track material volumes delivered and reported to Ohio EPA.

Yard waste is a valuable organic material and when diverted from the landfill has beneficial use such as soil conditioners, erosion control, etc. To better understand the landscape of yard waste programs, a web search of each political jurisdiction was conducted. The City of Wilmington is the only political jurisdiction providing yard waste management options for its residents. The City provides curbside collection of leaves, prunings, grass clippings, and weeds that are placed in City of Wilmington paper yard waste bags purchased for $2 per bag. In addition to the curbside service, residents can drop-off yard waste for a nominal charge at the City's compost site.

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	Location	Food Waste (tons)	Yard Waste (tons)
Hauler/Grocer Food Waste Data	Commercial	Clinton	159	0
Total			159	0

Source: Ohio EPA 2018 Compost Facility Planning Report

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 from SWMD (tons)
Rumpke Recycling - Dayton	Montgomery	Ohio	MRF – SS, MS	1,960
Rumpke Center City Recycling – Hamilton County	Hamilton	Ohio	MRF – SS, MS	1
Rumpke Elmwood Recycling Cincinnati	Hamilton	Ohio	MRF – SS, MS	14
Total				1,975

Source: Ohio EPA 2018 MRF Report
Note: SS = single stream, MS = multi stream, MRF = material recovery facility

Three material recovery facilities (MRF) reported processing Clinton County materials. All three are owned by Rumpke. Rumpke Elmwood Recycling Cincinnati is the Rumpke Center City Recycling – Hamilton County MRF. Ohio EPA's data identified the MRF using two different names. To be consistent with Ohio EPA data reporting the two different names are used in Table B-7.

APPENDIX C POPULATION DATA

A. Reference Year Population

Table C-1a: Reference Year Population Adjustments

	Clinton
Before Adjustment	42,057
Additions	0
Subtractions – Lynchburg Village	2
After Adjustment	42,055

Source: "2018 Ohio County Population Estimates" prepared by Ohio Development Services Agency, Office of Research

Table C-1b: Total Reference Year Population

Unadjusted Population	Adjusted Population
42,057	42,055

Reference year population is taken from Ohio Development Services Agency Office of Statistical Research (ODSA, OSR). OSR provided estimate populations for 2018 based on the 2010 census data by governmental unit. Note: Ohio law requires that the entire population of a municipality located in more than one solid waste management district be added to the solid waste management district containing the largest portion of the jurisdiction's population. The District has two communities that are located in more than one solid waste management District: Blanchester Village in Warren County and Lynchburg Village in Highland County. While Blanchester Village is listed as also being located in Warren County, all of the population of Blanchester Village lives in Clinton County so no additional population adjustment was performed. Only two residents of Lynchburg Village reside in Clinton County with the remaining 1,476 residents living in Highland County. As such a subtraction of two was applied to the Clinton County population.

B. Population Projections

Table C-2: Population Projections

Year	Clinton
2018	42,055
2019	42,072
2020	42,089
2021	42,105
2022	42,122
2023	42,139
2024	42,156
2025	42,173
2026	42,190

Year	Clinton
2027	42,207
2028	42,224
2029	42,240
2030	42,257
2031	42,274
2032	42,291
2033	42,308
2034	42,325
2035	42,342
2036	42,359

Source: Office of Research, Ohio Development Services Agency, "2018 Population Estimates by County, City, Villages and Township", May 2019
Sample Calculations:

Projected population in 2018 = 42,057
Projected population in 2020 = 42,089
Annual population change = (42,089– 42,055) / 2 = -17
Projected population in 2019 = 2018 population + 17 = 42,072

Projections of population through the planning period are based on the latest population projections from the Ohio Development Services Agency (ODSA), Office of Statistical Research. The ODSA Planning Research and Strategic Planning Office provided year 2014 census data and projected estimates for 2020, 2025, 2030 and 2035. To determine population estimates between these years, straight-line interpolation was used.

Population projections gauge future demand for services, but in projection calculations there are room for errors due to the difficulty associated with forecasting. As projected by ODSA, population is expected to increase in Clinton County by 0.04 percent annually.

APPENDIX D DISPOSAL DATA

Appendix D provides an inventory of where waste was managed in the reference year (2018), calculates the total waste disposed in the reference year, analyzes historical waste disposal quantities and projects waste to be disposed.

A. Reference Year Waste Disposed

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

	Location		Waste Accepted from the SWMD			
Facility Name	**County**	**State**	**Residential/ Commercial (tons)**	**Industrial (tons)**	**Excluded (tons)**	**Total (tons)**
Rumpke Brown Co Sanitary Landfill	Brown	OH	6,844	872	672	8,388
Wilmington Sanitary Landfill	Clinton	OH	13,343	0	8,615	21,958
Rumpke Waste Inc Hughes Rd Landfill	Hamilton	OH	7,424	0	7	7,431
Stony Hollow Landfill, Inc	Montgomery	OH	256	0	0	256
Athens Hocking C&DD/Reclamation Center Landfill	Athens	OH	0	110	0	110
American Landfill, Inc.	Stark	OH	0	45	13	58
Pine Grove Regional Facility	Fairfield	OH	0	14	0	14
Tradebe Treatment & Recycling LLC (solidification facility)	Lake	IN	0	5	0	5
Total			27,867	1,046	9,307	38,220

[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).
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(s) of Information: Ohio EPA ADR Review Form for 2018
Sample Calculations: Residential/Commercial + Industrial + Excluded = Total

A wide variety of wastes are disposed in municipal solid waste landfills and includes 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 may also be disposed in municipal solid waste landfills. 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.

Waste collection service in the District is by public hauler, private haulers or self-haul. The path of waste to a landfill flows to landfills either by direct haul or through a transfer facility. Roughly 57%, the majority of waste direct hauled was disposed in Wilmington Sanitary Landfill. Table D-1a depicts the landfills used for waste disposal in the reference year waste. Direct hauled waste is disposed in in-state and out-of-state landfill facilities.

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

	Location		Waste Accepted from the District		
Facility Name	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).
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(s) of Information: Ohio EPA ADR Review Form for 2018

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

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

Residential/Commercial (tons)	Industrial (tons)	Excluded (tons)	Total
27,867	1,132	9,307	38,306

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(s) of Information: Ohio EPA ADR Review Form for 2018
Sample Calculations:
Residential/Commercial + Industrial + Excluded = Total

Table D-2 Reference Year Waste Transferred[1]

	Location		Waste Received from the SWMD			
Facility Name	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Waste Management Transfer Station Fairborn	Greene	OH	17	0	0	17
Evendale Transfer Station	Hamilton	OH	3	0	0	3
Montgomery Co. South Transfer Facility	Montgomery	OH	255	0	0	255
Waste Management of Ohio - Chillicothe	Ross	OH	304	218		522
Fayette County Transfer Facility	Fayette	OH	41	6	0	47
Total			620	224	0	844

[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).
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(s) of Information: Ohio EPA ADR Review Form for 2018.
Sample Calculations:
Residential/Commercial + Industrial + Excluded = Total

Transfer facilities are conveniently located and are facilities where solid waste, delivered by collection companies and residents, is consolidated, temporarily stored and loaded into semi-trailers for transport. After moving through a transfer facility, solid waste is then delivered to a processing facility or disposal site. 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.

There are no in-district transfer stations located in the SWMD. In 2018, transfer facilities managing SWMD waste identified using the following disposal facilities:

Transfer Station	Destination Landfill
Waste Management Transfer Station - Fairborn	Stony Hollow, Suburban Landfill
Evendale Transfer Station	Out of state facilities, Rumpke Waste
Montgomery Co. South Transfer Facility	Stony Hollow, Rumpke Brown, Rumpke Waste, Cherokee and various other landfills
Waste Management of Ohio – Chillicothe	Beech Hollow
Fayette County Transfer Facility	Beech Hollow

Table D-3 Waste Incinerated/Burned for Energy Recovery in Reference Year[1]

		Location		Waste Accepted from the SWMD			
Facility Name	**Facility Type**	**County**	**State**	**Residential/ Commercial (tons)**	**Industrial (tons)**	**Excluded (tons)**	**Total (tons)**
Indianapolis Resource Recovery Facility	WTE	Marion	IN	0	86	0	86
Total				0	86	0	86

[1] The facilities listed in Table D-3 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).
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(s) of Information: Ohio EPA ADR Review Form for 2018. Email from Ohio EPA.

One waste to energy facility in Indianapolis, Indiana was used as a management method in the reference year.

Table D-4 Total Waste Disposed in Reference Year

	Residential/ Commercial (tons)	**Industrial (tons)**	**Excluded (tons)**	**Total (tons)**	**% of Total Waste Disposed**
Direct Hauled	27,867	1,046	9,307	38,220	98%
Transferred	620	224	0	844	2%
Incinerated	0	86	0	86	0%
Total	28,487	1,356	9,307	39,150	100%
Percent of Total	73%	3%	24%	100%	

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(s) of Information: Ohio EPA ADR Review Form for 2018.
Sample Calculations:
% of Total Waste Disposed = Total Direct Hauled / Total Disposed * 100%
= 38,220 / 39,150 * 100%
= 98% Direct Hauled Waste

According to Ohio EPA Format 4.0, if excluded waste is 10% or less of total disposal in the reference year, then SWMDs are not required to account for excluded waste in the solid waste management plan. For the SWMD, excluded waste accounts for 24% of total disposal in 2018 and will be included.

Approximately 98% 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. More than half (57%) of waste generated in the District is hauled to Wilmington Sanitary Landfill in Clinton County. Nearly all remaining waste is direct hauled to out-of-county facilities in Brown and Hamilton Counties. A small (less than 1%) of waste is disposed of in out-of-state facilities in Indiana. Approximately 2% of the waste was transferred, meaning a refuse truck picked up waste from clients and hauled that waste to a transfer facility.

B. Historical Waste Analysis

Table D-5 Historical Disposal Data

		Residential/ Commercial Solid Waste		Industrial Solid Waste	Excluded Waste	Total Waste
		Rate (ppd)	Weight	Weight	Weight	Weight
Year	Population		(tons)	(tons)[2]	(tons)[3]	(tons)[4]
2014	42,038	4.11	31,547	2,271	5,433	39,251
2015	42,038	3.59	27,507	1,251	10,403	39,161
2016	42,038	3.13	24,004	1,188	10,659	35,851
2017	42,038	3.73	28,593	1,064	7,864	37,521
2018	42,055	3.71	28,487	1,356	9,307	39,150

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(s) of Information: Ohio EPA ADR Review Forms for 2014, 2015, 2016, 2017 and 2018 for population and waste disposal data.
Sample Calculation:
Residential/Commercial + Industrial + Excluded = Total Waste
31,457 + 2,271 + 5,433 = 39,251 tons disposed in 2014
((Residential/Commercial tons * 2,000 pounds per ton) / 365 days) / Population = Residential/Commercial disposal rate
(31,547 tons * 2,000 pounds per ton) / 365 days) / 42,038 persons = 4.11 pound per person per day)

As seen in Figure D-1, total waste disposal declined significantly from 2015 to 2016, followed by increases in 2017 and 2018. Total disposal in 2018 was comparable to total disposal in 2014, despite a flat population. Population is not following disposal tonnage trends.

As shown in Figure D-2, excluded waste is growing. As excluded waste increases, the percent of residential/commercial and industrial tons disposed is decreasing showing a relatively flat trend line for historical disposal.

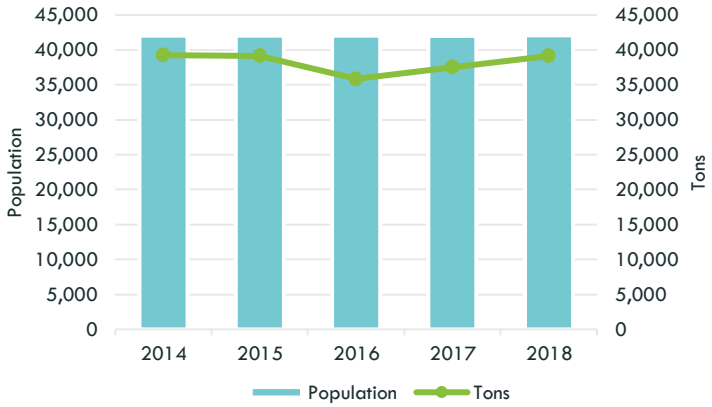


Figure D-1 Historical Disposal and Population

1. Residential/Commercial

Figure D-2 shows the total residential and commercial tons of waste disposed in the District from 2014 through 2018. As shown in Figure D-3, waste tonnages do not directly follow population trends. Residential and commercial disposal decreased from 2014 to 2016 despite a flat population. The historical disposal trend more closely correlates to US economy trends. Near the end of 2015, the US economy tracked slow pace growth which continued through 2016. The growth was the slowest tracked since 2011[5]. As the economy rebounded the disposal increased as seen for 2017 and 2018.

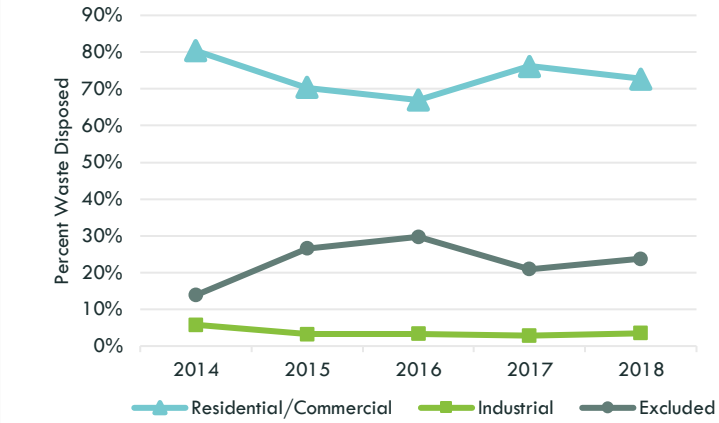


Figure D-2 Percentage of Waste Diposal of Total

The 2016 Plan projected lower disposal amounts than actually seen for years 2014 through 2018. The 2016 Plan demonstrated declining landfill tonnages since 2005. Commercial business loss in the downturned economy greatly impacted the SWMD's disposal. The lowest disposal seen was recorded in year 2012, the reference year for the 2016 Plan. Noticing the relationship between waste disposal and the economy, a conservative increase was applied to the waste projections in the 2016 Plan.

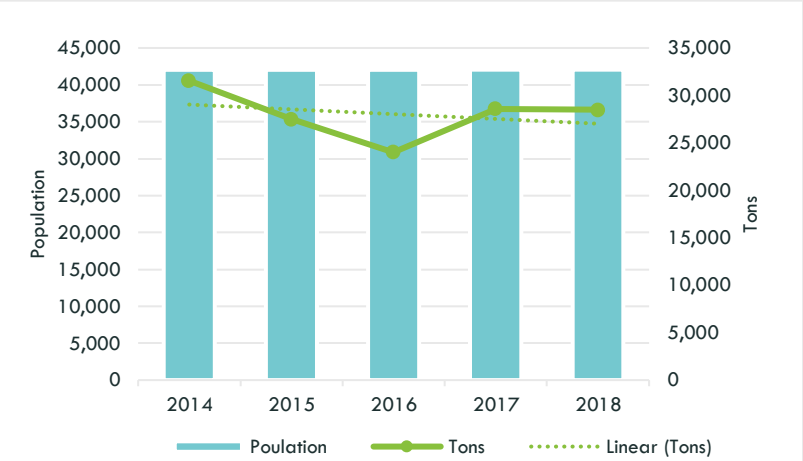


Figure D-3 Historical Disposal and Population

Table D-5a: Actual Residential/Commercial Disposal Compared to 2016 Plan Projections

Year	Actual Disposal (tons)	2016 Plan Projected Disposal (tons)
2014	31,547	24,683
2015	27,507	25,011
2016	24,004	25,055
2017	28,593	25,100
2018	28,487	25,144

Source(s):

[5] https://www.washingtonpost.com/news/wonk/wp/2017/01/27/u-s-economy-expanded-1-9-percent-in-fourth-quarter-2016-gdp-up-1-6-percent/

Actual Disposal: 2014, 2015, 2016, 2017, and 2018 Annual District Review Forms
2016 Plan Projected Disposal Source: 2016 Clinton County SWMD Plan

The SWMD's residential and commercial per capita disposal was compared to other districts' in Ohio with similar populations as shown in Figure D-4. On average, the residential and commercial disposal for compared districts was 3.60 pounds per person per day. The SWMD's residential and commercial per capita disposal is in line at 3.67 pounds per person per day. Clinton County's per capita disposal falls between Ohio's 2018 statewide average of 4.82 pounds per person per day and the national average of 2.31 pounds per person per day[6].

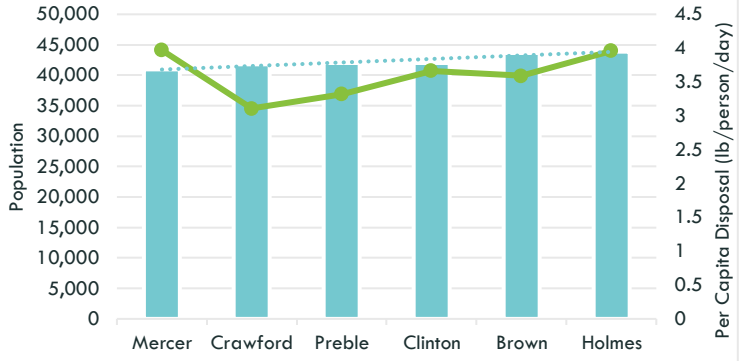


Figure D-4 Benchmark Per Capita Disposal

2. Industrial Waste

Industrial waste is not a major component of the SWMD's disposal stream, accounting for less than 10% of total disposal annually over the past 5 years. As shown in Figure D-5 industrial disposal has declined from 2014 to 2018 by nearly 50%. In 2014 industrial disposal was 2,271 tons compared to 1,265 tons in 2018. Businesses have taken steps to look at their waste streams to see how, and if, materials can be re-used or re-purposed to eliminate waste disposal. Even as historical manufacturing employment has held steady, these operational reviews, changes, and sustainability movements resulted in less industrial disposal.

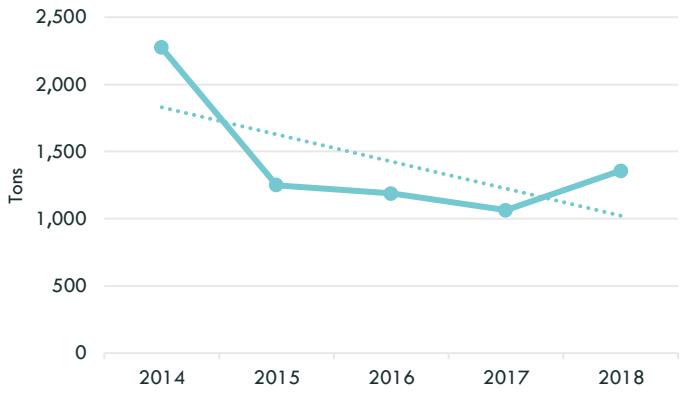


Figure D-5 Industrial Waste Diposal Analysis

3. Excluded Waste

Excluded waste has contributed between 14 to 30% of total disposal annually in the SWMD over the past 5 years. Since 2014, disposal of excluded waste has increased from 5,433 tons per year to 9,307 tons per year. Over the past few years Clinton County has seen rural renewal and economic development projects expand which helps explain the increased excluded waste disposal. Excluded

[6] US EPA. "Advancing Sustainable Materials Management: 2017 Fact Sheet." November 2019.

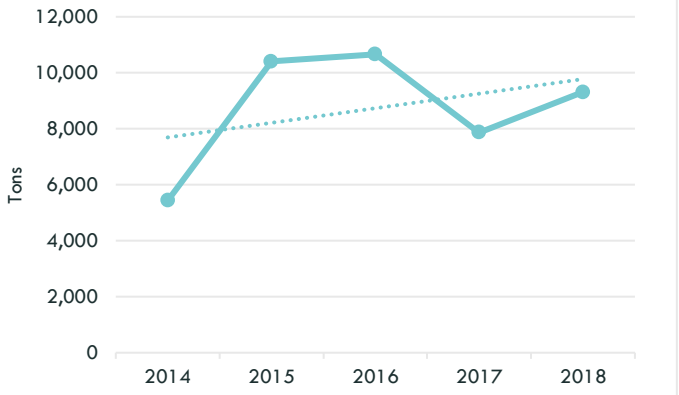


Figure D-6 Excluded Waste Diposal Analysis

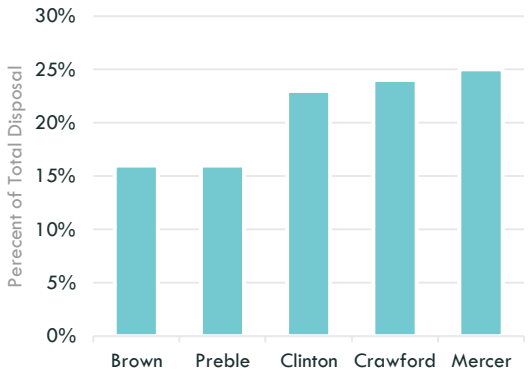


Figure D-7 Benchmark Excluded Waste Disposal

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 and over 90% is recorded as disposed in the Wilmington Sanitary Landfill. It should also be noted that excluded waste is fee exempt.

Since excluded waste is roughly a quarter of waste disposed and it's demonstrating an increased trendline, the SWMD analyzed excluded waste in other rural counties. Comparing the percent exempt waste contributes to total waste disposal, the SWMD falls within the average. Figure D-7 shows the averaging percent of excluded disposal from years 2014 to 2018 compared to the other counties the SWMD.

C. Disposal Projections

Table D-6 Waste Disposal Projections

Year	Residential/ Commercial Solid Waste	Industrial Solid Waste	Excluded Waste	Total Waste	Waste Transferred (as part of Total Disposal)	Waste Transferred (as part of Total Disposal)
	Weight (tons)	Weight (tons)	Weight (tons)	Weight (tons)	Weight (tons)	Percent 2.16%
2018	28,487	1,356	9,307	39,150	844	
2019	29,054	1,356	9,307	39,717	856	
2020	29,066	1,356	9,307	39,729	856	
2021	29,077	1,356	9,307	39,740	857	
2022	29,089	1,356	9,307	39,752	857	
2023	29,100	1,356	9,307	39,764	857	
2024	29,112	1,356	9,307	39,775	857	
2025	29,124	1,356	9,307	39,787	858	
2026	29,135	1,356	9,307	39,799	858	
2027	29,147	1,356	9,307	39,810	858	
2028	29,159	1,356	9,307	39,822	858	
2029	29,170	1,356	9,307	39,834	859	

Year	Residential/ Commercial Solid Waste	Industrial Solid Waste	Excluded Waste	Total Waste	Waste Transferred (as part of Total Disposal)	Waste Transferred (as part of Total Disposal)
	Weight (tons)	Weight (tons)	Weight (tons)	Weight (tons)	Weight (tons)	Percent 2.16%
2030	29,182	1,356	9,307	39,845	859	
2031	29,194	1,356	9,307	39,857	859	
2032	29,205	1,356	9,307	39,869	859	
2033	29,217	1,356	9,307	39,880	860	
2034	29,229	1,356	9,307	39,892	860	
2035	29,240	1,356	9,307	39,904	860	
2036	29,252	1,356	9,307	39,915	860	

Source(s) of Information: 2018 Ohio EPA ADR Review Form.
Sample Calculation: Residential/Commercial Solid Waste = (365 days * population * 3.78 lbs/person/day) / 2000 lbs/ton
Industrial Solid Waste = 2018 tonnage held constant
Total Waste = Residential/Commercial Solid Waste + Industrial Solid Waste

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. After conducting the historical analysis and considering factors that could change historical disposal trends, waste disposal for the planning period is projected in Table D-6.

Transfer projections are a constant percentage of total waste disposed. The percentage used is the percentage of total waste disposed in the reference year that was routed through transfer facilities prior to being taken to a landfill (which is 2.16%). Based on analysis of available capacity for disposing of the SWMD's waste, the SWMD did not identify any reasons to suspect that the amount of waste routed through transfer stations will change.

1. Residential/Commercial Waste Projections

   Residential and commercial waste disposal in the County ranged between 28,000 and 32,000 tons per year with the exception of 2016 where disposal dipped to 24,000 tons. There is not a clear explanation as to why disposal dipped in 2016, and other than 2016, disposal has been fairly steady. Disposal projections are based on the average annual per capita disposal of 3.78 for years 2014, 2015, 2017, and 2018.

2. Industrial Waste Projections

   Industrial waste disposal declined from 2014 through 2017 and then increased from 2017 to 2018. The Ohio 2020 Job's Outlook report estimates a 2.6% decline in industrial employment from 2016 through 2026. Given the relatively small employment decline, industrial disposal is projected to remain constant from 2018 through the planning period.

3. Excluded Waste Projections

   Excluded Waste has not exhibited any clear pattern over the past 5 years. Without any insights into how excluded waste may change over time, this waste stream is projected to remain at 2018 levels through the planning period.

APPENDIX E RESIDENTIAL/COMMERCIAL RECOVERY DATA

Appendix E provides an inventory of materials recovered from the residential/commercial sector in the reference year, adjusted quantities for double counting, total adjusted quantities of material recovered in the reference year, historical quantities recovered and projected quantities to be recovered.

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 Commercial Survey Results

NAICS[1]	Appliances/ "White Goods"	Electronics	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Yard Waste	Dry Cell Batteries	Used Oil	Fluorescent	
32							0	1	98	0									
42								7	0			1,934							
44			4			1		3		0		5					2		
45			0			33	33				75			67		2	33		
48																			
49																			
52																			
54		0						0	0	0					0				
56																			
62			0					30								0			
72																			
81						0	0												
Other:		10	0			0	0	0	0	0									
Other: Blank			16			7	2		10					2					
Unadjusted Total	0	10	20	0	0	41	36	41	108	0	75	1,939	0	69	0	2	35	3	2,380
Adjustments		**0**				7	3							69				3	-82
Adjusted Total	**0**	**10**	**20**	**0**	**0**	**34**	**33**	**41**	**108**	**0**	**75**	**1,939**	**0**	**0**	**0**	**2**	**35**	**0**	**2,298**

1 NAICS stands for The North American Industry Classification System and is used by the United States, Canada, and Mexico to classify businesses by industry

Source(s) of Information: District surveys conducted to gather 2018 recycling data.
Sample Calculation:
Unadjusted Total – Adjustments = Total
10 – 0 = 10
Assumptions: None

Table E-1 is reserved for commercial data obtained from SWMD survey efforts. The SWMD issued a recycling survey to capture 2018 diversion data for the commercial sector. Adjustments were needed to exclude recycling that was reported from processors.

Table E-2 Data from Other Recycling Facilities

Program and/or Source of Materials/Data	Appliances/"White Goods"	Electronics	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Yard Waste	Scrap Tires	
Buybacks																	
None																	
Scrap Yards																	
1 Scrap Yard	722		20			1,548	201										
Brokers																	
None																	
Processors/MRF's																	
Rumpke Center City Recycling - Hamilton County					0	0	0	1	0	0		0					
Rumpke Elmwood Recycling Cincinnati					0	0	0	14	0	0		1					
Rumpke Recycling - Dayton			61		16	11	6	19	254	46		0					
Rumpke Recycling - Dayton					28	19	11	939	457	83		0					
Unadjusted Totals	722	0	20	0	43	1,577	219	973	711	130	0	1	0	0	0		**4,395**
Adjustments					16	11	6	1	254	46						**0**	334
Adjusted Totals	722	0	**20**	**0**	**27**	**1,566**	**213**	**972**	**457**	**84**	**0**	**1**	**0**	**0**	**0**		4,061

Source(s) of Information: 2017 Ohio EPA Material Recovery Facility and Commercial Recycling Data. SWMD surveys to gather 2017 data for Buybacks, Scrap Yards, and Brokers.
*Hauler reports include commercial clients. This is not all residential.
Sample Calculation:
Unadjusted Total – Adjustments = Total
722 – 0 = 722
Assumptions: None

Quantities reported in Table E-2 were obtained from buyback surveys and Ohio EPA reports on processors. Processors capture the recyclables and process them to get them ready to be recycled. These are typically buybacks, processors and MRFs. Adjustments were made to remove curbside recyclable tonnages from MRF data to avoid double counting.

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

Ohio EPA Data Source	Glass	Plastic	Newspaper	Cardboard	Mixed Paper	Nonferrous	Ferrous	Wood	Food: Compost	Food: Other	Commingled	Other	
Walmart Recycling in Ohio	0	16	0	418	2	0	0	0	0		0	95	
Lowe's Companies, Inc.	0	0	0	39	0	3	47	77	0		0	0	
Dollar General Corporation	0	0	0	58	1	0	0	0	0		0	0	
Big Lots Corporation	0	0	0	14	0	0	0	0	0		0	0	
Kroger	0	59	0	614	11	0	0	0	0		0	7	
United States Postal Service	0	1	0	3	42	0	0	0	0		0	0	
Unadjusted Total	0	76	0	1,145	56	3	47	77	0	0	0	102	1,506
Adjustments								77					77
Adjusted Total	**0**	**76**	**0**	**1,145**	**56**	**3**	**47**	**0**	**0**	**0**	**0**	**102**	**1,429**

Source(s) of Information: 2018 Ohio EPA Material Recovery Facility and Commercial Recycling Data
Sample Calculation:
Unadjusted Total – Adjustments = Total

Quantities reported in Table E-3 were obtained from Ohio EPA reports. Wood was adjusted by 77 to avoid double counting.

Table E-4 presents quantities diverted through programs and services in the reference year. This table includes all residential/commercial programs and services through which materials being credited to total diversion were recovered. Adjustments exclude recycling that was reported from processors shown on Table E-2 and other data collected. Most materials collected from programs are recycled to a processor listed on Table E-2, thus are credited to the processor to avoid double counting recycling quantities. To remove double counting, adjustments were made to exclude wood that was reported on a commercial survey. Scrap tires collected from the scrap tire collection events are reported with Ohio EPA Scrap Tire data, thus data was removed from the scrap tire collection events to avoid double counting.

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

Other Programs or Sources of Data	Appliances/ "White Goods"	HHW	Used Motor Oil	Electronics	Scrap Tires	Dry Cell Batteries	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Yard Waste	*Unadjusted Total*	*Adjustments*	*Adjusted Total*
Curbside Recycling Services									16	11	6	1	254	46						334		334
Drop-off Recycling Locations									112	15	7	46	336	31						547		547
Wilmington City Compost Site								159											1,118	1,277		1,277
Ohio EPA Scrap Tire Data					1,301															1,301	51	1,250
Scrap Tire Collection Program					51															51		51
Fiber Collection Program												67	128							195		195
Christmas Trees																0				0		0
Unadjusted Total	0	0	0	0	1,352	0	0	159	128	26	13	114	717	77	0	0	0	0	1,118	3,705	51	3,655
Adjustments					51															51		
Adjusted Total	0	0	0	0	1,301	0	0	159	128	26	13	114	717	77	0	0	0	0	1,118	3,655		

Source(s) of Information: Ohio EPA 2018 Compost Facility Data Report. District program data for 2018.
Sample Calculation:
Unadjusted Total – Adjustments = Total
Assumptions: None

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

Material	Quantity (tons)
Appliances/ "White Goods"	722
Household Hazardous Waste	0
Used Motor Oil	35
Electronics	10
Scrap Tires	1,301
Dry Cell Batteries	2
Lead-Acid Batteries	40
Food	159
Glass	156
Ferrous Metals	1,674
Non-Ferrous Metals	262
Corrugated Cardboard	2,272
All Other Paper	1,337
Plastics	237
Textiles	75
Wood	1,940
Rubber	0
Commingled Recyclables (Mixed)	0
Yard Waste	1,118
Other (Aggregated)	102
Total	11,443

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

The District diverted 11,443 tons from the residential/commercial sector. Table E-5 reports quantities of each material diverted. Cardboard, wood and ferrous metals are the three largest material categories recycled in the reference year.

Table E-6 Quantities Recovered by Program/Source

Program/Source of R/C Recycling Data	Quantities (Tons)
Commercial Survey	2,298
Data from Other Recycling Facilities	4,061
Ohio EPA Commercial Retail Data	1,429
Curbside Recycling Services	334
Drop-off Recycling Locations	548
Food and Yard Waste Management Activities	1,277
Ohio EPA Scrap Tire Data	1,250
Scrap Tire Collection Program	51
Fiber Collection Program	195
Christmas Tree	0

Program/Source of R/C Recycling Data	Quantities (Tons)
Total	11,443

Source(s) of Information: Tables E-1, E-2, E-3 and E-4
Assumptions: To remove double counting, adjustments were made. Wilmington curbside recycling tonnage of 334 is included in Ohio EPA Commercial Retail Data tonnage. Scrap tire collection event data is subtracted out of reported scrap tire from the Ohio EPA to highlight the tons collected from that specific program.

Table E-6 reports tonnages diverted for each program/source. This table attempts to attribute recycling to a program for data analyzation shown in Tables E-7 through E-7a6.

B. Historical Recovery

The data analysis in Tables E-7 through E-7a6 shows non-linear programmatic recycling data over the time period analyzed. Diversion demonstrates an average of 12,241 tons. Based on recovery data obtained, the SWMD recovers approximately 1.60 pounds per person per day.

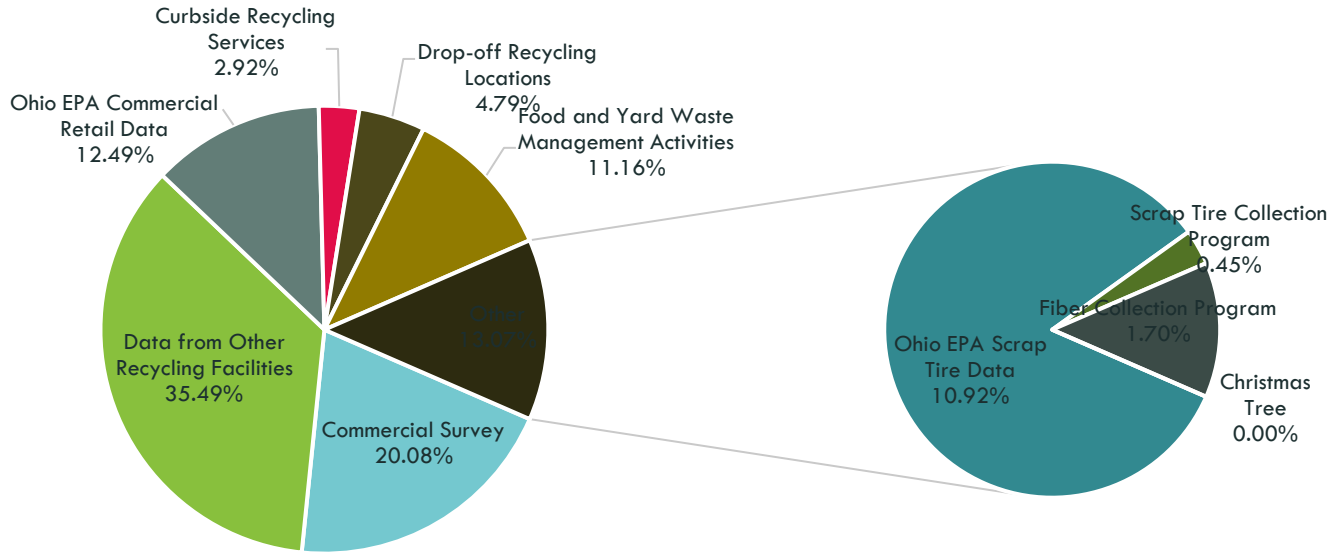


Figure E-1 Recycling by Source

By weight, three programs source the majority of recycling (see Figure E-1). Variations in data from these sources affect the recycling trends. Significant changes are noted in Ohio EPA Commercial Retail data. In 2017, the SWMD received responses from commercial businesses that did not report in 2018 resulting in the decline shown between the two years in the Commercial Survey.

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

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Curbside Recycling Services	Drop-off Recycling Locations	Food and Yard Waste Management Activities	Ohio EPA Scrap Tire Data	Scrap Tire Collection Program	Fiber Collection Program	Christmas Tree	Totals
2014	3,000	4,346	1,514	125	449	723	1,508	29	430	3	12,127
2015	3,336	3,972	808	144	679	1,214	1,324	46	190	2	11,716
2016	5,356	2,702	801	286	603	1,379	1,312	48	180	2	12,668
2017	5,510	3,716	841	78	608	1,313	993	44	147	0	13,250
2018	***2,298***	***4,061***	***1,429***	***334***	***548***	***1,277***	***1,250***	***51***	***195***	***0***	***11,443***

Table E-7a1 Annual Percent Change in Tons Recovered											
2014											
2015	11%	-9%	-47%	15%	51%	68%	-12%	58%	-56%	-28%	-3%
2016	61%	-32%	-1%	99%	-11%	14%	-1%	4%	-5%	3%	8%
2017	3%	38%	5%	-73%	1%	-5%	-24%	-8%	-18%	-100%	5%
2018	***-58%***	***9%***	***70%***	***328%***	***-10%***	***-3%***	***26%***	***17%***	***32%***	***-***	***-14%***

Table E-7a2 Average Percentage Change in Tons Recovered											
	4%	2%	7%	92%	8%	18%	-3%	18%	-12%	-%	1%

Table E-7a3 Annual Change in Tons Recovered											
2014											
2015	336	-374	-706	19	231	491	-184	17	-240	-1	-411
2016	2,020	-1,270	-8	142	-76	165	-12	2	-10	0	953
2017	154	1,013	40	-208	5	-67	-319	-4	-32	-2	581
2018	***-3,212***	***346***	***588***	***256***	***-60***	***-36***	***257***	***7***	***47***	***0***	***-1,807***

Population	Table E-7a4 Annual Per Capita Recovery Rate (pounds/person/day)											
42,038	2014	0.39	0.57	0.20	0.02	0.06	0.09	0.20	0.00	0.06	0.00	1.58
42,038	2015	0.43	0.52	0.11	0.02	0.09	0.16	0.17	0.01	0.02	0.00	1.53
42,038	2016	0.70	0.35	0.10	0.04	0.08	0.18	0.17	0.01	0.02	0.00	1.65
42,038	2017	0.72	0.48	0.11	0.01	0.08	0.17	0.13	0.01	0.02	0.00	1.73
42,055	***2018***	***0.30***	***0.53***	***0.19***	***0.04***	***0.07***	***0.17***	***0.16***	***0.01***	***0.03***	***0.00***	***1.49***

Table E-7a5 Average Per Capita Recovery Rate (pounds/person/day)										
0.51	0.49	0.14	0.03	0.08	0.15	0.17	0.01	0.03	0.00	1.60

Table E-7a6 Average Tons of Material Recovered										
3,900	3,759	1,079	193	577	1,181	1,278	43	228	1	12,241

Sources:
Commercial Survey from District survey efforts

Data from other recycling facilities from Ohio EPA MRF report
Ohio EPA commercial retail data from Ohio EPA MRF report
Yard Waste composted from Annual District Report
Food waste hauled reported from Annual District Report
Ohio EPA scrap tire data from Ohio EPA reports
Specific program data from historical Annual District Reports

To provide additional analysis, the SWMD developed Table E-7a7 to historically benchmark material quantities recovered.

Table E-7a7: Residential/Commercial Historical Materials Recovered

	2015	2016	2017	2018	Correlations
Standard Recyclables					
Corrugated Cardboard	1,090	948	1,693	2,272	Cardboard recovery increased considerably in 2018. A few changes include the handling of cardboard by the Wilmington Sanitary landfill which tripled the amount of cardboard recovered through their program. The other is increased because of 1) commercial business reporting to Ohio EPA that had missed reporting over the past couple years and 2) increased commercial recovery as reported by a MRF processor.
Ferrous Metals	3,475	3,461	3,515	1,674	Recovered tonnages depend on commercial and processor surveys. At times the tonnage is lower than expected, such as reported in 2018. The low diversion reported in 2018 appears to be more of an anomaly since it does not follow the historical trend.
All Other Paper	1,022	823	1,142	1,337	Except for year 2016 (lack of commercial responders reporting), paper recovery is following an increasing trend.
Plastics	120	288	338	237	Not surprising to see fluctuations in plastic recovery. Changing waste stream is adding more plastic in the stream, but the materials are lighter. The major obstacle is the processor only accepts a few types of plastics.
Glass	162	132	149	155	The trendline for recovery is relatively flat.
Wood	2,528	2,931	2,961	1,940	The large decrease in 2018 is due to one processor reporting unusually low wood pallet recovery.
Non-Ferrous Metals	309	372	380	261	Recovered tonnages depend on commercial and processor surveys. At times the tonnage is lower than expected, such as reported in 2018. The low diversion reported in 2018 appears to be more of an anomaly since it does not follow the historical trend.
Commingled Recyclables (Mixed)	194	363	155	0	Commingled recovery trend is difficult to follow. It depends on how the MRF processor reports the data - either as commingled or per commodity.
Subtotal	8,902	9,321	10,336	7,878	
Organics					
Food	319	268	213	159	Food waste diversion is trending down. This data is collected from Ohio EPA reports. The SWMD hopes the downward trend is because measures to reduce food waste and donations are increasing. These types of activities are difficult to track but in more recent years the larger chains such as Walmart and Kroger are implementing programs to follow the food waste hierarchy pyramid.
Yard Waste	894	1,113	3,591	1,118	Fluctuations are expected as it is weather/storm dependent. Year 2017 shows an unusually large report. Tornado/storms hit the region in late summer of 2016[7]. This could be reporting from clean up activities.
Subtotal	1,214	1,381	3,805	1,278	
Hard to Recycle Materials					

[7] https://www.weather.gov/iln/events

	2015	2016	2017	2018	Correlations
Scrap Tires	1,369	1,359	1,002	1,301	Scrap tires are historically one of the largest material categories recovered for recycling. Data reporting is required by Ohio EPA.
Appliances/ "White Goods"		-	-	722	Fluctuation depends on whether the survey responders identified appliances separately from the ferrous scrap.
Other (Aggregated)	89	96	99	102	
Textiles	87	390	390	75	Textile recycling is reported by a local nonprofit. Reported diversion has fluctuated through the years.
Used Motor Oil	2	32	32	35	Relatively consistent when responses to surveys are received.
Lead-Acid Batteries	28	35	35	39	Depends on survey response from surveyed businesses.
Household Hazardous Waste	-	-	-	-	
Electronics	21	28	28	10	Electronic recycling is reported by a local nonprofit that accepts computers and electronics. In 2018, the reported totals declined by more than 50%.
Dry Cell Batteries	-	0.05	0.05	2	
Rubber	-	-	-	-	
Subtotal	1,598	1,963	1,567	2,288	
Total Tons	11,714	12,666	15,708	11,443	Average recovery is 12,241 tons and demonstrates a 1% decrease from 2014 to 2018.

Throughout the state and nation, many have seen a decline in recycling tonnages because of evolving materials. The collection of some materials has changed dramatically especially in curbside single stream collection systems. Societal and lifestyle trends have fundamentally changed the composition and type of materials in the waste stream such as aseptic/cartons, bulky rigid HDPE plastics, tubs and lids (Nos. 2, 4 and 5 plastics). These materials are becoming more prevalent in the waste stream. This lighter feedstock is taking the place of denser printed materials and consumer packaging. The volume of a ton has increased with the loss of ton density. There may be more volume, but it weighs less. Plus, as manufacturers seek to use less energy and materials for greater savings along the production and distribution chains, the weight of lighter feedstock is also decreasing. Essentially recycling programs will need to collect more volume in order to maintain tonnages.

Survey Response impacts the tonnages reported on a yearly basis. This is the major reason for the fluctuations seen on Table E-7a7. Data is only as good as the response.

C. Residential/Commercial Recovery Projections

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

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Curbside Recycling Services	Drop-off Recycling Locations	Food and Yard Waste Management Activities:	Ohio EPA Scrap Tire Data	Scrap Tire Collection Program	Fiber Collection Program	Christmas Tree	Totals
2018	***2,298***	***4,061***	***1,429***	***334***	***548***	***1,277***	***1,250***	***51***	***195***	***0***	***11,443***
2019	3,900	3,759	1,079	334	577	1,181	1,278	43	55	0	12,208
2020	3,900	3,759	1,079	334	577	1,181	1,278	43	55	0	12,208
2021	3,900	3,759	1,079	334	577	1,181	1,278	43	55	0	12,208
2022	4,000	3,759	1,079	334	577	1,181	1,278	43	55	0	12,308
2023	4,100	3,759	1,079	334	577	1,181	1,278	43	55	0	12,408
2024	4,200	3,759	1,079	334	577	1,181	1,278	43	55	0	12,508
2025	4,300	3,759	1,079	334	577	1,181	1,278	43	55	0	12,608
2026	4,400	3,759	1,079	334	577	1,181	1,278	43	55	0	12,708
2027	4,500	3,759	1,079	334	577	1,181	1,278	43	55	0	12,808
2028	4,600	3,759	1,079	334	577	1,181	1,278	43	55	0	12,908
2029	4,700	3,759	1,079	334	577	1,181	1,278	43	55	0	13,008
2030	4,800	3,759	1,079	334	577	1,181	1,278	43	55	0	13,108
2031	4,900	3,759	1,079	334	577	1,181	1,278	43	55	0	13,208
2032	5,000	3,759	1,079	334	577	1,181	1,278	43	55	0	13,308
2033	5,100	3,759	1,079	334	577	1,181	1,278	43	55	0	13,408
2034	5,200	3,759	1,079	334	577	1,181	1,278	43	55	0	13,508
2035	5,300	3,759	1,079	334	577	1,181	1,278	43	55	0	13,608
2036	5,400	3,759	1,079	334	577	1,181	1,278	43	55	0	13,708

Sources:
Years 2018 data sources: Commercial Survey from District survey efforts, Data from other recycling facilities from Ohio EPA MRF report, Ohio EPA commercial retail data from Ohio EPA MRF report, Ohio EPA compost data from Ohio EPA Compost report (includes food waste), Ohio EPA scrap tire data from Ohio EPA reports, Specific program data from historical Annual District Reports

Appendix I calls out the programs the SWMD will implement to increase recovery. "Commercial Survey" is expected to return additional data increasing the recovery about 100 tons per year. Because of the minimal fluctuation in overall tonnages recovered, estimates from all other sources/programs will hold at the 5-year average through the planning period.

APPENDIX F INDUSTRIAL WASTE REDUCTION AND RECYCLING DATA

Appendix F contains an inventory of materials recovered from the industrial sector in the reference year, adjusts quantities for double counting, calculates total adjusted quantities of material recovered, analyzes historical quantities recovered and projects quantities to be recovered.

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[1]	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Ash	Non-Excluded Foundry Sand	Flue Gas Desulfurization	Other1: Acrylic	Other2: Zinc Shot	Other3: ABS Tubes	Other4: Chipboard	Other5: Sludge	Other6: Salt Cake	Other7: Wood/Plastic Composition	
22																						
31																						
32	0	0	142	25	85	0	2,372	0	27	0	0	0	0	0	0	0	0	0	0	0	9,000	
33	0	0	420	108	1,009	2	87	0	2	0	1	0	0	0	26	0	4	101	9	0	0	
Other			5,443	21,805	80	6	55	60	182	0	0	0	0	0	0	0	0	0	240	555	0	
Unadjusted Total	0	0	6,005	21,938	1,174	8	2,514	60	211	0	1	0	0	0	26	0	4	101	249	555	9,000	41,847
Adjustments					148	6	0.075		27		1											182
Adjusted Total	**0**	**0**	**6,005**	**21,938**	**1,026**	**2**	**2,514**	**60**	**184**	**0**	**0**	**0**	**0**	**0**	**26**	**0**	**4**	**101**	**249**	**555**	**9,000**	**41,665**

1 NAICS stands for The North American Industry Classification System and is used by the United States, Canada, and Mexico to classify businesses by industry
Source(s) of Information: Calendar year 2018 survey data as reported by industrial businesses.

Table F-1 accounts for material credited for waste reduction and recycling as reported by industrial businesses. In some instances, an industrial business did not respond to the reference year survey, but did respond to a previous survey. 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 and to remove double counting.

Data on Table F-1 is organized by North American Industry Classification System (NAICS). Manufacturing industries are classified under sectors 31-33. Table F-1 aggregates the quantities from all returned surveys for an NAICS code. In surveying the industrial sector, the SWMD mailed 164 postcards and 31 surveys and received 14 responses for a 17% response rate.

Table F-2 Data from Other Recycling Facilities

Program and/or Source of Materials/Data	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Ash	Non-Excluded Foundry Sand	Flue-Gas Desulfurization Waste	
Buybacks															
none															
Scrap Yards															
none															
Brokers															
none															
Processors/MRF's															
Rumpke Center City Recycling - Hamilton County		0	0	0	1	0	0	0	0	0	0	0	0	0	
Rumpke Recycling - Dayton		0	0	0	71	0	0	0	0	0	0	0	0	0	
Pallet Recycler									295						
Unadjusted Totals	0	0	0	0	72	0	0	0	295	0	0	0	0	0	**367**
Adjustments															**0**
Adjusted Totals	**0**	**0**	**0**	**0**	**72**	**0**	**0**	**0**	**295**	**0**	**0**	**0**	**0**	**0**	**367**

Source(s) of Information:
Calendar year 2018 survey data as reported by industrial businesses.
Ohio EPA Material Recovery Facility data 2018

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

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

Source(s) of Information:
Calendar year 2018 survey data as reported by industrial businesses.
Ohio EPA Material Recovery Facility data 2018

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

Material	Quantity (tons)
Food	0
Glass	0
Ferrous Metals	6,005
Non-Ferrous Metals	21,938
Corrugated Cardboard	1,097
All Other Paper	2
Plastics	2,514
Textiles	60
Wood	479
Rubber	0
Commingled Recyclables (Mixed)	0
Ash	0
Non-Excluded Foundry Sand	0
Flue Gas Desulfurization	0
Other (Aggregated)	9,936
Total	**42,032**

Source(s) of Information:
Calendar year 2018 survey data as reported by industrial businesses.
Ohio EPA Material Recovery Facility data 2018

The SWMD diverted 42,032 tons from the industrial sector. Table F-4 reports quantities of each material diverted.

Table F-5 Quantities Recovered by Program/Source

Program/Source of Industrial Recycling Data	Quantity (Tons)
Industrial survey	41,665
Data from other recycling facilities	367
Total	**42,032**

Source(s) of Information:
Calendar year 2018 survey data as reported by industrial businesses.
Ohio EPA Material Recovery Facility data 2018

Table F-5 reports quantities diverted for each program/source.

B. Historical Recovery

Table F-6 Historical Industrial Recovery by Program/Source

Year	Industrial survey	Data from other recycling facilities	Totals
2014	139,576	68	139,644
2015	139,571	0	139,571
2016	139,941	45	139,986
2017	22,485	45	22,530
2018	41,665	367	42,032

Table F-6a1 Annual Percentage Change in Tons Recovered

2014			
2015	0%	-34%	0%
2016	0%	0%	0%
2017	-84%	0%	-84%
2018	85%	717%	87%

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

0%	154%	1%

2014			
2015	-5	-68	-73
2016	370	45	415
2017	-117,456	0	-117,456
2018	19,180	322	19,502

Average Tonnage Change/Year

-24,478	75	-24,403

Average Tons of Material Over 5 Years

96,648	105	96,752

Source(s) of Information: Annual District Reports for 2014 through 2018

Data from the industrial sector is obtained from surveys and Ohio EPA MRF data, as seen from Table F-6. An industrial survey was conducted to obtain 2018 data. Industrial recycling is dependent on survey responses. A large decrease in recovery occurred in 2017 when an industry responder reported nearly a 90% reduction in the amount of plastics/wood composite material recycled. Although not entirely certain, it is possible the tonnage reported prior to 2017 could have been in error.

Additionally, the low response rate means that any change in industries reporting can have a huge impact on the recycling tonnages. For example, if a large industrial recycler reports intermittently, reported recycling tonnages may swing up or down. The industrial sector has been challenging for the SWMD to receive industry responses to recycling surveys. Figure F-1 shows manufacturing the number of establishments and employment declining in the county. On average, the SWMD collected roughly 96,693 tons of material between 2014 and 2018.

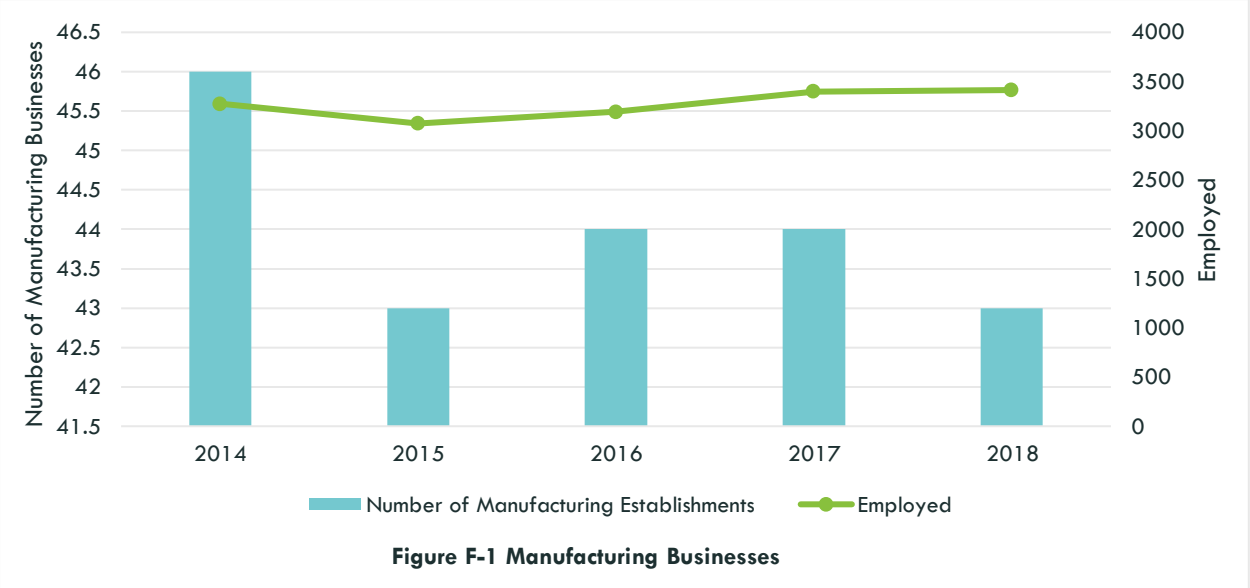


Figure F-1 Manufacturing Businesses

C. Industrial Recovery Projections

Table F-7 Industrial Recovery Projections by Program/Source

Year	Industrial survey	Data from other recycling facilities	Totals
2018	**41,665**	**367**	**42,032**
2019	32,075	105	32,180
2020	32,364	106	32,470
2021	32,655	107	32,762
2022	32,949	108	33,057
2023	33,245	109	33,354
2024	33,545	110	33,654
2025	33,847	111	33,957
2026	34,151	112	34,263
2027	34,459	113	34,571
2028	34,769	114	34,882
2029	35,082	115	35,196
2030	35,397	116	35,513
2031	35,716	117	35,833
2032	36,037	118	36,155
2033	36,362	119	36,481
2034	36,689	120	36,809
2035	37,019	121	37,140
2036	37,352	122	37,475

Source(s) of Information: Table F-6

Sample Calculations:
Industrial survey annual increases of 0.09%.
Industrial Survey annual projection: 32,364 tons * 0.009 + 32,364 tons = 32,655 tons projected recycled in 2021

The Clinton County profile[8] shows manufacturing businesses in the County decreased a total of 6.5% from 2012 to 2018, however average employment increased by 8%. Additionally, Ohio Department of Job and Family Services predicts manufacturing employment in the West Region of Ohio (region Clinton County falls under) will decline 5.3% from 2016 to 2026[9]. Despite the historical decline and projected decline in employment, diversion increased in 2018. Manufacturing follows production which follows the economy more than employment. Economic predictions are challenging. Prior to COVID-19 pandemic which began in the US in March 2020, predictions expected a gross domestic product growth of 1.7% annually through 2023. Taking this into consideration, the SWMD is conservatively estimating industrial sector diversion to increase at half the predicted growth domestic product rate. Table F-7 predicts a 0.9% annual change through the end of the planning period.

[8] Office of Research. "Ohio County Profiles – Clinton County" 2018.
[9] Ohio Department of Job and Family Services. "2026 Job Outlook, JobsOhio Network West Ohio". July 2019.

APPENDIX G WASTE GENERATION

A. Historical Year Waste Generated

Table G-1 Reference Year and Historical Waste Generated

Year	Population	Residential/ Commercial				Industrial			Excluded (tons)	Total (tons)
		Disposed (tons)	Recycled (tons)	Generated (tons)	Per Capita Generated (ppd)	Disposed (tons)	Recycled (tons)	Generated (tons)		
2014	42,038	31,547	12,127	43,674	5.69	2,271	139,644	141,915	5,433	191,022
2015	42,038	27,507	11,716	39,223	5.11	1,251	139,571	140,822	10,403	190,448
2016	42,038	24,004	12,668	36,672	4.78	1,188	139,986	141,174	10,659	188,505
2017	42,038	28,593	13,250	41,843	5.45	1,064	22,530	23,594	7,864	73,301
2018	**42,055**	**28,487**	**11,443**	39,930	5.20	**1,356**	***42,032***	***43,388***	**9,307**	**92,624**

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 generation is 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 SWMD. Waste generation declined significantly in 2017, also shown in the graph on Figure G-1. As mentioned previously the industrial recycled reports were more than likely an error due to one survey responder. The trend from 2016 to 2017 shows a slight increase in waste generation. The industrial recycled tons are impacting the increase in waste generation. Residential/commercial waste generation has historically remained relatively flat.

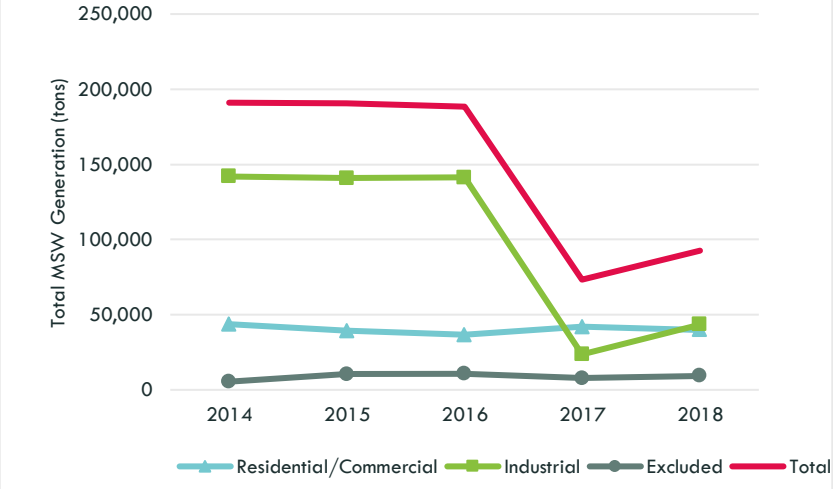


Figure G-1 Historical Waste Generated

National MSW per capita waste generation has held between 4.4 pounds per person per day and 4.53 pounds per person per day from 2013 to 2017 (2018 was not published as of April 2020). Benchmarked to the SWMD historical data, the SWMD's residential/commercial waste generation is higher and does not follow the national trend. The SWMD's

per capita generation has more fluctuation as shown in Figure G-2. This is due to fluctuations in both recycling and waste disposal.

The SWMD's per capita generation is 5.20 pounds per person per day. Based on the per capita disposal rate, the residents and businesses in Clinton County are landfilling more than recovering. As mentioned in Appendix D the per capita disposal rate is 3.71 pounds per person per day. Which means residents and businesses are disposing over 3 pounds of trash a day.

Compared to SWMDs exhibiting similar sized population base, as shown in Figure G-3, the SWMD's per capita generation rate is consistent with these other SWMDs. Similarly, all compared SWMDs share disposal rates over 3 pounds per person per day. Logan County SWMD demonstrates the highest generation rate, but is recovering more per person than the other SWMDs. The challenge facing the SWMD is to find ways to reduce waste generation as well as characterizing landfilled waste to identify diversion methods to lower the disposal rate.

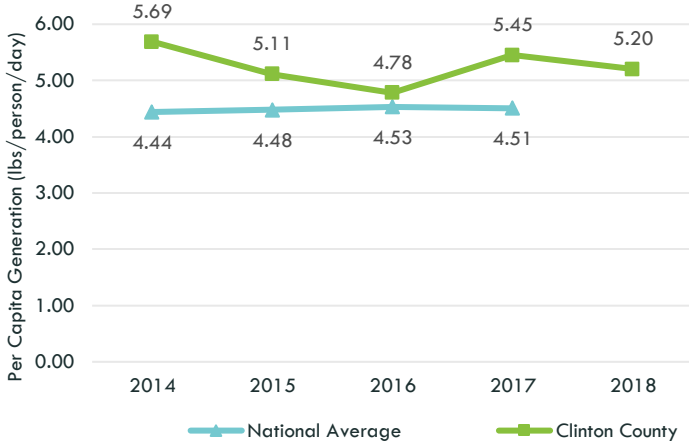


Figure G-2 Residential/Commercial Per Capita Generation

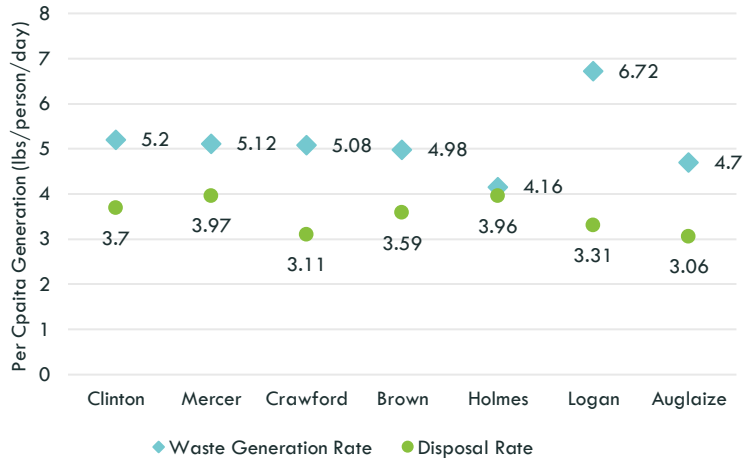


Figure G-3 Benchmark Per Capita Rates

As compared to the State of Ohio, Clinton County SWMD's reference year residential/commercial generation falls below Ohio's generation of 6.85 pounds per person per day (2018).

Industrial generation had a steep drop in 2017. A major contributor that influences waste disposal is recycling reports from industries. Diversion fluctuated due to survey response.

B. Generation Projections

Table G-2 Generation Projections

Year	Population	Residential/ Commercial				Industrial			Excluded Waste (tons)	Total (tons)
		Disposal (tons)	Recycle (tons)	Generation (tons)	Per Capita Generation (ppd)	Disposal (tons)	Recycle (tons)	Generation (tons)		
2018	***42,055***	***28,487***	***11,443***	***39,930***	***5.20***	***1,356***	***42,032***	***43,388***	***9,307***	***92,624***
2019	42,072	29,054	12,206	41,260	5.37	1,356	32,180	33,536	9,307	84,104
2020	42,089	29,066	12,206	41,272	5.37	1,356	32,470	33,826	9,307	84,405
2021	42,105	29,077	12,206	41,284	5.37	1,356	32,762	34,118	9,307	84,709
2022	42,122	29,089	12,306	41,395	5.38	1,356	33,057	34,413	9,307	85,115
2023	42,139	29,100	12,406	41,507	5.40	1,356	33,354	34,710	9,307	85,524
2024	42,156	29,112	12,506	41,619	5.41	1,356	33,654	35,011	9,307	85,936
2025	42,173	29,124	12,606	41,730	5.42	1,356	33,957	35,313	9,307	86,351
2026	42,190	29,135	12,706	41,842	5.43	1,356	34,263	35,619	9,307	86,768
2027	42,207	29,147	12,806	41,954	5.45	1,356	34,571	35,927	9,307	87,188
2028	42,224	29,159	12,906	42,065	5.46	1,356	34,882	36,239	9,307	87,611
2029	42,240	29,170	13,006	42,177	5.47	1,356	35,196	36,553	9,307	88,036
2030	42,257	29,182	13,106	42,289	5.48	1,356	35,513	36,869	9,307	88,465
2031	42,274	29,194	13,206	42,400	5.50	1,356	35,833	37,189	9,307	88,896
2032	42,291	29,205	13,306	42,512	5.51	1,356	36,155	37,511	9,307	89,330
2033	42,308	29,217	13,406	42,624	5.52	1,356	36,481	37,837	9,307	89,767
2034	42,325	29,229	13,506	42,735	5.53	1,356	36,809	38,165	9,307	90,207
2035	42,342	29,240	13,606	42,847	5.54	1,356	37,140	38,496	9,307	90,650
2036	42,359	29,252	13,706	42,959	5.56	1,356	37,475	38,831	9,307	91,096

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

APPENDIX H STRATEGIC EVALUATION

The state solid waste management plans establish recycling and reduction goals for solid waste management districts. At the time of the SWMD's 2016 Plan Update, Ohio had issued a 2009 State Plan but was lacking a new Format for solid waste management districts to follow. While it was encouraged districts incorporate 2009 State Plan goals it was not a requirement. The SWMD's 2016 Plan demonstrated compliance with the 2001 State Plan but incorporated elements of education and outreach that were described in the 2009 State Plan. Programs and strategies approved by Ohio EPA in the 2016 Plan are evaluated in this Appendix H. In this Appendix, the Board completed a strategic process of evaluating its reduction and recycling efforts. To do this, the status of the reduction and recycling efforts were evaluated in the context of factors presented in the 14 analyses described in Format 4.0. The strategic program evaluation was performed on the following:

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

1. Residential Recycling Infrastructure Analysis

This evaluation of the SWMD'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. The SWMD'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 network of food rescue (church organizations, etc.) and a donation bank. The SWMD's role instituting this network of available opportunities varies.

a. Evaluation

CURBSIDE

One of the first metrics analyzed is recycling collection infrastructure. There is a lack of curbside service to County residents. Private sector service providers do not offer subscription curbside service to households. Townships or villages would need to contract or franchise for service. The

SWMD is fortunate that the City of Wilmington, the largest population base, operates a curbside recycling program. The City's program provides non-subscription recycling (residents receive the service whether or not they participate). A few villages offered subscription-service by implementing a preferred hauler approach. One example is the Village of Sabina's preferred hauler program. Through this program the preferred hauler provided curbside service. The hauler reported a participation rate of 3-4% in 2015. That program has since ceased.

The SWMD would like to see more curbside programs throughout the County as those programs demonstrate higher recovery and greater convenience. In the 2016 Plan, the SWMD began offering a Curbside Recycling Grant to encourage curbside recycling programs. The Curbside Recycling Grant provides an economic incentive, financial support, to existing or new curbside recycling programs. In 2016, the City of Wilmington applied and received the SWMD's grant. To expand curbside programs, the SWMD approached the second-largest jurisdiction, the Village of Blanchester. Staff provided technical assistance (education, cost analysis, contract assistance, grant writing assistance, face-to-face meetings, etc.) and assisted Blanchester with program design for a curbside recycling program. The program design was a partnership between the City of Wilmington and the Village. The City of Wilmington was set to provide collection service if the Village purchased 65-gallon curbside carts. In 2018, the Village applied for the Ohio EPA's Community Development Grant to purchase the carts. Unfortunately, the Village was not a grant recipient, so the program was placed on hold.

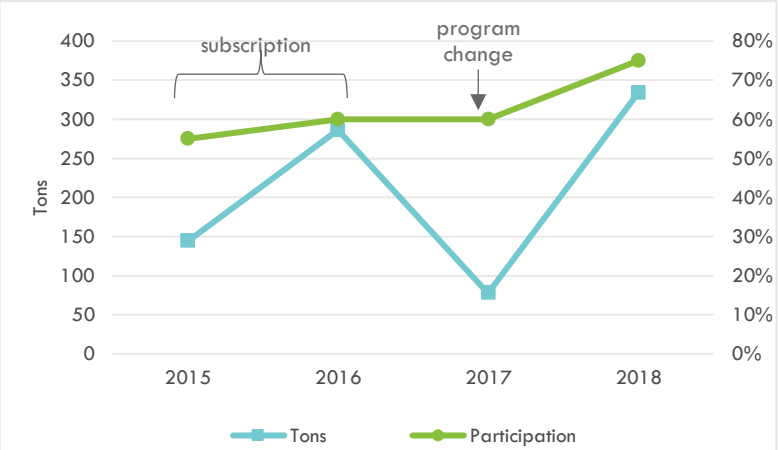


Figure H-1 Curbside Recycling Recovery

Wilmington's curbside recycling program is a service provided by the City of Wilmington. The weekly service is offered at minimal charge, $0.01 per month per household, to residents. Changes to the program are reflected in the measured recycled tons shown in Figure H-1. In 2017, Wilmington received Ohio EPA's Community Development Grant to expand the subscription bin-based curbside program to a cart-based non-subscription program. The grant also allowed for purchase of an automated truck to use for collection. Materials are aggregated until the truck is full and then tipped at the MRF for processing. This grant also changed the program to automatic, i.e., residents do not sign-up for service, they are automatically provided a cart.

A third metric analyzed is the evaluation of pounds of recyclable materials collected per person. According to The Recycling Partnership's (TRP) 2016 study, on average, Americans recycle 143-pounds per person per year via curbside recycling[10]. In their survey, TRP found that high performing communities captured approximately 160 pounds per person per year and that the vast majority of those communities had universal (no sign up required) single-stream cart-based curbside programs with automatic collections. Additionally, high performing communities tend to

[10] The 2016 State of Curbside Report by The Recycling Partnership: https://recyclingpartnership.org/wp-content/uploads/2018/05/state-of-recycling-report-Jan2017.pdf

have local governments that are highly engaged in programs that incentivize waste diversion and recycling, such as mandated recycling with trash services or pay as you throw programs (variable trash rate). For reference, on average American's generate 320 to 400 pounds of recyclables per year per capita.

Wilmington recycled 53.9 pounds per person in 2018. Using the TRP study average as a benchmark, Wilmington falls below the high performing communities. As shown in Table H-1, Wilmington's curbside recovery is comparable to subscription-based programs. The program began in the spring of 2018 and 2019 was the first full year for the new program. Program participation increased in 2018 as well as tonnages. Year 2019 also demonstrated increased tonnages measuring 79.6 pounds per person per year. The City of Wilmington's program is now implementing best practices found in TRP's study (automatic, single-stream, and cart-based). Additionally, Wilmington's program offers a variable trash rate option. The increase in participation will positively add to per capita recovery. Seeing as the program is new, measurements need to be tracked yearly to monitor the success of the program.

Table H-1 Benchmarked Neighboring Communities Curbside Recycling (2018 data)

Community	County	Program	Per capita Recycling (Pounds per Person per Year)	Population
Yellow Spring Village	Greene	Non-Subscription	311.7	3,487
Spring Valley Village	Greene	Non-Subscription	236.5	479
Jamestown Village	Greene	Non-Subscription	185.4	1,993
Bellbrook City	Greene	Non-Subscription	173.8	6,943
Fairborn City	Greene	Non-Subscription	94.8	32,352
Beavercreek Township	Greene	Subscription	93.0	54,737
Xenia City	Greene	Non-Subscription	91.5	25,719
Beavercreek City	Greene	Subscription	85.9	47,391
Xenia Township	Greene	Subscription	57.7	6,384
City of Wilmington	**Clinton**	**Non-Subscription**	**53.9**	**12,401**
Miami Township	Greene	Subscription	45.6	5,034
Cedarville Village	Greene	Non-Subscription	43.1	4,019
Sugarcreek Township	Greene	Subscription	42.4	8,444
Bath Township	Greene	Subscription	20.3	40,581

Source:
2020 Plan Update Greene County
2018 SWMD data for City of Wilmington – 2019 Data for City of Wilmington increased to 79.6 pounds per person per year.

A strength to Wilmington's curbside program is low contamination. This attests to the residents' behavior and the City's education/enforcement. The final performance metrics analyzed are messaging and the MRF shed. A common characteristic for successful programs is consistent messaging. Harmonizing accepted materials across communities and regions is essential to provide a cleaner stream of recyclable materials to the market. Before stricter recycling standards were issued, the City received recycling revenue for materials. In more recent years (2018, 2019, and partial 2020), revenues are no longer received. In 2020, MRF processing fees increased from $20 per ton to $35 per ton.

DROP-OFF

The SWMD contracts with a private sector service provider to service all the community drop-offs. Service contracted includes provision of container, collection, and processing of drop-off recycling to 8 urban and 10 rural locations throughout the county. Each single stream drop-off container is 6-yards. The number of containers per site varies depending on usage. All locations are serviced weekly.

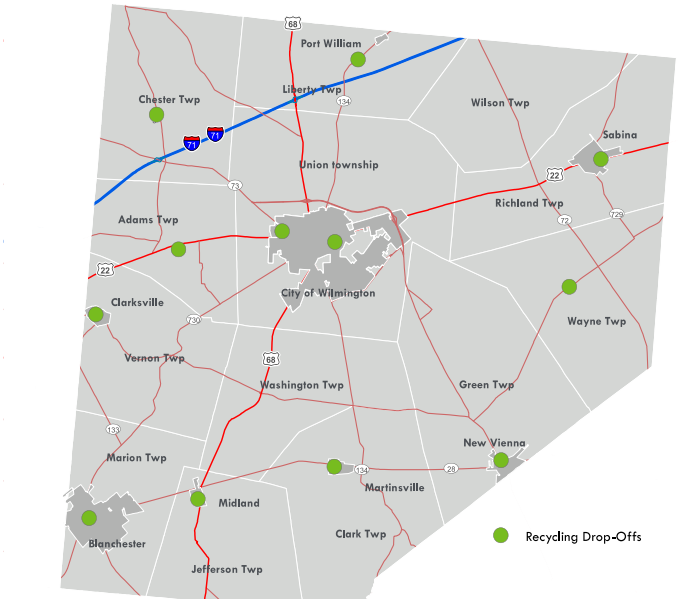


Figure H-2 Drop-off Locations (2019)

All locations are available because a host allows the drop-off containers to be placed on their property. At any time, the drop-offs are subject to change if the host requests the containers to be removed. All drop-off sites are located along transportation routes. The service provider's containers are marked with stickers/signs showing and stating (photos and words) the acceptable materials to include in the containers. Containers are available 24/7.

The drop-offs accept plastic bottles, jugs and jars; glass bottles, jugs and jars; cans (metal, aluminum), and paper (magazines, newspaper) in a single stream. Cardboard is not an acceptable item at the drop-offs. Cardboard takes up space requiring more containers and/or more frequent service. These service changes increase the costs to service the program. In order to keep service costs within budget allowances, the SWMD directs residents to take their cardboard to a separate location at the Wilmington Landfill. The SWMD also limits cartons, an acceptable material from the service provider, at the drop-offs.

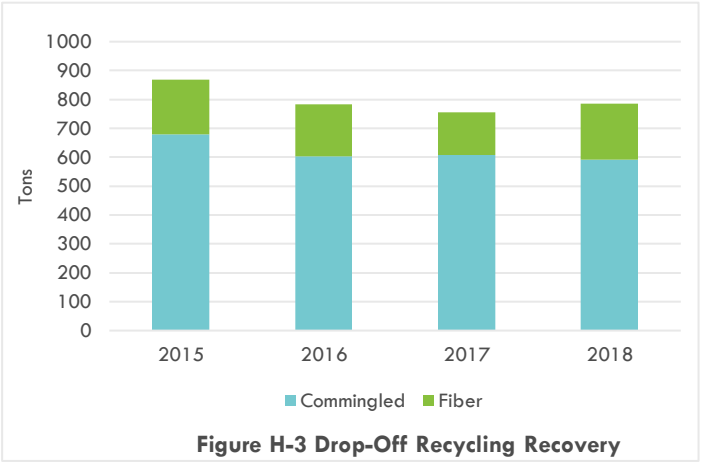


Figure H-3 Drop-Off Recycling Recovery

The contract for servicing drop-offs does not report quantities of material collected per drop-off. After a decline was seen in 2016, the total recovery tonnage measures fairly consistent. Figure H-3 includes fiber from other drop-off programs. Assuming the entire county population, the average pounds per capita recovered through the drop-off program is approximately 37 pounds per person per year in 2018.

Benchmarking costs and program recovery, the SWMD was compared to two other solid waste management districts. Fayette-Highland-Pickaway-Ross (RPHF) is a neighboring district also

contracting with the same service provider. Jefferson Belmont Regional Solid Waste Authority (JBRSWA) directly provides drop-off containers and collection service. Like the SWMD, both benchmarked districts' drop-off programs are available 24/7. JBRSWA collects dual stream, RPHF is single stream, and the SWMD, while advertises single stream, directs cardboard separately and paper can be taken to Royal Oak paper containers.

It's challenging to benchmark drop-off program to other solid waste management district programs even when normalizing on a per ton or per capita level. The reason it's challenging is because it's not a straight apples-to-apples comparison in service offerings. JBRSWA provides their own drop-off service, but additionally operates glass only and paper only collection routes. Service and equipment costs are not separated for those routes. The SWMD is able to direct paper and cardboard to other containers, thereby keeping the number of containers needed for service to a minimum. JBRSWA pays the most per ton, but also collects more recyclables per capita than the other districts.

Table H-2 Benchmarked Drop-off Program

SWMD	Cost per Ton	Ton Per Location	Per capita Recycling (Pounds per Person per Year)
Clinton County	$49	71	37
Fayette Highland Pickaway Ross	$104	73	33
Jefferson Belmont Regional Solid Waste Authority	$363	89	61

Source:
Fayette Highland Pickaway Ross phone survey June 2020.
Jefferson Belmont Regional Solid Waste Authority Quarterly fee reports and Annual District Reports for calendar year 2017.

Even though the containers are well marked with stickers/signs, contamination is an issue at some of the sites. In 2018, one of the two sites in Blanchester was completely removed because of high contamination. Other sites are re-located usually within the same village or township.

Like other solid waste management district's, the SWMD has taken various measures to combat contamination including enforcement. A question the SWMD has been considering lately is whether consolidation of sites into larger, i.e. sites with more containers at one location, would serve the residents well and help combat contamination. Figure H-4 charts the average drop-off capacity visually measured for each location over 5 years, from 2015 to 2019. Four locations are consistently less than 50% full when checked.

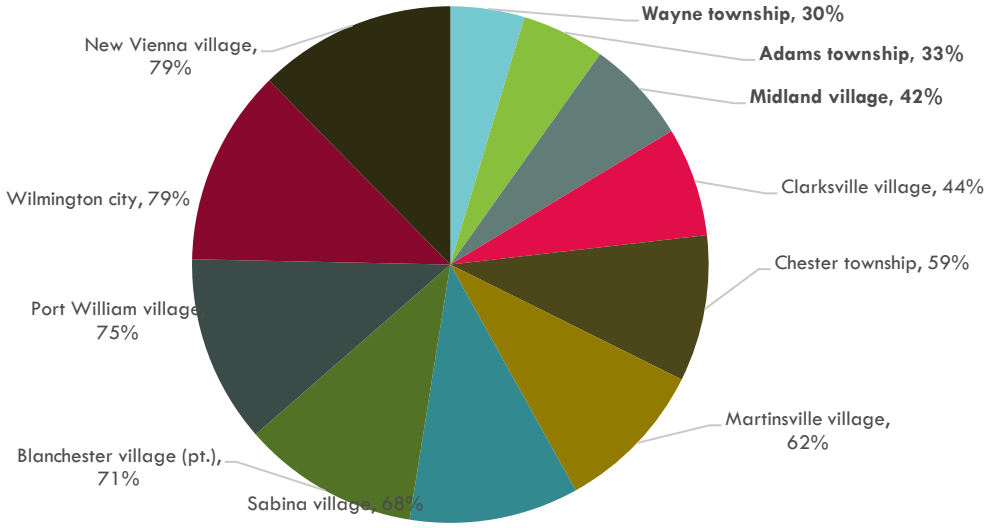


Figure H-4 Drop-Off Average Fullness from 2016 to 2019

The SWMD also conducted a drop-off user study of the Wilmington location to ascertain where users who use the site are coming from. The study was conducted over a two-week time period at various times of the day from November 20 through December 3, 2019. Results of the survey show the majority of users are coming from Union Township, followed by Adams Township and Vernon Township. See Figure H-5. Adams Township has a drop-off site, and in Vernon Township there is a site in the Clarksville Village. Comparing usage to capacity, both Adams Township and Clarksville Village are two locations continually demonstrating low container volumes. It can be assumed from the usage study that the majority of residents using drop-offs in Adams Township, Clarksville and Vernon Township are using the site location in Wilmington. Eliminating these two sites is a possibility if additional capacity is available at the Wilmington location.

Midland Village is another location demonstrating low container volumes. It is possible the Blanchester site could be a frequent location used by residents on the southern corner of the County. Blanchester's site location has available space for additional material as the average capacity is visually measuring about 61% full. Eliminating the Midland Village location could divert more of the materials to the Blanchester location to better optimize the network of drop-offs.

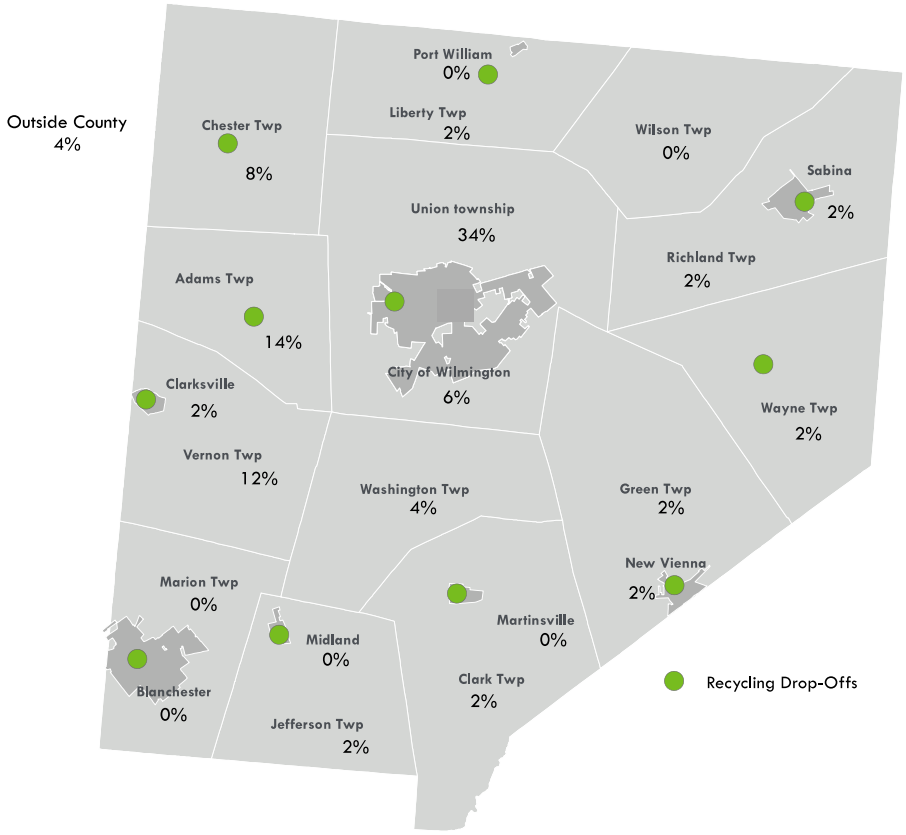


Figure H-5 Drop-off Usage Pattern at Wilmington Drop-off Location

TAKE-BACK RETAILERS

Buybacks, take-back retailers, reuse centers, and thrift stores are other outlets for diversion. The SWMD surveys these businesses; however, if a survey is not returned, the recovery of materials to be recycled or reused is not captured. The SWMD maintains a list of scrap yards, buybacks and take-back retailers, as well as other collection points for materials such as batteries, used oil, etc. These lists are located on the SWMD website.

REUSE AND THRIFT STORES

Reuse and thrift stores are available throughout all counties. Reuse infrastructure heavily falls on non-profits and their development of reuse centers. The SWMD is not involved and does not plan to be involved in developing reuse infrastructure. An area of focus that could be expanded is the SWMD's role to encourage support of reuse and thrift stores. Additionally, education to address waste minimization for residents and businesses could be enhanced and added to the website. Programs with proven success to address waste minimization and reuse are volume-based incentive-fee collection systems, or pay as you throw (PAYT), education and outreach approaches, creation and promotion of a reuse and repair network. It could be useful to develop a resource guide to donating.

FOOD BANKS AND FOOD DONATION CENTERS

The US EPA food recovery hierarchy, shown in Figure H-6, moves from preferred to least preferred food recovery methods reinforcing the highest and best use of food waste. The top management hierarchy is reducing waste at the source. The second is feeding hungry people, where food banks and food donation centers fall. The SWMD does not actively serve a role in the management or education or food recovery, but there are synergies where the SWMD could be a resource. Could the SWMD serve an organizational role to bring all stakeholders to the table to explore the management methods available in each county? Could the SWMD develop a network? Could the SWMD provide educational support? These are avenues to explore as the Policy Committee looks at programming in the next plan update.

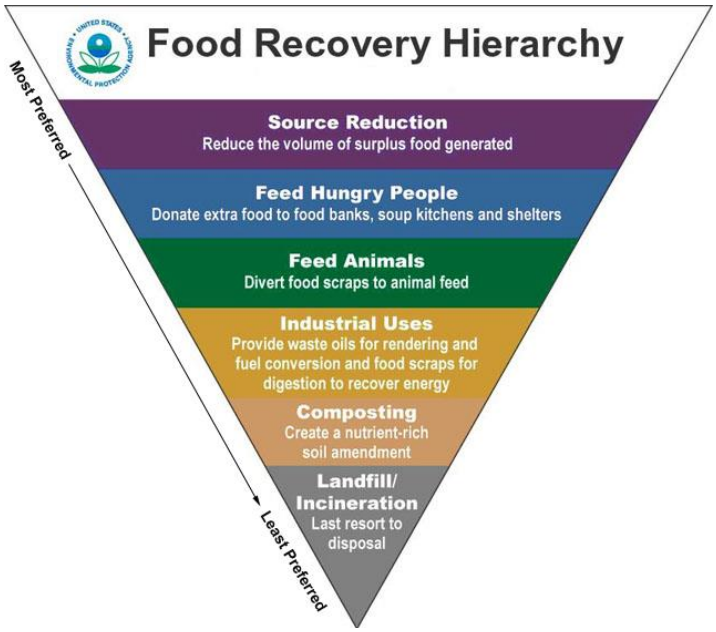


Figure H-6 U.S EPA's Food Recovery

b. Conclusions/Findings

One of the major and primary challenges for curbside recycling is the cost of service. The SWMD education/outreach and technical assistance encompasses benefits and financial estimates. With low commodity market value, the costs for curbside service is higher. Most communities are not willing to increase service level costs to residents to provide curbside recycling. As demonstrated, communities with curbside service achieve higher per capita recovery. Expanding curbside recycling will require administration support in the communities.

A few challenges with the drop-off program include service costs, limited materials (no acceptance of cardboard), and contamination. Taking a holistic look at the program, optimizing the locations could help solve some of the issues. For instance, if under-utilized locations are consolidated, the SWMD could create a site or two with fencing, cameras, and better aesthetics, all of which help deter trash contamination.

Take-back retailers, reuse centers, food donation and food banks need little support from the SWMD in their program operations. The SWMD could serve a role to help promote and educate residents about the values of waste minimization, repair and reuse.

2. Commercial/Institutional Sector Analysis

This evaluation of the SWMD's existing commercial/institutional recycling determines if existing programs are adequate to serve the sector or if there are needs that are not being met. The analysis conducted for this plan update evaluates the strengths and weaknesses of existing programs. The ultimate goal is to determine gaps and if there is more the SWMD can do to address the commercial sector. The commercial/institutional sector within the SWMD 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. Evaluation

Transportation infrastructure is highly developed with highways, air and rail. Clinton County is connected to Columbus, Ohio and Cincinnati by Interstate 71, which crosses the northern third of the county. U.S. Route 68 is the major north-south route and U.S. Route 22 runs east-west providing easy access throughout Clinton County. In addition, State Route 73 Bypass connects Interstate 71 to the Wilmington Airpark which is located within the county. Rail service through the county is owned by CSX.

GEOGRAPHICAL

What is rural and urban is defined after each decennial census using specific criteria related to population thresholds, density, distance and land use. In general, rural areas are sparsely populated, have low housing density, and are far from urban centers. In Clinton County the land use is predominantly rural (see Figure H-6) and population density is low[11] (102.9 persons/square mile). This single-county District is geographically located in southwestern Ohio and within close proximity to metro areas of Cincinnati, Dayton and Columbus. The largest, most densely populated and developed community in the County is the City of Wilmington. The City of Wilmington is an urbanized cluster where roughly 30% of the County's population resides.

Figure H-6 Land Use

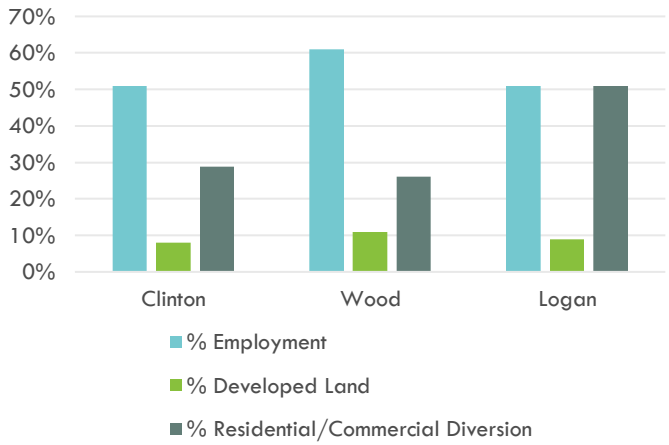
The majority of the commercial base is located in the City of Wilmington. Outside of the City, the commercial base is small with concentrated districts or parcels near the village and township town centers.

LABOR FORCE

[11] https://www.census.gov/quickfacts/clintoncountyohio

The industries with higher percentage of workers in Clinton County include Transportation & Warehousing, Manufacturing, and Health Care & Social Assistance[12]. Two other single county solid waste districts were found with similar labor force stats – Wood County and Logan County. Both Wood County and Logan County share similar workforce and demographic characteristics. Wood and Logan demonstrate at least 50% of employment in the same categories as Clinton County. Land use is also similar in all three demonstrating 11% or lower use is developed land[13]. Because of these characteristics, the SWMD wanted to see if there were any correlations to the residential/commercial diversion data among the three counties. As shown in Figure H-7, Clinton and Wood County demonstrate similar diversion rates while Logan County is almost 50% higher.

Figure H-7 Correlations to Other Counties



DIVERSION

Analyzing the type of materials diverted to reach the diversion rate in each County, the SWMD notes both Wood and Logan County are recovering higher tonnages of paper, cardboard, and yard waste.

[12] Ohio Economic Profile Clinton County. Ohio Department of Job & Family Services, Office of Workforce Development. July 2019.
[13] 2018 Ohio County Profiles for Clinton, Logan and Wood Counties. Office of Research.

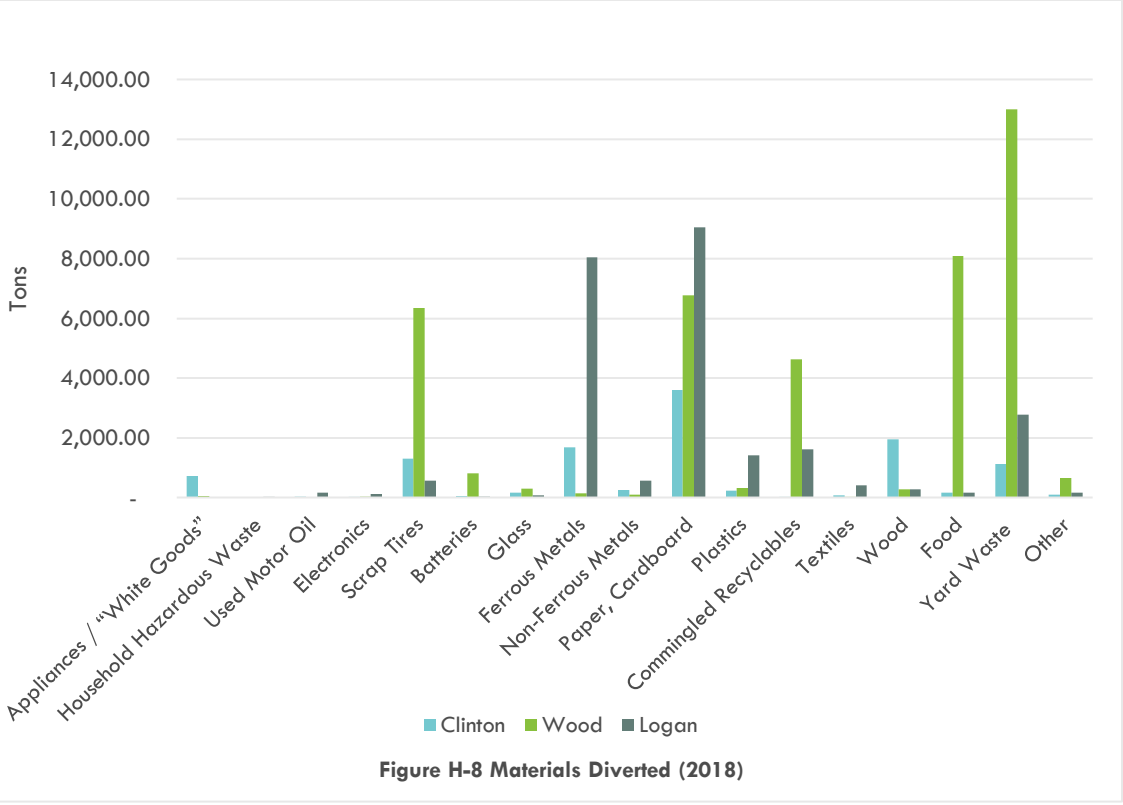


Figure H-8 Materials Diverted (2018)

Both Wood and Logan County have some level of recycling collection offered to schools, office buildings and some commercial businesses. In Wood County, a partnership with Wood Lane Industries (non-profit) helps bridge the collection gap for commercial sector recovery. In Logan County, their own direct service for collection contributes to higher recovery of paper and cardboard.

Management of residential and commercial recycling makes separating commercial data from residential data challenging. Measurables obtained from this sector include recorded diversion data obtained from commercial surveys, brokers, haulers, and Ohio EPA sourced data from commercial businesses and material recovery facilities (MRFs). Using these data sources, as shown in Table H-3, a total of 6,574 tons are estimated as commercial recycling activities.

Table H-3 Estimated Commercial Stream Recycling

Recycling Data	Quantities (Tons)	Percent of Stream
Residential and Commercial Recycling	11,443	
Estimated Residential Only	4,869	**43%**
Estimated Commercial Only	6,574	**57%**

While the estimations are rough, this demonstration shows 57% of the residential/commercial recycling is attributed to the commercial sector.

FUNCTIONALITY

Businesses can request recycling service from local haulers and/or brokerage companies. The SWMD maintains a list of local haulers providing recycling services. Local haulers collect materials and transport them to a materials recovery facility (MRF) for processing. Brokerage companies handle

the selling of recyclables on behalf of the commercial clients. Commercial businesses generating recyclables contact a broker to collect and deliver to an end processor.

The commercial sector encompasses a variety of businesses. For purposes of the 2021 Plan, it makes sense to organize the sector into groups for analysis.

Event Venues and Parks: Event venues and parks are one of the more challenging groups to target. Attendees/population at events are transient. The attendance at these locations is generally short bursts for only a small amount of time, adding challenges to outreach and education on proper material recycling. Permanent receptacles have not been established mostly because of costs for collection and service. The SWMD has soda bottle shaped bins available for loan. These are portable and easy to maneuver for events. After use, materials are deposited into the drop-off containers.

Commercial Businesses: The percentage of developed land in the County is low, and as mentioned, the commercial base is limited to mostly the City of Wilmington. Businesses are financially responsible for implementing their own recycling programs. Commercial businesses have the opportunity to contract with local haulers for recycling dumpster service. A recent benefit for the businesses located in the City of Wilmington is recycling service provided by the City. Services extend to businesses and multi-family dwellings within the City limits, but to participate a container must be requested. Providing this service offering to commercial and multi-family dwellings is a best practice program to increase recovery. Both Wood and Logan Counties service programs for the commercial sector, which help to reach high rates of diversion for paper and cardboard. Because the businesses use wheeled carts and routes include single family, multi-family, and businesses, the material tonnages for the City of Wilmington's curbside program include both residential and commercial recyclables.

Since collection opportunities are available throughout the County, the SWMD's technical assistance and waste assessments help to start or fine tune commercial diversion programs. About 2-4 waste assessments a year are conducted. The number of assessments conducted has lessened over the years (compared to 8 assessments in 2015), mostly because of the retirement of the Education Specialist in 2017 reducing staff time to conduct assessments. Compared to Wood and Logan Counties, who conduct maybe one audit a year, Clinton County is reaching and assisting more businesses.

Schools, Universities, Institutions: Schools, universities, and institutions each have their own challenges or barriers for recycling. The SWMD has met in-person or conversed over the phone with every school, university, and institution located in the County at some point. Fortunately, some of the Royal Oak paper containers are still being provided and serviced by Royal Oak, but not at the collection service level that was provided back in 2014. As this program dwindled, the SWMD enhanced the technical assistance and outreach making a point to talk with every school and calculate the savings involved by recycling and disposing of less.

Clinton County is home to Wilmington College - an NCAA Division III athletic school (serves more than 1,100 students), Southern State Community College, Laurel Oaks Vocational School, one private school academy, and four public school districts. The largest school district (by student enrollment) is Wilmington City School District, followed by Clinton-Massie Local Schools. Table H-4 lists the schools and recycling program. All the schools subscribing to services utilize bins or some sort of container in their classrooms.

Table H-4 Schools, Enrollment, and Recycling Services

Schools	Average Enrollment	Subscribe to Recycling Service
Wilmington City School District		
East End Elementary	336	X
Roy E. Holmes Elementary	638	X
Denver Place Elementary	546	X
Rodger O. Borror Middle School	722	X
Wilmington High School	928	X
Subtotal	3,170	
Clinton-Massie Local Schools		
Clinton-Massie Elementary School	857	X
Clinton-Massie Middle School	473	X
Clinton-Massie High School	590	X
Subtotal	1,920	
Blanchester Local Schools		
Putnam Elementary School	534	Paper recycling only
Blanchester Intermediate School	319	X
Blanchester Middle School	449	X
Blanchester High School	474	Paper recycling only
Subtotal	1,776	
East Clinton Local Schools		
East Clinton High School	386	Paper recycling only
New Vienna Elementary School	322	Paper recycling only
Sabina Elementary School	460	Paper recycling only
East Clinton Middle School	375	Paper recycling only
Subtotal	1,157	
Wilmington Christian Academy	265	X
Wilmington College	1,103	X
Southern State Community College	Consolidating program and school	
Laurel Oaks Vocational School	unknown	unknown

Source:
Ohio Department of Education (2019)
Clinton County SWMD records

The SWMD has discovered hospital waste streams are well managed by their own staff. These institutions are not very interested in technical assistance from the SWMD since most of their waste streams are somewhat specialized and, due to their nature, are regulated or somewhat regulated. The County is home to a 165-bed medical/surgical acute care hospital, the Clinton Memorial Hospital, which does recycle single stream with a private service provider.

Government Agencies, Office Buildings: Government agencies and office buildings are grouped together because the majority of waste generated is paper and cardboard, and they tend to be clustered in areas. Those located in the City of Wilmington are provided recycling service.

Multi-Family Housing: A search on the Clinton County Auditor's website returned 129 properties in Clinton County identified as multi-family housing ranging from four to more than 40 units. The majority of these are located in the City of Wilmington where recycling service is provided by use of wheeled carts.

Challenges/Barriers

- Collection service cost barriers.

b. Conclusions/Findings

The commercial sector is well serviced by the public sector - and for those located in the City of Wilmington, by the City's service. Education and technical assistance provided by the SWMD engages the commercial/institutional sector to find ways to recycle. The most significant barrier is cost of service, and with lack of service provider competition in the County, there are limited solutions. However, the City of Wilmington's expansion to service businesses and multi-family dwellings services a gap where most of the businesses in the County are concentrated. This analysis also demonstrates that paper and cardboard recovery in similar demographic counties is higher, thus additional recovery volumes of these materials is possible. Possible opportunities include:

- Targeting material specific campaign for paper and cardboard.
- Explore private sector partnerships and funding.
- Continue to apply for Ohio EPA grants to help businesses expand or implement recycling programs.

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 and also determines if additional programs are needed to support the industrial manufacturers in Clinton County.

a. Evaluation

According to the "Ohio Economic Profile Clinton County"[14] manufacturing accounts for 21.4% of the annual employment in 2017. As shown in Figure H-9, manufacturing employment dipped in 2015 but demonstrates a rise in 2016. This data contradicts the West Ohio JobsOhio Region[15] (Clinton County is grouped in the West Ohio Region) where manufacturing employment was predicted to decrease through 2026.

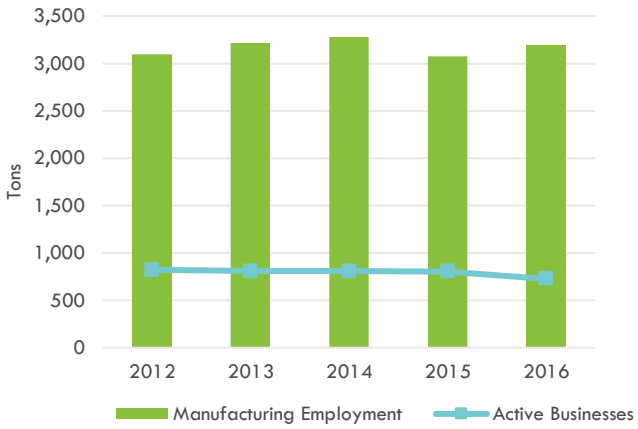


Figure H-9 Number of Active Businesses and Manufacturing Employment

According to web-based research, the largest industries in the county include the following:

[14] Ohio Department of Job and Family Services Office of Workforce Development. "Ohio Economic Profile Clinton County". July 2019.
[15] Ohio Department of Job and Family Services Office of Workforce Development. "2026 Job Outlook JobsOhio Network West Ohio". July 2019

Table H-5 SWMD Largest Manufacturing Employers

Company	# Employees
Ahresty Wilmington Corp	960
Alkermes Inc	386
Ferno-Washington Inc	250
Nippon Seiki/New Sabina Industries	403
Showa Corp/American Showa	320

Source: SWMD survey data, web-based search

Web-based searches found that the largest industries have sustainability plans (corporate responsibility reports), environmental stewardship, or recycling activities in place. Industries are financially responsible for implementing their own recycling programs. JUST Capital reported that of "875 companies analyzed, just 136 have disclosed both the total amount of waste produced and recycled within a given year, and we've found that, of the total waste produced by those companies, about 54% is recycled[16]."

SWMD also has challenges with area industries disclosing recycled data and collecting responses from surveys. The SWMD bi-annually surveys a list of industrial businesses to gather recycling data, and responses are low. The SWMD's relationship with these entities is limited. The SWMD offers technical, education assistance, etc. through programs, yet minimal assistance to provide technical assistance to the industrial sector occurs. Engagement with this sector is challenging because waste streams generated are specialized, manufacturing is proprietary, and/or businesses have on-site staff to manage the waste stream.

The model in the county is to let the private sector hauling companies outreach for services to the businesses. It's the role of the private business to determine the needs and provide the right-sized service.

b. Conclusions/Findings

Assistance is available to this sector and is distributed when requested. The SWMD has found the industrial sector outreach to be challenging. Possible SWMD opportunities towards this sector include:

- Promoting Ohio EPA's Material Marketplace, and
- Obtaining and maintaining up-to-date contact information for staff managing the recycling program in hopes to achieve responses to surveys.

The industrial sector is not a focus area for the SWMD.

4. Residential/Commercial Waste Composition Analysis

This evaluation of the SWMD's residential/commercial composition analysis describes and evaluates the wastes that make up the largest portions of the residential/commercial waste stream. The evaluation outlines what programs are in place to address these waste streams and what programs the SWMD should evaluate to further address those wastes.

[16] Forbes.com "These Five Companies Are Leading The Charge On Recycling." April 20, 2018. JUST Capital and Hernando Cortina.

a. Evaluation

Waste Generation = Wastes Disposed + Wastes Diverted

39,930 tons = 28,487 tons (disposed) + 11,443 tons (diverted)

Of the 39,930 tons generated in the SWMD in 2018, just over 70% was landfilled. The 2018 landfilling rate of the residential and commercial sector is comparable to previous 5 years. To better understand what materials are being landfilled, two waste characterization composition percentages[17] were applied to the SWMD's landfilled tonnage of 28,487 tons.

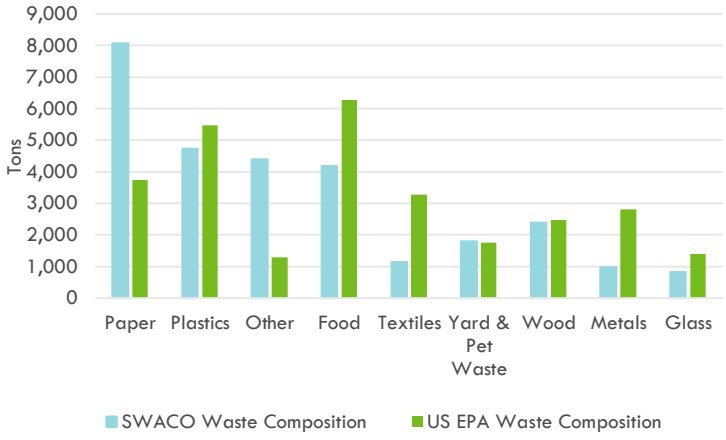


Figure H-10 Estimated MSW Stream Composition

The Solid Waste Authority of Central Ohio (SWACO) regularly performs waste sorts to understand the composition of the District's disposal stream and provides the composition assessment based on the commodity's percent in the stream. Similarly, the US EPA provides a national estimate of the percent composition of landfilled municipal solid waste. While the two sources provide comparable data, there are notable differences. SWACO reported a higher proportion of paper in the disposal stream than the US EPA, 28% and 13% respectively. Additionally, the Other category is greater in the case of SWACO at 15% compared to 5% for the US EPA. Food waste, textiles, and metals are three categories where the US EPA's estimate is significantly greater than SWACO's estimates. Without specific waste composition data from Clinton County, it is not possible to determine which estimate is closer to representing the County's landfilled waste. As a result, both estimates are presented here for reference.

By assessing the composition of landfilled material, the SWMD can gain insights into which materials to target for diversion efforts. For example, as shown in Figure H-10, the larger components of the residential/commercial trash stream are projected to be paper, including cardboard and office paper, plastics and food. These top 3 categories which can be recyclable/compostable make up over half of the residential/commercial waste landfilled.

Fiber (Paper Materials) Waste Stream:
Using the waste composition estimates from Figure H-10, an estimate of at least 3,700 tons of paper category materials are being disposed at the landfill. The SWMD recycled 3,610 tons of paper in 2018, capturing about 30% of the paper generated in the county for recycling. However, fiber materials (cardboard and paper materials) have potential to be recovered in

[17] SWACO 2019 Waste Characterization Study and USEPA 2017 Facts and Figures

higher rates. In fact, American Forest and Paper Association stated the U.S paper recovery rate in 2018 is approximately 68.10%[18].

All SWMD residents have access to fiber recycling through the drop-off collection program; however, cardboard is not currently accepted at the single stream drop-offs because the SWMD anticipates that the volume of cardboard collected would overwhelm the sites. There are two drop-off locations in the SWMD where residents can recycle cardboard – the Wilmington City Building Parking Lot and the Wilmington Sanitary Landfill. Residents can only utilize the drop-off location at the Wilmington Sanitary Landfill during open hours. The drop-off at the Wilmington City Building Parking Lot is available 24/7 to residents. Cardboard is accepted in the Wilmington curbside recycling program. An additional fiber recovery program available to residents is the Royal Oak Paper Recycling program, a paper recycling program for schools, churches, and community-based organizations. Royal Oak manages the paper boxes throughout the SWMD, and other than the boxes located at the drop-off site locations, the SWMD does not monitor or maintain a list. A total of 17 boxes are located at the 8 known drop-off site locations. Currently, Royal Oak does not accept cardboard at their collection sites.

Fiber (paper and cardboard) stream is recyclables traditionally captured at the curb and drop-off for residents. Limiting cardboard collection at drop-off programs is a gap in diverting additional cardboard. The main factor is the cost of servicing additional drop-off containers or more frequent service. Commercial businesses have the opportunity to contract with local haulers for recycling dumpster service. The SWMD facilitates this by offering technical assistance. Typical challenges include costs for recycling services (container, processing and hauling), space for recycling containers, time and effort to collect recyclables on-site. In addition to contracting with haulers for recycling, larger commercial businesses can also bale and recycle their cardboard independently.

End markets and processing of plastics is an issue across the industry. Prior to December 2017, most recycling collected in the United States was shipped to China to be manufactured into new products and packaging. However, in January 2017, China's government announced that it would no longer accept certain recycling by the end of 2017. The recycling targeted by China's Operation Blue Skies include mixed paper and mixed plastics. When China stopped accepting targeted materials, it impacted municipal programs and today some of these programs continue to struggle with the impacts of China's Operation Blue Skies resulting in a tough time securing alternative markets for the targeted recycling. In addition, it has had a negative impact on the revenues derived from recycling in comparison to previous years with stronger market prices. Cardboard is a highly recyclable fiber material that has generally maintained value even while other commodities have decreased in price. However, paper market values have been negatively impacted.

The recent opening (2019) of a paper recycler manufacturer in Ohio may provide additional opportunities to cost effective solutions in addressing the identified gaps.

Yard Waste and Food Waste Stream:

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[18] [18] https://www.paperrecycles.org/statistics/paper-paperboard-recovery

According to both the SWACO and US EPA waste compositions, approximately 1,700 tons of yard waste is landfilled for the SWMD. As reported by compost facilities to the Ohio EPA, an additional 1,118 tons of yard waste is composted so that 38% of yard waste is diverted from landfill. The City of Wilmington provides residents with access to curbside yard waste collection. Additionally, it is likely any commercial landscapers operating in the SWMD are already bringing yard waste to the Wilmington Landfill for composting. Given the generally rural nature of most of Clinton County, increasing yard waste collection may be challenging. However, there is still opportunity for the SWMD to encourage diversion of organics by providing outreach and education around backyard composting, smart landscaping, grass-cycling, and leaf mulching or mowing in place. Despite Ohio legislation in 1995, attempting to limit and restrict the use of landfills for disposal of yard waste, some residents still manage their yard waste at the curb with their household trash. If residents mix yard waste with municipal trash, the yard waste is disposed in the landfill.

Using the waste composition estimates from Figure H-10, an estimate of at least 4,000 tons of food waste are being disposed at the landfill. Ohio EPA reports show 159 tons of food waste was diverted from the landfill in 2018 capturing about 2% of food generated. Food waste occurs at various segments along the supply chain: farms, manufacturers, consumer-facing businesses (restaurants, grocers, etc.), and homes. Analyzing the SWMD's supply chain demonstrates all chain segments except for manufacturers may be opportunities for diverting food waste in the SWMD. Clinton County ranks 15th out of 88 counties for market value of agricultural crops sold in the state.

Available infrastructure consists of the composting facility at the Wilmington Landfill, which is a class IV facility not classified to accept food waste. The nearest class II facility that can accept food waste is Brausch Farms in Warren County.

Various strategies are already occurring and could be explored to reduce food waste along these supply chain segments including:

- Developing imperfect produce education
- Becoming a resource conduit for donation liability and tax incentive information
- Serving as a resource and advocate on donation storage and handling
- Reducing waste at the source before entering the waste stream
- Improving infrastructure
- Developing consumer education campaigns (various topics: home composting, food waste prevention awareness, etc.)

Plastic Waste Stream:
Residential/commercial estimated waste composition identifies plastics as one of the larger percentages of waste streams being landfilled.

The terms "plastic #1" and "plastic #2" refer to a plastic container's resin identification code. Put simply, this code refers to what type of polymer comprises a container. Which type of plastic a container is made from is identified by the recycling symbol on the container. Inside the symbol will be a number, 1-7, which is the resin code.

As with other materials in the recycling industry, acceptability of plastics into a recycling program is largely determined by market forces. #1 and #2 plastics are accepted into nearly every drop-off and curbside recycling program because there is strong post-consumer demand for them from manufacturers. Though plastics #3 through #7 are actually recyclable, there is not a strong market for them in the central Ohio region. In both the SWMD drop-off programs and City of Wilmington, only bottles and jugs which are commonly plastics #1 and #2 are accepted. The two regional MRFs the SWMD utilizes both operated by Rumpke also only accept bottles, jugs and jars for recycling.

To ascertain the historical changes in the plastic stream, the SWMD looked to SWACO's 2014 and 2019 waste characterization studies as shown in Table H-6.

The type of plastic (denoted by its resin code) often determines what type of products it can be used to manufacture. See chart below.

Symbol	Code	Description	Examples
01 PET	#1 PET(E)	Polyethylene terephthalate	Soda & water bottles, salad dressing bottles
02 PE-HD	#2 PEHD or HDPE	High-density polyethylene	Milk jugs, shampoo & conditioner bottles
03 PVC	#3 PVC	Polyvinyl chloride	Window frames, bottles for chemicals, flooring
04 PE-LD	#4 PELD or LDPE	Low-density polyethylene	Plastic bags, buckets, soap dispenser bottles, plastic tubes
05 PP	#5 PP	Polypropylene	Bumpers, car interior trim, industrial fibers, yogurt tubs
06 PS	#6 PS	Polystyrene	Toys, flower pots,, ashtrays, trunks, "Styrofoam"
07 O	#7 O(ther)	All other plastics	Bio-based plastics

Figure H-8 Plastic Resin Codes

Table H-6 Historical Plastic Characterized in SWACO's Waste Stream

Plastics Material	2019 SWACO Waste Characterization	2014 SWACO Waste Characterization
#1 PET Bottles & Jugs	1.6%	2.8%
Other #1 PET Packaging	0.3%	
#2 HDPE Natural Bottles & Jugs	0.3%	0.5%
#2 HDPE Colored Bottles & Jugs	0.4%	1.5%
Other #2 HDPE Packaging	0.1%	
#5 PP Packaging	0.9%	
Other Rigid Plastic Containers, Packaging & Small Products	0.7%	
#3 PVC		0.3%
Expanded Polystyrene	0.6%	
Plastic Bags – Recyclable	0.1%	
Other Plastic Film – Recyclable	1.3%	
Other Plastic Film – Non-Recyclable	5.6%	4.0%
Plastic Durable & Bulky Items	3.1%	
Other Plastic – Non-Recyclable	1.6%	
Other Plastics		8.2%
Total Plastics	17%	17.2%

Table H6 shows a decline in #1 PET and #2 HDPE plastics between the 2014 and 2019 study which could be attributable to better diversion of those plastics. There are also other plastic categories that were either not separately categorized in the 2014 study or maybe not prevalent. Overall, the percentage of plastic in the waste stream remained almost the same. The 2019 study

shows the difference in the types of plastics prevalent. Some plastic outlets are available such as for plastic film, which are accepted in separate drop-offs located at most grocery stores.

b. Conclusions/Findings

With low capture rates, the SWMD could look at programs to divert additional fiber (paper materials) stream from the landfill. Types of opportunities include:

- Add cardboard to drop-off program (10.4% of disposal stream[19]).
- Add cartons to drop-off program (0.1% of disposal stream).
- Develop a streamlined approach to managing cardboard at the Wilmington Landfill to optimize program and economies of scale.
- Seek grants to help with program expansions.

Low diversion tons of yard waste is expected because the county is rural in nature. In rural counties, backyard composting is common practice. Food is another waste stream demonstrating a low capture rate. The SWMD does not have a centralized in-district infrastructure, such as a Class II compost facility or anerobic digester, to divert food waste from the landfill. These types of technologies will require a significant financial investment and programs/strategies to ensure feedstock and market demand for the finished product.

Cost-effective organics management solution opportunities include:

- Utilize a variety of education tactics to increase awareness about food waste reduction.
- Promote programs focused on other landfill alternatives like grasscycling where mowed grass is left on lawns to provide nutrients for the soil or backyard composting.
- Utilize social media for blasts and promotions such as at the beginning of the fall to promote leaf mulching and again in early spring to promote grasscycling.
- Develop a home composting workshop and incorporate organics reduction.
- Offer backyard compost bin sales could help increase awareness and the practice of backyard composting for alternative management methods.
- Promote materials such as USEPA's developed 'Food: Too Good to Waste' toolkit designed to reduce wasteful household food management practices.
- Explore promoting food waste tools and tracking systems (LeanPath 360) institutions can implement on-site.
- Promote donation and redistribution of food. These options include rescuing edible food waste for food insecure residents and donation and redistribution.
- Share and promote US EPA's food hierarchy.
- Share and promote US EPA's food recovery challenge.
- Bring regional partners together to address food waste infrastructure.

Plastics are a challenging waste stream because the MRF processor limits the plastics accepted. Opportunities the SWMD could implement include:

- Work with industry associations such as Food Packaging Institute, Association of Plastic Recyclers, etc. to communicate with the MRF to find end markets. State economic development departments and Ohio EPA are also stakeholders that will be crucial to finding/developing end markets.

[19] The percentages are estimating the amount of material currently in the disposal stream according to the SWACO waste composition estimate.

- Promote programs such as Wrap Recycling Action Program (WRAP) to bring additional public awareness to how residents can recycle plastic film.
- Promote same message as MRF for plastics that are recoverable to increase diversion of accepted plastics.

5. Economic Incentive Analysis

By definition, economic incentives are designed to encourage participation in recycling programs. In accordance with Goal 7 of the 2020 State Solid Waste Management Plan, the SWMD is required to explore how to incorporate economic incentives into source reduction and recycling programs.

a. Evaluation

Economic incentives in the waste and recycling world are offered to influence behavior. Typical economic incentives include rebates, rewards, grants, volume-based fee structures, etc. The majority of SWMD's offering economic incentives in the state either tie the amount recycled to some sort of financial compensation or reduce the cost of recycling.

The 2016 Plan Update outlined four economic incentive programs. Each of these programs are discussed here.

Community Grants: The SWMD offers grants to local municipalities and townships for clean-up events, recycling and litter prevention programs. Grantees are required to provide a 25% match. Funding allocations are based on the amount of applications received in a given year. Grantees are required to submit an application, plus a final report describing the recycling programs and use of the grant funds.

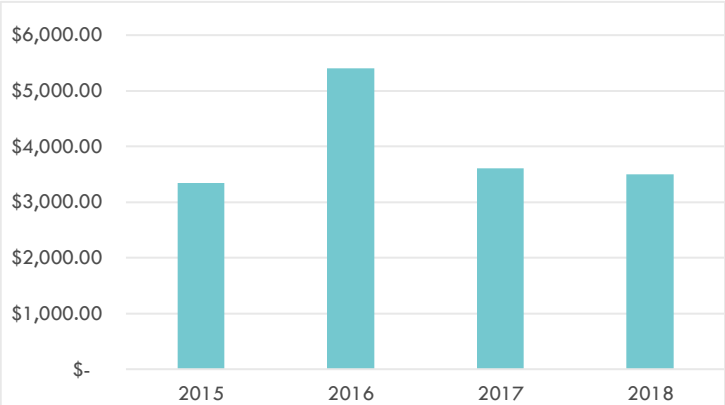

Figure H-11 Community Grants Distributed

While any communities can apply, the SWMD typically sees the same 5 to 6 communities applying for this grant annually. These grants give back to communities to allow them to clean up their communities. The SWMD is limited by the funding available to provide in grants.

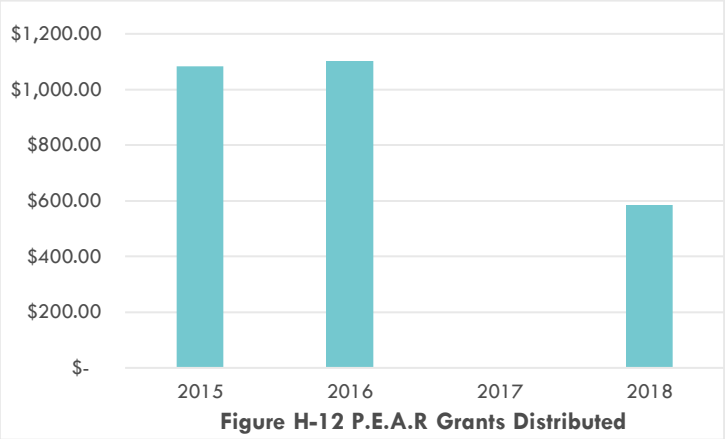

Figure H-12 P.E.A.R Grants Distributed

P.E.A.R Grants: The SWMD offers grants to local schools including preschools and colleges for implementation of recycling and litter prevention education programs on their campuses. Grantees are required to provide a 25% match. Funding allocations are based on the amount of applications received in a given year. Grantees are required to submit an application, plus a final report describing the recycling programs and use of the grant funds.

While there are four school districts and one private school, only one school district continually applies for the P.E.A.R Grants. The SWMD has seen these grants provide additional outreach and awareness for solid waste and recycling, and expand recycling infrastructure to purchase materials to overcome challenges.

Go GREEN Grants: The SWMD offers grants to businesses and non-profits to implement or expand recycling programs. Grantees are required to match the grant dollar for dollar. Funding allocations are based on the amount of applications received in a given year. Grantees are required to submit an application, plus a final report describing the recycling programs and use of the grant funds.

Very few Go GREEN Grants are issued because of lack of applicants. Since 2015, only one applicant applied and was awarded a grant in 2016. In 2017, the SWMD promoted the grant and received feedback that more funding is needed to entice applicants.

Curbside Recycling Grant: The SWMD set aside funding to be used for curbside recycling programs. Grant money can be used for existing curbside programs or for start-up expenses such as: infrastructure materials, supplies, printing, advertising, outreach expenses, and equipment. Communities wishing to receive money for their curbside recycling program need to apply for a grant.

In 2016, one grant was awarded to City of Wilmington totaling $5,000 to help offset costs associated with processing materials. Having grant money available is enticing to other communities that are considering a curbside recycling program.

b. Conclusions/Findings

The SWMD's economic incentives are designed to address target audiences:

1) Communities
2) Schools

3) Businesses

By providing grants to these target audiences, the SWMD assists with infrastructure gaps these audiences may experience to divert materials and litter issues. To date the grants have been successful in meeting their goals. One of the major restrictions is the amount of grant funding available. The grant amounts may not be large enough to attract audiences. In addition, all of the grants require some level of grant match.

If a driver to apply for the grant is additional funding, then the SWMD would have to consider an increase to generation fees. If available funding is not increased, another possibility could be reducing or removing the grant match amount.

Other options the SWMD could consider promoting are incentive-based programs that either tie the amount recycled to some sort of financial compensation (such as pay as you throw), or reduce the cost of recycling to significantly increase participation in an available recycling program. These types of incentives can change consumer behavior and can increase the tonnage of recyclables collected.

One type of policy and economic incentive-based program that could be implemented with the drop-off program is pay as you throw (PAYT). Logan County SWMD operates PAYT drop-off systems that drive higher diversion rates and provide a stable funding source. Simply explained, drop-off locations are beautified with landscaping, fencing, lights and cameras, and include trash roll-offs as well as recycling dumpsters. Trash containers are available for use only with "special" trash bags. The price of the bag creates revenue for the SWMD. The SWMD would need a service contract or arrangement to service the trash and recycling dumpsters. Additional coordination is needed for bag design, manufacturing, and selling.

6. Restricted and Difficult to Manage Waste Streams Analysis

Goal 5 of the 2009 State Plan requires SWMD's to provide strategies for managing scrap tires, yard waste, lead-acid batteries, household hazardous waste and obsolete/end-of-life electronic devices. This analysis evaluates the SWMD strategies and considers other materials and programs for difficult to manage waste.

a. Evaluation

HHW:

Prior to 2012, the SWMD planned to provide residents with every other year HHW collection events using a licensed hazardous waste contractor to collect, process and dispose of waste. However, high costs led the SWMD to seek alternative approaches to managing HHW. In lieu of hosting these events, Clinton County's website provides information on where household hazardous waste can be disposed of utilizing private businesses located in the County. The County's webpage lists outlets for other difficult to manage waste such as: appliances, batteries, tires, medications, used motor oil, cell phones and electronics. Residents that called were also provided with this information over the phone. The webpage could add more details on purchasing more environmentally friendly products and HHW prevention strategies.

Without any collection events, the SWMD does not have any ongoing costs to residents for HHW collection. However, for reference, Table H-10 was compiled by collecting data from regional SWMD's solid waste management plans and describes basic programs, costs and collected tons

for HHW programs. This table shows that there are a variety of ways to manage HHW collection. For example, residents in Preble County can dispose of HHW at the Preble County Sanitary Landfill Monday through Friday from 8:30 AM to 4:00 PM, and also from March through November on Saturdays from 8:30 AM to 12:00 PM. Residents can bring a variety of HHW items including oil-based paints, pesticides, household batteries and used oil at no cost. The program does not accept latex paint. Greene County conducts HHW collection events once per month starting at 9:00 AM and concluding in the early afternoon (times vary). Previously, the County only offered the collection events on Saturdays; however, to accommodate more residents, Greene County moved to holding the events alternating between Tuesdays and Saturdays. Greene County accepts HHW along with scrap metal, appliances with Freon, e-waste and light bulbs. In another approach, Adams-Clermont issues residents with vouchers for free disposal of HHW year-round after a one-on-one consultation with the staff to determine if there are alternative less expensive disposal options for items. Adams-Clermont informs residents of the voucher program through their website and in education presentations. Table H-10 shows that HHW collection is high on a cost per ton basis. At the same time though, the cost per ton for regional SWMDs varies greatly along with the services each provide to their residents.

Table H-7 HHW Benchmark Costs and Tons

SWMD	Service Provided	Total Costs	Households	Cost/Household	Tons	Cost/Tons
Preble	HHW trailer at the Preble County Sanitary Landfill.	$17,913	41,794	$0.43	10.2	$1,756.18
Greene	Monthly special collection event	$21,266	162,427	$0.12	15.6	$1,363.21
Adams-Clermont	Provides technical advice on proper disposal to residents and vouches to residents for free HHW disposal/recycling	$5,000	229,977	$0.02	NA	NA

Source: Solid Waste Management District Approved Plans

Scrap Tires:

To prevent illegal dumping of tires and offer an avenue for residents to properly dispose of used tires, Clinton County provides residents with a yearly scrap tire drop-off event. Clinton County residents can bring passenger and light truck tires up to 17 inches for collection. Starting in 2020, residents are limited to 10 tires per vehicle per event and are charged $1 per tire. Prior to 2020, residents were permitted to bring up to 8 tires at no charge. Additionally, starting in 2015 the District partnered with Clinton Soil & Water Conservation District to expand scrap tire collections and include an event called the "Ag Tire Amnesty Event" to collect agriculture and oversized tires. Residents wishing to utilize this program were required to register beforehand. Both scrap tire events have been funded through grants from the Ohio EPA.

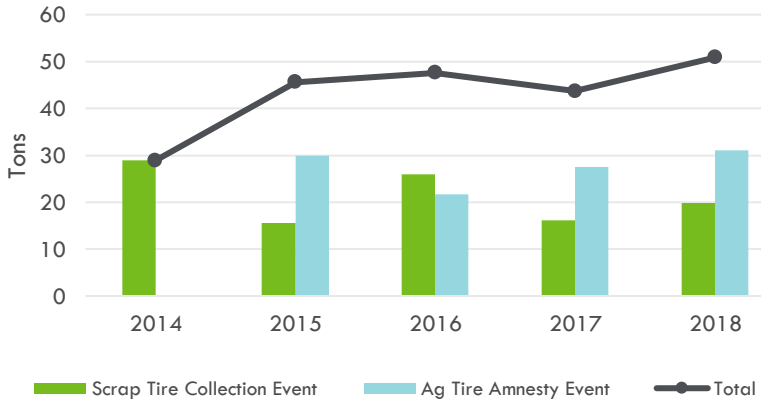

Figure H-13 Scrap Tire Diversion

Figure H-13 shows diverted tire tons from 2014 through 2018. A large increase in tons of

scrap tires collected was seen in 2015 following the implementation of the Ag Tire Amnesty Events to collect agriculture and oversized tires. Since implementation of that program, the SWMD has collected on average 46 tons of tires per year through collection events.

There are several other avenues besides the tire collection events for residents to properly dispose of tires including the Fayette County Transfer Station, Liberty Tire Service, Rumpke Recycling and Walmart. The County lists these opportunities on their website along with addresses and phone numbers for residents to get in touch and learn about tire disposal.

Ohio EPA estimates more than 12 million scrap tires are generated in Ohio annually. Scrap tires not properly disposed have the potential to end up in illegal dumps, creating hazards to public health and the environment. The number of tires and the cost to handle tires are challenges the District is addressing consistently.

Lead-Acid Batteries:
In 2008, regulations banning disposal of lead-acid batteries in landfills became effective. Lead-acid batteries have a high recycling value and Ohio has a retailer take-back law. Clinton County's webpage lists locations where lead-acid batteries can be recycled. The SWMD tracks lead-acid battery recycling through their commercial surveys. However, because these surveys are voluntary, receiving an adequate response rate is an ongoing challenge for the County. Scrap yards are another source for data on recycling of lead-acid batteries. Over the past five years, the SWMD has reported an average of 34 tons per year of lead-acid batteries as recycled.

Electronics:
Electronics contain hazardous materials that can pose health and environmental risks after disposal. The preferred method of handling is through the donation of working electronics and recycling for nonworking electronics. Clinton County maintains a list of retailer take-back, secondhand retailers and scrap yard outlets where residents may take electronics. Each location varies as to the type of electronics accepted and user fees charged. While it is challenging to measure the impact of the education efforts of the SWMD around electronic waste, Clinton County tracks electronics recycling through their business survey efforts. The District recognizes e-waste is a growing material stream and wants to be of assistance in diverting these materials from the landfill. The major obstacle is costs.

b. Conclusions/Findings

Clinton County works to provide avenues for residents to properly dispose of and divert restricted waste within current funding availability. Given the high cost of HHW, battery and electronic collection events, the SWMD has opted to channel residents to the private sector for disposal options. The benefits of utilizing the private sector for managing restricted waste is the private sector is generally able to provide year-round collection opportunities for residents, whereas collection efforts managed by the County are often limited to every-other-year or yearly events. Another benefit to this model is that it frees up SMWD funds to provide more services in other waste management areas such as the recycling drop-off program. At the same time, there are drawbacks to relying on the private sector. Businesses can close at short notice, leaving residents without disposal access. Additionally, residents are often charged by businesses for disposal, which can be a prohibitive barrier for some residents.

Regardless of the collection approach, households produce hazardous wastes containing chemicals that pose environmental risk. Informing the public to these dangers and providing outlets for proper disposal or recycling can be a priority item. Education on using less-harmful ingredients and more environmentally friendly products can be increased on the webpage and social media outlets.

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. Evaluation

Figure H-14 shows the diversion achieved over the past 5 years in comparison to Ohio EPA Goal #2. As shown, the SWMD exceeded the 25% residential/commercial waste diversion goal. Historically diversion is fairly consistent with a slight increase in 2016. The diversion rate increase in 2016 is mostly attributed to a decrease in disposed tons rather than an increase in diverted tons.

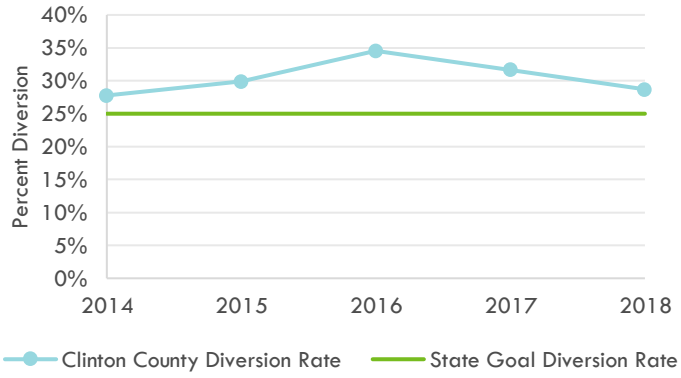

Figure H-14 Ohio EPA Goal 2 Diversion Status

The SWMD collects data from several sources to track diversion as shown in Figure H-15. A major factor in the diversion rate is the commercial survey, the SWMD conducts every other year. Diverted tonnage reported in the commercial survey accounts for 20% of total diversion. The only other reporting entity that contributes more to the County's diversion rate is data reported by

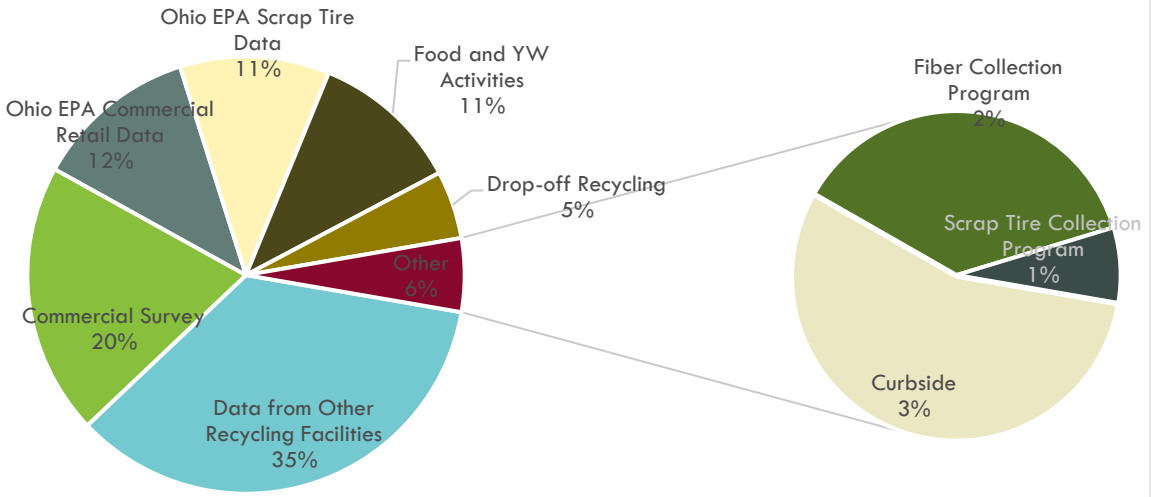

Figure H-15 Recovery from Program Source

recycling facilities such as MRFs. Tonnage reported through the commercial survey has declined in the past several years with a significant drop from 2017 to 2018 where tonnage went from 5,510 tons to 2,298 tons respectively. While the change in tonnage may reflect a decrease in recycling activity in the commercial sector, it may also be reflecting a decline in response rates. Based on this analysis the SWMD is collecting good commercial data, despite voluntary reporting, which is contributing heavily to reaching and exceeding the 25% residential/commercial diversion goal. The SWMD's survey process to focus on repeat responders builds routine and familiarity for recipients to respond. However, a low survey response or lack of reporting from one key business can impact and result in diversion fluctuations, which is expected with voluntary reporting.

A more specific analysis of program data shows that the drop-off recycling rate has not changed substantially in the last 5 years and curbside recycling has increased significantly, more than doubling since 2014. The increase in the curbside recycling rate is attributed to the City of Wilmington moving from a subscription based curbside program to a universal curbside program that does not require residents to sign up separately to participate along with supplying residents with recycling carts that have greater capacity.

Figure H-16 compares the SWMD's 2018 diversion rate to similar sized solid waste management districts. When compared, Clinton County's diversion rate is slightly above the average at 29% compared to the average of 27%. Comparing Clinton County regionally (Greene, FHPR, Warren, Adams-Clermont, and Hamilton) the average diversion rate is 30%, slightly above Clinton County.

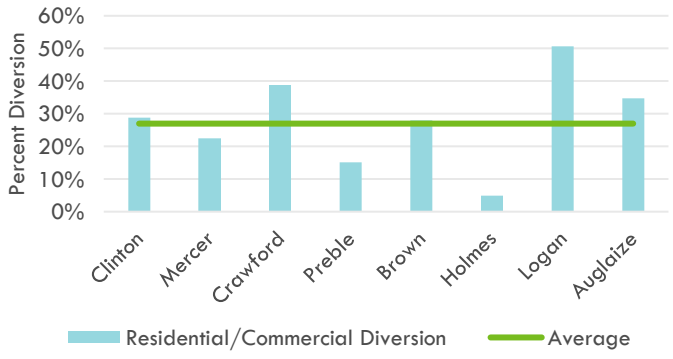

Figure H-16 Residential/Commercial Diversion

The SWMD compiled Table H-8 to benchmark programs in Crawford County and Logan County solid waste districts for similarities and /or identify best practices pushing them towards higher diversion. Logan County's residents are motived by Pay-As-You-Throw (PAYT) programs to incentivize diversion and they also service some businesses with a cardboard and paper collection route. Similar to Logan County, Crawford County provides a cardboard and paper collection route to businesses. The convenience of services is a contributing factor to higher diversion in both of these counties.

Table H-8 Benchmarked County Programs

SWMD	Clinton	Crawford	Logan
Curbside Programs	Yes	No	Yes, these are PAYT
Drop-off Programs	Yes	Yes	Yes, these are PAYT
SWMD provided cardboard and paper collection routes to businesses	No	Yes	Yes
Annual Survey of Commercial Businesses	No	Yes	Yes
Scrap Tire Collection Programs	Yes	Yes	Yes
In-District Compost Processing	Yes	Yes	No
Percentage composting contributes to total material diversion	~11% of material diverted	~28% of material diverted	~8% of material diverted

As discussed in Appendix E, cardboard, wood and ferrous metals are the three largest material categories recycled in the reference year. Figure H-17 depicts the recycled commodities as a percentage of total diversion.

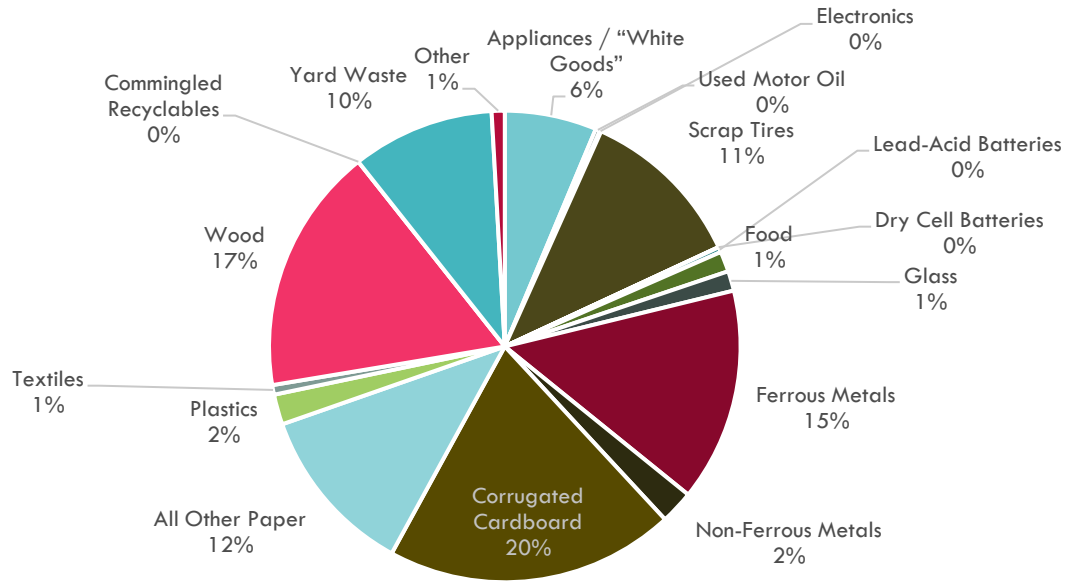

Figure H-17 Diversion per commodity (2018)

b. Conclusions/Findings

The SWMD's diversion rate has remained steady overall. While the SWMD is meeting the Ohio EPA residential and commercial diversion goal and is projected to continue to do so during the planning period, diversion is not currently anticipated to grow unless the SWMD actively seeks to add program access and obtain higher response rates from the commercial surveys.

Convenient cardboard and paper collection programs are best practice programs Crawford and Logan County SWMD's implement to demonstrate high diversion rates. Both of these programs require collection vehicles and some level of service and processing. Without jumping into "the businesses" of collection and processing, the SWMD could explore elements that could help develop the convenience. Such options may include applying for grants, offering grants specific to cardboard and paper, developing specific material focused education campaign/promotions, accept cardboard at drop-offs, etc.

Finally reuse infrastructure heavily falls on non-profits and their development of reuse centers. Potential opportunities to consider include compiling a resource guide to donating as well as assisting in the development of reuse centers. Program areas to consider implementing for this plan update to address waste minimization and reuse models are volume-based incentive-fee collection systems, education and outreach approaches, creation and promotion of a reuse and repair network.

8. Special Program Needs Analysis

Ohio Revised Code 3734.57(G) gives SWMDs the authority to fund a number of activities that are not related to achieving the goals of the state solid waste management plan. In addition, there are other programs that SWMDs fund that are not addressed in either the state plan or law. This analysis evaluates the performance and status of these activities and programs and the value to the SWMD.

a. Evaluation

Disaster Debris Management Plan

The SWMD has a Disaster Debris Management/Continuity of Government Plan. The Disaster Debris Management/Continuity of Government Plan outlines key functions of the SWMD in the event of a local disaster.

Litter Law Enforcement

Law enforcement is contacted when deliberate open dumping/abuse is detected at the drop-off locations. Law enforcement assists in identifying the individuals responsible and issuing citations for them to appear in municipal court. This is a time-consuming process but has proven effective in reducing open dumping and limiting contamination at the drop-off locations.

Other solid waste management districts provide funding to law enforcement offices for enforcement of illegal dumping and littering laws, illegal dump and litter cleanup and tire recycling collection/processing programs, as well as for litter collection/education. Figure H-18 shows funding provided to litter collection/education by Ohio solid waste management districts in 2017. Twenty-two out of the fifty-two solid waste management districts provide funding specifically for litter collection/education. Montgomery and Adams-Clermont Solid Waste Districts expended the most in 2017.

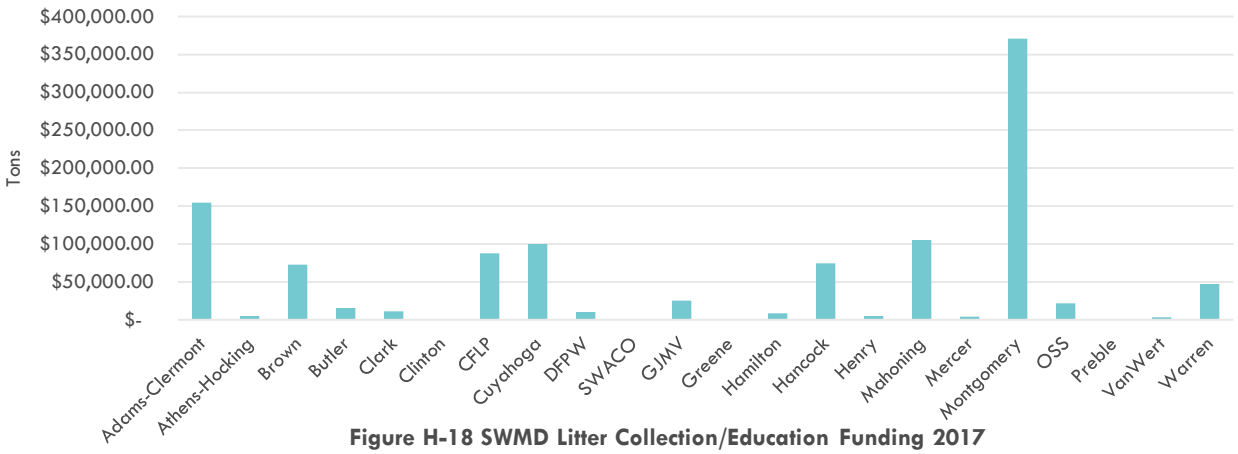

Figure H-18 SWMD Litter Collection/Education Funding 2017

Source: Ohio EPA Quarterly Fee Reports 2017, expense line item 2.m Litter Collection/Education

Figure H-19 shows funding provided to local law enforcement by Ohio solid waste management districts in 2017. Twelve out of the fifty-two solid waste management districts provide funding specifically for law enforcement. Stark-Tuscawarus-Wayne (STW), SWACO, and Coshocton-Fairfield-Licking-Perry (CFLP) Solid Waste Districts expended the most in 2017.

Figure H-19 SWMD Local Law Enforcement Funding 2017

Source: Ohio EPA Quarterly Fee Reports 2017, expense line item 7.b Local Law Enforcement

Literature and web searches provided the following information on program metrics:

SWMD	Metrics
Coshocton-Fairfield-Licking-Perry (2016 data)	81 citations, 48 convictions, 418 litter investigations
SWACO (2014 data)	38 convictions, 400 community service hours ordered, $79,129.74 ordered in restitution/fines

Litter Collection Program

The SWMD provides bags, gloves and other supplies to the Juvenile Probation Department, schools and civic groups to collect litter along roadways throughout the year. Litter collection occurs mostly through the spring and summer months.

b. Conclusions/findings

Funding for law enforcement and litter collection activities are not related to achieving the goals of the state solid waste management plan but do play a role in the SWMD's management. Research indicates individuals are substantially more likely to litter into dirty or already littered environments than into clean ones (Cialdini, Kallgren, & Reno, 1991; Geller, Witmer, & Tuso, 1977; Herberlein, 1971; and Reiter & Samual, 1980). These programs help keep the County litter free. The SWMD currently funds litter collection/education which provides bags, gloves, and other supplies to Juvenile Probation Department, schools, and civic groups. SWMD staff (indirect costs) work with local law enforcement to issue citations to violators when necessary. The SWMD does not have funding to support additional special programs.

9. Financial Analysis

The purpose of this analysis is to examine the SWMD's current financial position and assess the financial requirements and revenue sources throughout the next planning period. The SWMD is currently funded through revenues from tiered disposal fees, generation fees, and from the sale of collected recyclables. Additionally, the SWMD has received grants each year from 2014 to 2018.

a. Evaluation

Historical revenues are shown in Figure H-20. Revenue has remained fairly stable for the past five years, averaging $222,115 annually, and ranging from a low of $205,874 in 2014 to a high of $233,616 in 2017.

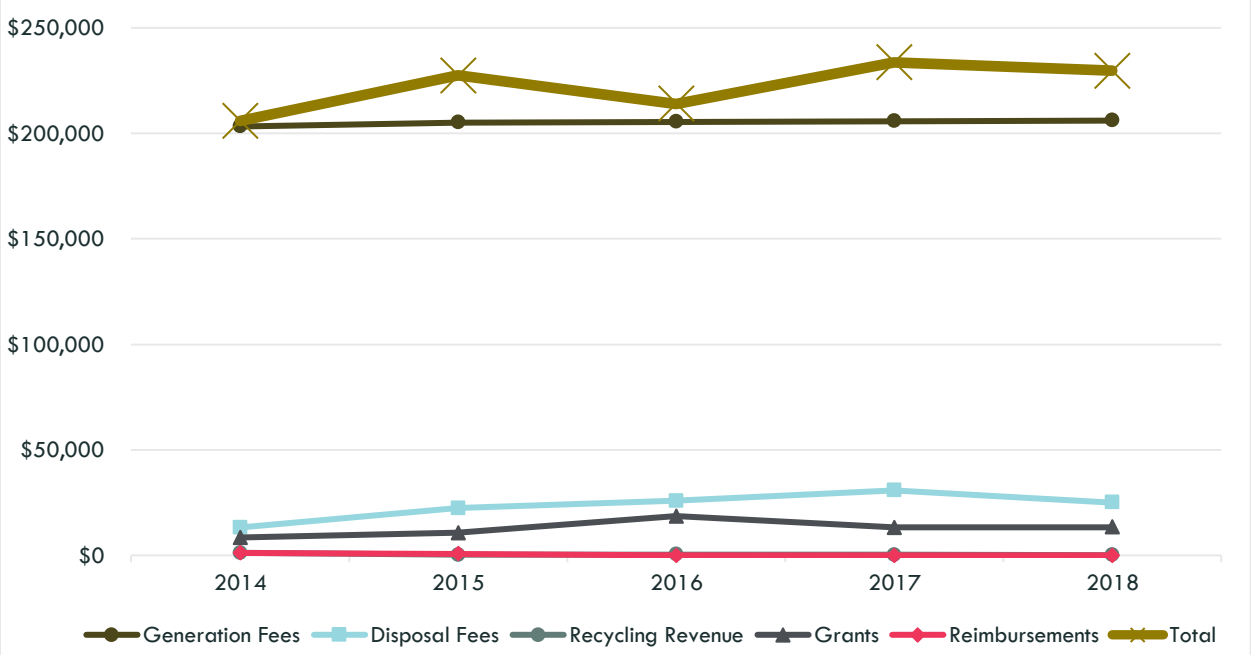

Figure H-20 Historical Sources of Revenue

The largest source of revenue for the SWMD is generation fees, which account for 83% of the SWMD's revenue on average over the past 5 years, as seen in Figure H-20. This is on par with historical revenue from generation fees. Revenue from disposal fees collected from solid waste disposed at the Wilmington Sanitary Landfill is the next largest revenue source, averaging about

10% of the total revenue. The average revenue from the disposal fees over the past 5 years is slightly above the historical revenue of 5-7% according to the 2016 Plan. This is due to Wilmington Sanitary Landfill accepting out-of-district waste. No fee increases have been made to the disposal fees since 1993.

As shown in Table H-9, the 2016 Plan's projected revenue is lower than 2018 actual waste receipts. Generation fee and disposal fee revenue was 3% and 38% greater, respectively, than projected. The projected $15,577 in disposal fee revenue from the 2016 Plan only accounted for in-district waste receipts. Wilmington Sanitary Landfill began accepting out-of-district waste, which positively impacted the SWMD's revenue stream. Additionally, the SWMD received $7,363 more in grant revenue than projected.

Table H-9 Actual vs Projected Revenues

Year	Generation Fees	District Disposal Fees	Recycling Revenue	Grants	Reimbursements	Total Revenue ($)
2018 - Actual	$191,068	$25,065	$103	$13,363	$0	$229,598
2018 – 2016 Plan projections	$184,469	$15,577	$0	$6,000	$0	$206,046

Overall, the SWMD's population is much lower than compared regional counties with the exception of Preble County, which is slightly smaller than Clinton County. Compared to surrounding solid waste management districts, Clinton County reported the second lowest total revenue and the fifth highest per capita revenues in 2018 as seen in Table H-10.

Table H-10 Benchmarked District Revenues

District	Type of Revenue	Fee	Revenue	Population	Per Capita Revenue
Warren	Tier Disposal Fee Generation Fee	$1/$2/$1 $0.5	$127,434.31	228,882	$0.56
Adams-Clermont	Generation Fee	$3	$651,358.22	230,877	$2.82
Hamilton	Tier Disposal Fee	$1/$2/$1	$3,226,195.74	818,939	$3.94
FHPR	Tier Disposal Fee Generation Fee	$2/$2/$2 $3	$688,733.16	206,741	$3.33
Clinton	**Tier Disposal Fee Generation Fee**	**$1/$2/$1 $6.50**	**$229,598.24**	**42,055**	**$5.46**
Greene	Generation Fee	$10	$1,051,532.37	167,575	$6.27
Preble	Generation Fee Designation Fee	$2.00 $7.44	$329,758.50	42,045	$7.84

Source: Solid Waste Management District Fee Summary: 2018 Ohio EPA Division of Materials and Waste Management

The districts with the higher populations calculate the lowest per capita revenue. The districts with the lowest populations have the highest per ton generation fees because waste disposal volumes in the low population districts tend to be less. Higher per capita districts benchmark greater revenues allowing for more services and programs.

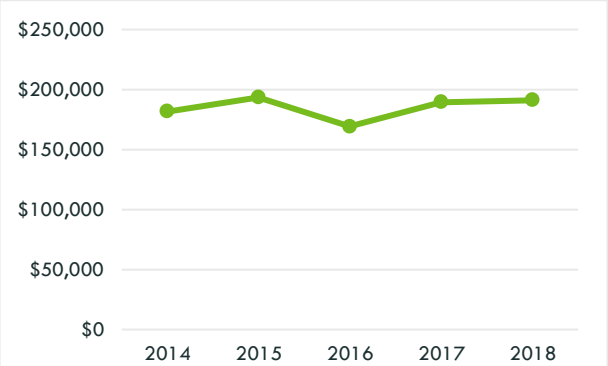

Figure H-21 Historical Generation Fee Revenue

The SWMD receives $6.50 per ton for municipal solid waste and industrial waste generated in the SWMD. Since the vast majority of the SWMD's revenue comes from the generation fee, the overall historical revenue for SWMD mirrors the generation fee revenue. Overall, the generation fee revenue has been fairly stable with a slight dip in 2016.

The SWMD's disposal fee is $1/$2/$1. For every ton of waste disposed at the Wilmington Sanitary Landfill, the only landfill in the District, the SWMD receives $1/ton for in-District waste, $2/ton for out-of-District waste, and $1/ton for out-of-state waste.

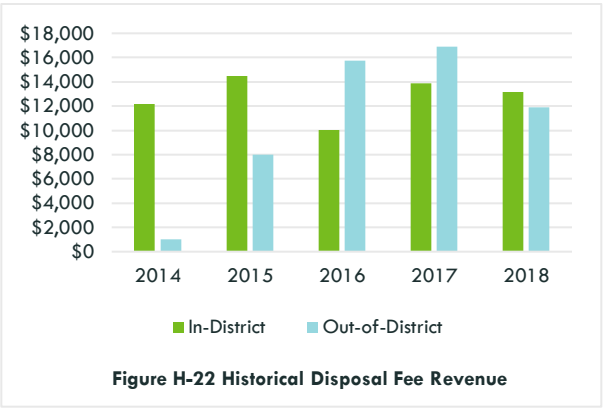

Figure H-22 Historical Disposal Fee Revenue

Over the past 5 years, the SWMD has not received any out-of-state waste. Out-of-district waste has increased substantially since 2014, with the greatest revenue generated in 2017. Revenue from in-district disposal fees has remained more constant over the past 5 years, dipping in 2016 slightly and then returning in 2017 and 2018 to levels comparable to 2014 and 2015.

Recycling revenue has declined significantly since 2014 from $1,230 to $103. The decline in revenue is a reflection of the decline in average commodity revenue since 2014.

Other revenues from grants, reimbursements, and recycling revenue averaged about $13,500 annually.

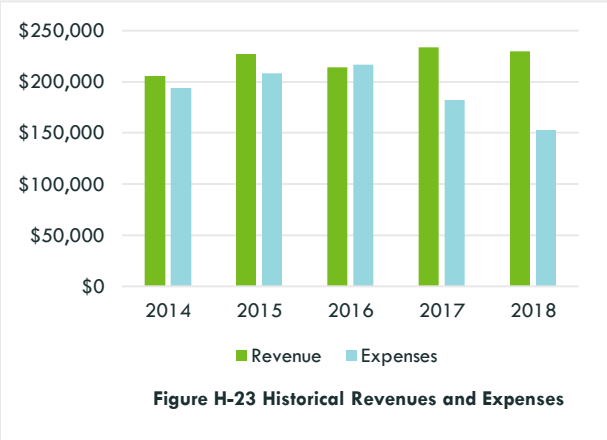

Figure H-23 Historical Revenues and Expenses

Over the past 5 years, revenue has been stable for the SWMD. Expenses have declined slightly over the past couple years. However, that decline is mainly attributed to changes in personnel. The SWMD's Education Specialist retired in July 2017 and the position went unfulfilled until 2020. Additionally, an employee with the SWMD chose not to take the County's health plan, reducing fringe benefit costs for the SWMD.

The SWMD's 2016 Plan projected expenditures in the early years at around $220K with an annual gradual rise. As shown in Table H-11, the actual expenses were less than forecasted in the 2016 Plan.

Table H-11 Actual vs Projected Revenues

Year	Total Expenditures ($)
2018 - Actual	$152,891
2018 – 2016 Plan projections	$237,178

One of the contributing factors to lower expenditures in 2018 was invoicing issues from the SWMD's drop-off service provider. Beginning in February 2018, the service provider had problems submitting correct monthly invoices. The SWMD held payment for services until the billing issues were corrected. That occurred in January 2019. Therefore 11 months of services were not paid until 2019. The amount of deferred expenses was $24,000.

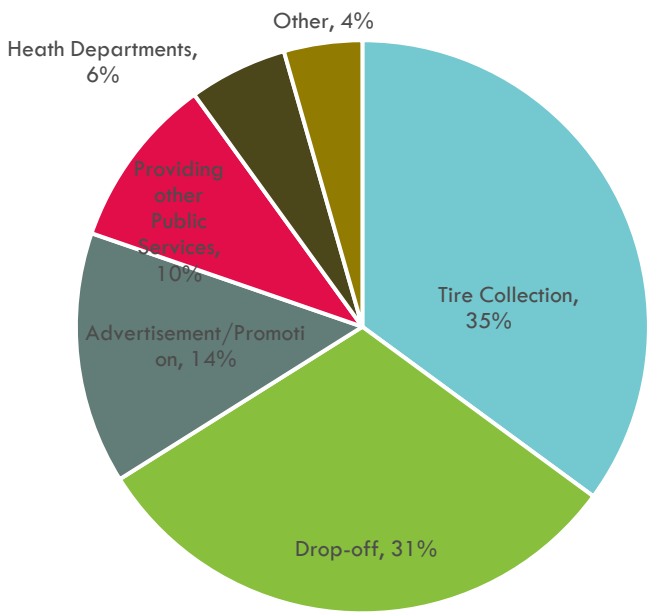

Figure H-24 Expense Distribution

The SWMD's program expenditures are depicted in Figure H-24. The larger program expenses in 2018 were tire and drop-off collections, accounting for just about 66% of total expenses. Typically, drop-off collection expenses is the largest expense category. Year 2018 is an anomaly for the drop-off collection expenses.

Comparison of neighboring solid waste management district program expenses is found in Table H-12. On average, regional districts spend $3.40 per capita. The SWMD is slightly above the

average at $3.64 per capita expenses. Preble County has the highest per capita spending at $5.81 per person, while Warren County has the lowest at $0.62 per person.

Table H-12 Benchmarked District Expenditures

District	Expenditures	Per Capita Expenses
Warren	$142,764.67	$0.62
Adams-Clermont	$547,439.42	$2.37
Hamilton	$2,592,057.24	$3.17
FHPR	$671,353.35	$3.25
Clinton	$152,890.90	$3.64
Greene	$829,446.53	$4.95
Preble	$244,228.45	$5.81

Source: Solid Waste Management District Fee Summary: 2018 Ohio EPA Division of Materials and Waste Management

Figure H-25 shows the historical revenues, expenses and fund balance.

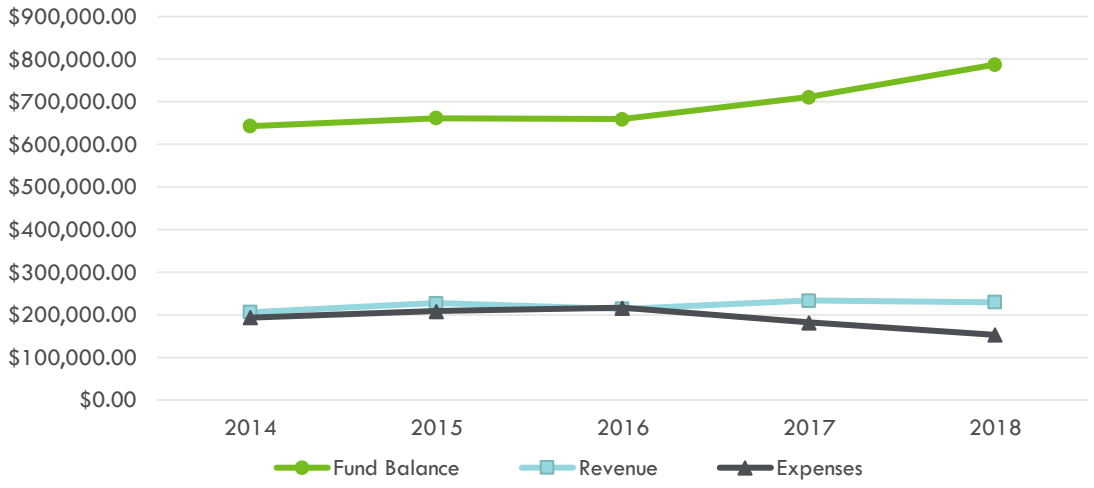

Figure H-25 Historical Fund Balance

b. Conclusions/Finding

Funding sources are stable. The SWMD is building the fund balance due to 2 main factors:

- Wilmington Sanitary Landfill accepting out-of-district waste levied at $2.00 per ton, and
- SWMD personnel changes.

Maintaining a twelve-month reserve allows for the SWMD to maintain the current program spending through the planning period.

10. Regional Analysis

The purpose of the regional analysis is to consider regional opportunities for collaboration and partnerships, and to also consider how the policy committee's decisions may impact other stakeholders in the region.

a. Evaluation

WASTE IMPACTS

Wasteshed is a term used in the materials management field to describe where, and how, materials 'flow' throughout a given geographical area. Much like a watershed, waste is not confined to city or county boundaries and can flow along multiple channels. Unlike water however, the flow of waste is based around economic drivers, the presence of facilities, roads and highways, and contracts between haulers and processors.

Of the 6 neighboring SWMD's, only one, Brown County, to the south has a landfill. The Clinton County SWMD exports about 43% of trash. Landfills in Hamilton County and Brown County receive the majority of SWMD exported trash.

More than half of waste disposed from Clinton County, 57%, was direct hauled to Wilmington Sanitary Landfill. In 2014, 99% of the waste accepted at the Wilmington Sanitary Landfill originated from Clinton County. That began to shift in 2015 with more out-of-district waste being accepted so that in 2018, 80% of the waste accepted at Wilmington Sanitary Landfill was in-district waste and 20% was out-of-district waste. The Landfill has not accepted any waste from out-of-state.

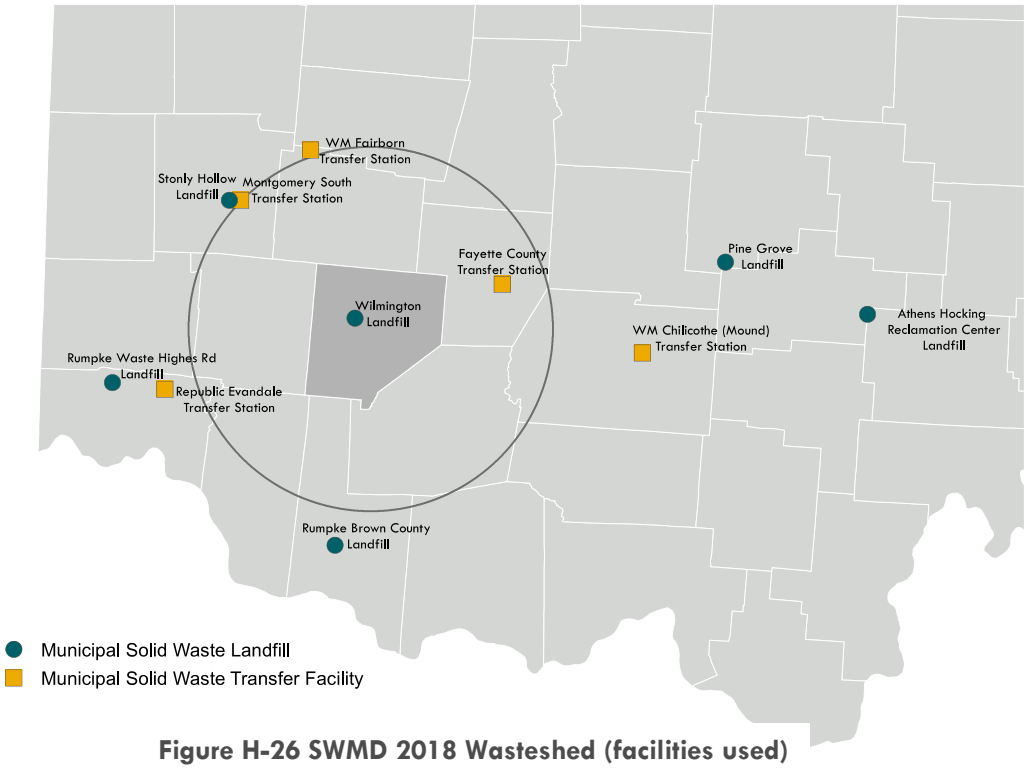

Figure H-26 SWMD 2018 Wasteshed (facilities used)

DIVERSION IMPACTS

There are no single stream MRFs within the SWMD or located in the immediately adjacent counties. There are three Southwest Ohio regional MRFs located in Hamilton, Brown, and Montgomery Counties. The MRFs located in Hamilton and Montgomery Counties operated by Rumpke is where the SWMD's recycling is currently processed. The SWMD is not sending material to the Brown County MRF, which is County operated but has approached Brown County for potential processing capacity. At this time Brown County MRF is not able to process additional capacity. Looking forward for such an arrangement would require more planning, complete stakeholder buy-in and formal agreements.

Regionally the private sector MRFs located in the population hubs of Cincinnati and Dayton have capacity to support the volume of single stream recyclables. However, with both cities around an hour drive one-way, there is the potential for hauling economic gains to occur with consolidation and transfer of recyclables, rather than direct hauling to the MRFs. If the SWMD were to work towards a transfer operation of recyclables, potential hauling savings costs could provide the SWMD with additional funding to expand recycling programs.

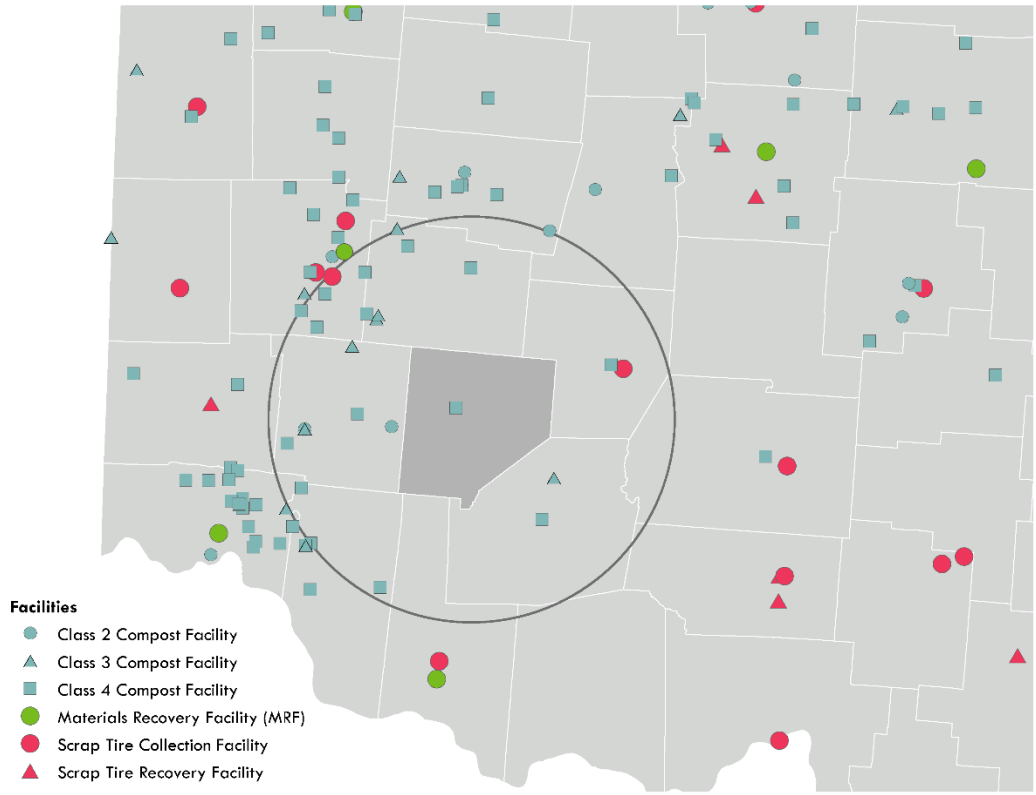

Figure H-27 Regional Diversion Facilities

Regionally, organics (includes a variety of biodegradable feedstocks, including yard debris, wood chips, brush, wood waste, manure, household organics, soiled paper, and food scraps) diversion facilities (Class II, III, and IV) are located within the SWMD or in the immediately adjacent counties. While organics diversion facilities are within a reasonable distance there is a lack of collection infrastructure to transport feedstock to the processing facilities. Collection of organic waste is integral to any composting system and economics is generally more than twice the processing cost on a per ton basis.

The SWMD has not identified brokers (middle-man connecting commodities to other parties) operating in the County. Two recycling processors are known and operating in the SWMD. One processes wood pallets and the other processes primarily high- and low-density polyethylene (HDPE and LDPE) and turns these materials into durable plastic decking. The SWMD could benefit by a local or regional processor of plastics #3-#7 (or any), which may help to divert additional plastic materials from the landfill.

Of the three private sector haulers operating in the SWMD, only one, Rumpke, offers curbside recycling services to the residential and commercials sectors. Wilmington Sanitation provides curbside recycling collection to residents of the City of Wilmington.

In addition to infrastructure limitations, recycling markets are at all-time lows and reverberations are being felt throughout the US and in Clinton County. In the past 5 years, recycling revenue from the sale of recyclables has declined from approximately $1,200 to just over $100 per year despite collecting more material at drop-offs in 2018 than 2014. Higher costs for recyclable processing and reduction in the types of accepted materials demonstrate the economic and business models are not working. A fundamental issue is the lack of domestic end markets to handle the sudden oversupply of recycled materials that no longer have a home overseas.

b. Conclusions/Findings

The region has adequate capacity and infrastructure for managing trash and noticeable gaps in the diversion infrastructure. Regionally, available recycling infrastructure is dominated by Rumpke operating in Southwest Ohio's population hubs of Cincinnati and Dayton. As one of the most rural solid waste management districts in the region, the SWMD may lack leverage for recycling contracts and hauling that larger districts have. Potential opportunities include:

- The SWMD could look to consolidating recyclables (transfer) within the SWMD before hauling to regional MRFs, or collaborating with immediately adjacent counties to gain some economies of scale that larger districts might have when working with Rumpke.
- Organics collection economics is prohibitive for expanding diversion of organic materials. The SWMD could look to focus on additional reduction strategies for managing this waste stream.
- The SWMD has power to collaborate with MRFs to process additional materials thereby diverting more waste from the landfill. A key component in the region is lack of #3-#7 plastics processors. The SWMD could look to develop a regional stakeholder group to explore and attract processors to the region.
- Limited competition in haulers may result in more expensive costs because of lack of competitive pricing.

11. Population Analysis

The SWMD does not have a rapidly changing population. According to the SWMD ADRs, population has remained stable at around 42,000 residents from 2010 to 2018. Another source, the Clinton County Business and Economic Development Department, recorded an average annual population change from 2010 to 2018 of 0.05%. During this same time period, Ohio's population grew 1.3%.

Throughout the planning period (2022-2036), population is anticipated to grow steadily at 0.04% annually, slightly below the previous growth according to the Business and Economic Development

Department. While a more conservative growth estimate was selected for planning purposes, it should be noted that the Business and Economic Development Department estimates that Clinton County's population will increase at a greater rate in excess of 0.1% through 2023 before slowing, falling below 0.04% in 2028, and finally anticipating a population decline starting in 2031. The Business and Economic Development Department uses a software called JobsEQ to project population based on labor market data. The differences in total population projected for the solid waste plan compared to the Business and Economic Development Department are not significant enough to impact the overall solid waste management planning needs of the SWMD.

The SWMD has a low population density of 103 people per square mile. The average population density is a balance of villages within the SWMD that have approximately 1,300 people per square mile on average, the City of Wilmington with a population density of approximately 1,100, and the townships in which many have a population density less than 100 people per square mile. Wilson Township has the lowest population density of only 17 people per square mile.

According to the US Census, the poverty rate in Clinton County, Ohio has fallen from 16.9% in 2014 to 13% in 2018, so that the County in 2018 had a lower poverty rate than Ohio state average of 13.9%. While this is certainly good news for Clinton County, it is not clear yet how COVID-19 may impact poverty rates in the planning period.

Nearly one-third of the SWMD's population lives in a rented home. It can be difficult to get renters on board with recycling programs, and often more education and outreach is required for this population due to the more transient nature of this population group.

2018 Population	42,055
Median Income	$51,354
Percent of Population Below the Poverty Line	13%
Percent of Population in Owner Occupied Homes	68%

Source: US Census 2018 ACS 5-Year Estimate

12. Data Collection Analysis

This analysis evaluates the SWMDs current data collection efforts and identifies ways to improve its data.

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 the SWMD is to divert materials from landfills, therefore an accurate measurement of diversion from landfills is needed. The data collection process from beginning to end for each sector is described below.

Data availability has not prevented the SWMD from achieving Goal #2 of the State Plan, which requires a waste reduction and recycling rate of at least 25% for the residential/commercial sector. In the 2018 reference year, the SWMD's residential/commercial sector achieved a 28.7% waste reduction and recycling rate. Even though the 2020 State Plan no longer establishes the 66% industrial waste reduction and recycling rate, the SWMD's industrial sector achieved a 96.8% rate.

The SWMD devotes staff time to overseeing and participating in a comprehensive data collection effort, as well as hiring a consultant.

a. Evaluation

Residential:
The SWMD gathers data from service providers, non-profits, internal SWMD tracking of drop-off and special events, City of Wilmington curbside data, and Ohio EPA annual published data.

Commercial:
The SWMD gathers data from commercial businesses and Ohio EPA annual published data. According to U.S. Census data, the SWMD has about 735 total employer establishments[20] (including 363 with less than 5 employees), and approximately 523 commercial businesses[21] with NAICS codes related to wholesale trade, retail trade, accommodation and food services, arts, entertainment, and recreation, etc. The SWMD has spent considerable effort, time and money in the past to survey each individual commercial entity resulting in meager responses. Mailing over 150 survey packets (cover letter, survey, material data sheet, and stamped return envelope) to receive low responses was a costly endeavor. To streamline the process, priority has been placed on obtaining responses from the largest businesses - first and past responders, second.

The SWMD surveys businesses every other year. In the survey year, reminder post cards are mailed to all businesses. The survey form is available on the website for downloading. Past responding businesses are mailed a hard copy survey. Survey recipients are given the option to submit their completed surveys via direct mail, email, or fax. The quantity of follow-up phone calls made to each survey recipient varies on a case-by-case basis. This change in mailing post card reminders decreased administrative costs while maintaining comparable response rates as shown in Figure H-28. Figure H-28 represents total response rate, no matter if a post card or hard copy survey was mailed.

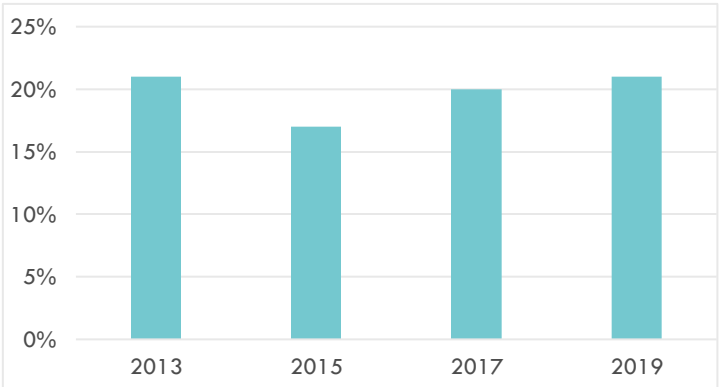

Figure H-28 Commerical Response Rates

Data analysis is conducted on the returned data to understand how materials are obtained and managed by entities that submit recycling information. To avoid double counting, the SWMD strives to identify if there are any materials that might be reported by more than one entity.

Across the state of Ohio, many districts are challenged with low response rates. The SWMD's survey mechanisms are similar to other district survey mechanisms. One district employing an email survey mechanism, SWACO (Franklin County, Ohio), experiences challenges with maintaining an up-to-date email database. Employing an email survey also requires follow-up phone calls to non-

[20] https://www.census.gov/quickfacts/fact/table/clintoncountyohio/PST045219
[21] https://data.census.gov/cedsci/table?g=0500000US39027&d=ANN%20Business%20Patterns%20County%20Business%20Patterns&table=CB1700CBP&tid=CBP2017.CB1700CBP&hidePreview=true&lastDisplayedRow=18

responders. SWACO also uses a mailed survey for those businesses where an email contact was not provided. Emailed surveys achieved a higher response rate than mailed surveys (statistics do not weigh number of calls made for emailed surveys versus mailed surveys). Both mechanisms require a considerable amount of staff time and effort to achieve responses.

Industrial:

The SWMD gathers data by surveying the industrial sector businesses and Ohio EPA annual published data. The same survey procedure described for the commercial sector is also used for the industrial sector. Figure H-29 depicts the industrial response rates received. Figure H-29 represents total response rate, no matter if a post card or hard copy survey was mailed.

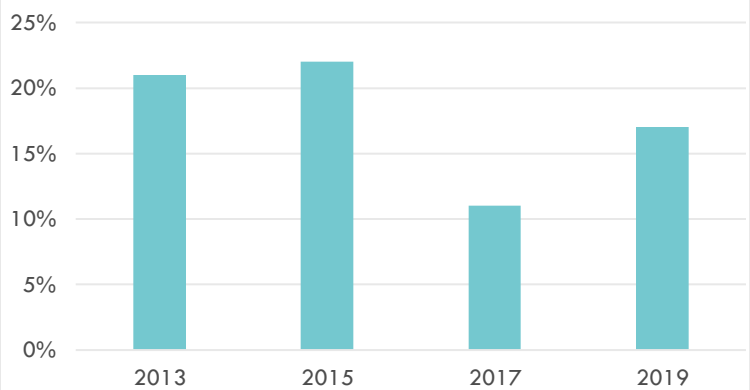

Figure H-29 Industrial Response Rates

The SWMD supported 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 the Ohio Environmental Protection Agency (Ohio EPA). This survey provided businesses the opportunity to complete the Ohio Recycles Survey online. Unfortunately, Ohio EPA could not maintain the program.

b. Conclusions/Finding

Overall, data collection is vital to measuring the waste reduction and recycling rate. The post card mailings keep administrative costs lower and return comparable response rates. Phone follow-up efforts are needed to return survey responses. The SWMD could consider surveying annually but the data is not conclusive to show annual surveying would return better response rates. The SWMD could consider adding on online capability for completing the survey, such as JotForm or another platform. This type of capability will provide more convenience to those completing the survey, plus compiles the data for the SWMD. Another outreach piece is to advertise the total diversion rate after the survey, letting businesses know their data contributes to the success of the SWMD surpassing Ohio EPA goals.

13. Education and Outreach

a. Evaluation

In accordance with Goal 3 of the 2020 State Plan, each SWMD is required to provide four minimum education programs: website, resource guide, infrastructure inventory and speaker/presenter.

Website

The SWMD maintains a website at www.co.clinton.oh.us/Recycling. The website is managed by Clinton County, and in 2020 received an update. As a result of the update, the SWMD has direct access to post or change information on the webpage. With the update, the SWMD has more capability for tracking web stats and flexibility for posting/adding information. The website is a resource which provides much of the information that residents and educational institutions would seek. The homepage is key to user navigation and has the ability to be updated regularly to reflect recycling services, seasonal program info, and simple opportunities. The webpage provides an inventory of the infrastructure, drop-off collection locations, information about tire collection events and available education and outreach opportunities.

Comprehensive Resource Guide

The SWMD's webpage includes a "Recycling Resources" search feature for searching for recycling outlets for materials. These include retailer-based businesses, scrap yards, District drop-offs, etc. The SWMD updates this annually to ensure the information remains accurate.

Infrastructure Inventory

Infrastructure inventory can be found in the Plan, which is updated every five years, and specific infrastructure is identified on the website. Web infrastructure is updated at least annually, or more frequent if changes occur.

In accordance with Goal 4 of the State Plan, the District is required to provide education, outreach, marketing and technical assistance to identified target audiences.

Target Audience: Industrial, Commercial, and Institutional (This analysis combines Industrial with Commercial and Institutional because education programs and outreach are similar.)

The Industrial, Commercial, and Institutional sector is well reached through a combination of programs, recognition, and grants. Three programs are specifically designed to target this sector:

- Commercial/Industrial Recycling and Recognition program
- Commercial/Industrial Technical assistance
- Go GREEN Grants

Recognition and technical assistance are provided annually, and there appears to be a good reach of audiences and requests. The programs are designed to encourage, expand, and/or increase recycling. A focus for this sector is cost analysis to demonstrate cost savings or at least cost neutral benefits to recycle. A challenge for the SWMD is changing the culture to place recovery and recycling above the cost of service, and/or getting businesses to build the cost into their business model.

An average of five walk-throughs, five waste assessments, 20 follow-ups and over 50 businesses are annually recognized.

Target Audience: Elected Officials

Elected officials are reached through two programs: Recycling Outreach to Communities and Countywide Curbside Recycling Promotion. These programs connect the SWMD and elected officials one-on-one, and are designed to improve communication with elected officials to promote curbside recycling. Since the program kick-off in 2016, the SWMD has engaged with at least one community annually. Focusing on outreach to specifically promote curbside recycling, the SWMD directly calls elected officials and, if requested, conducts surveys of their residents to determine interest in curbside recycling. The SWMD conducts the survey and, if responses are favorable, then

assists with attracting haulers, contract technical assistance, writing grants, and guidance as needed.

The one-on-one outreach to this sector has been successful in building trust and establishing relationships. Through this outreach the SWMD learned:

- Haulers are not willing to provide curbside recycling services in some areas.
- An overwhelming number of residents are interested in curbside recycling service.
- Elected officials are willing to try to find solutions.

Consortiums could be attractive to haulers. This is a structure the SWMD could explore next with elected officials.

Target Audience: Schools

Education to school-age children concentrates in delivering presentations and conducting school contests. Presentations are education-based and teach students on various topics such as recycling, litter prevention, and other solid waste related issues. Typically, over 150 presentations are given in a school calendar year. In 2018, the number declined to 94 because the SWMD's Education Specialist retired and the role was filled by the SWMD Coordinator and Recycling Specialist. Contests are held twice a school-year for students in grades K-5. Winners are given recognition after each contest.

Teachers are made aware of the presentations and contests through the *Recycling Educator* newsletter. This publication is produced and distributed at the beginning of the school-year. It's also available on the webpage. Each year the SWMD receives a tremendous number of requests for presentations.

To benchmark, Clinton County looked to Logan County and Wood County, two demographically similar counties. (Note: Wood County's population is just over three times Clinton County's population). Both Logan and Wood Counties also conduct presentations for school-age children. Wood County conducts about 70 presentations a year, and information on the number of presentations for Logan County was not found via a web search. To add to education, both County's offer tours of facilities. This is convenient because these counties both have in-county infrastructure to tour. For the SWMD, in-county infrastructure consists of Wilmington Sanitary Landfill, which could be of interest if the logistics could be arranged. Not right next door but also not completely inconvenient is Montgomery County, which has an Education Center and Rumpke's glass recycling MRF. Both of these are available for tours. In 2016 the SWMD offered a P.E.A.R grant to schools to assist with transportation to these field trips. These tours supplement the presentations and visually resonate with learning.

Another education element Wood County provides is a "Resource Library". The resources are purchased by the SWMD and include curriculum guides, videos, books, magazines, etc. This is available to teachers and anyone in the district.

Realizing the importance of changing behavior and getting students to recycle, the SWMD provided bins for every classroom in schools with recycling programs. Practicing and performing recycling at school may push to change behaviors at home.

Beginning in 2016, the SWMD partnered with the Clinton County branch of the Ohio State University Extension Office by participating in the *Real Money, Real World* program. This is a

hands-on program that gives young people (8th grade students) the opportunity to make lifestyle and budget choices similar to those they will face as adults. SWMD staff participates in the simulation phase of the program by volunteering to serve at specific stations visited by students, and providing information on recycling, opportunities, and recycled-content materials. Presenting recycling within this program as a lifestyle choice is an excellent method to reinforce the message and inspire behavior change.

Another key education element is outreach to the school administrators. This is performed through one-on-one, in-person or phone meetings with the school administrators to promote recycling programs. A major push by the SWMD occurred in 2016 to expand programs to recycle commingled materials as well as paper. The result of this effort (phone calls, meetings, cost analysis, and contract assistance) is recycling expansion in many schools.

Additionally, the Commercial Recycling Recognition program also recognizes schools for their accomplishments.

The SWMD's program is solid and well designed to educate school-age children, to inform, encourage and excite them to make lifestyle changes that they will implement as adults, to outreach to administrators to implement on-site school recycling programs, to provide recognition, and to support through grants if needed.

Target Audience: Residents

One target audience the SWMD has not explored is residents, fully for understanding the needs of this target audience to develop specific outreach. The SWMD's tools to reach this audience is social media and in-person engagements at events. Facebook was launched in Fall 2019 and currently has 367 followers (as of July 2020). Facebook allows for a two-way conversation with residents. The SWMD posts scrap tire event information, recognition, drop-off recycling materials accepted, "Get Caught Recycling" awards, etc. To engage residents the SWMD will plan for regular management of social media. Often an inactive social media account can pose a greater risk than not having one. Social media also offers an unparalleled way to measure interaction with the SWMD's target audience through reports on audience engagement. The SWMD can use these reports to create a baseline and set goals for future online engagement measurement.

To best reach residents in today's world of information overload, the SWMD should consider creating short - no more than one-minute - videos to focus on key educational initiatives, (i.e. proper recycling to avoid illegal dumping, HHW, and other ways to reduce waste). Videos are more popular than ever and are a worthwhile investment to deliver one-way messages in a variety of media: website, YouTube, social media, etc. These videos could be added to each community's website within the SWMD as an additional educational tool to engage their residents and businesses. Videos also provide another communication measure as it tracks the number of people the videos reach.

In-person engagements are education-based and not designed as behavior changing outreach to residents. The SWMD has several education engagement opportunities such as the recycling display that is rotated around local libraries and municipal buildings throughout the County, Civic Group Presentations (approximately 8-10 presentations annually), and School Open House Events (targeting parents and guardians of students). These events serve a purpose of educating residents about recycling, litter prevention and District recycling programs. In recent years the SWMD has observed School Open House Events are not very effective for disseminating information. The

SWMD also distributes promotional items at these events. Promotional materials contain recycled content materials to close the loop and reinforce the message.

In order to design an outreach campaign to change behaviors, the SWMD will need to take several best practice steps as outlined here:

Research - the first step for successful campaign
An incentivized baseline survey to discover the knowledge and interest of target audience in whatever topic is decided upon should be distributed. The knowledge gained from this survey can be used to discover barriers the SWMD may have to promoting and future potential of implementing an in-house recycling program. The baseline survey should be repeated periodically as programs change and recycling infrastructure grows. This research can also help identify barriers.

Planning
Successful planning will set goals and objectives to meet with the campaign based on the outcome of the research.

Implementation
Implement the outreach campaign for a set amount of time and measure during the time.

Evaluation
Post-campaign research is also strongly recommended to determine if the educational and outreach tactics reached the target audience and encouraged a sustainable behavior change.

Types of behavior change campaigns other SWMD's have conducted include:

- Multi-family facility manager outreach to understand barriers for lack of recycling programs.
- Drop-off contamination campaign to educate residents about the right materials to recycle in drop-off bins.
- Commercial program outreach to connect businesses with resources to assist them in taking the initiative to recycle.

14. Processing Capacity Analysis

a. Evaluation

A MRF is a specialized facility that receives, separates and prepares recyclable materials for marketing to end-user manufacturers. Materials collected through Wilmington's curbside program and the SWMD's drop-off program are sent to MRFs. Table H-13 identifies the MRFs used by the SWMD in 2018.

Table H-13 MRF Processing Capacity

Material Recovery Facility	County	Type Ownership	Material Processed	Processing Capacity (TPH)
Rumpke Recycling - Dayton	Montgomery	Private	SS, MS, Blue bag MRF	14 TPH
Rumpke Center City Recycling - Hamilton County	Hamilton	Private	SS	27 TPH

Rumpke Elmwood Recycling Cincinnati	Hamilton	Private	Per item basis, call Rumpke for assistance	unknown

Notes: SS = single stream, MS = multi stream, TPY = tons per year, TPH = tons per hour

The Rumpke Recycling MRF located in Montgomery County is a Category III facility, which pre-sorts, compacts, and transfers recyclables. Once the material is sorted at the Dayton location, the materials are sent to other locations. The screened glass will be sent to a processor and the other materials will be sent to Rumpke's Cincinnati MRF, which processes 27 tons per hour. Rumpke processes glass bottles & jars, aluminum & steel cans, plastic bottles & jugs, mixed paper, cardboard, and cartons. Rumpke's Elmwood Recycling facility is a facility that manually sorts through materials, divides into recycled commodities and searches for end users. These materials are not as easy to bale or send through MRF machines.

Rumpke Recycling Dayton and Rumpke Center City Recycling in Hamilton County are 37 and 48 miles from the center of Clinton County respectively. There is only one other MRF that is within this range, the Adams Brown County Recycling, which is owned and operated by Brown County. The next nearest MRFs are all greater than 50 miles from Clinton County.

Regional facilities from center of Clinton County as shown in Table H-14.

Table H-14 MRF Processing Capacity

Name	Distance (miles) from SWMD Office
Rumpke Dayton MRF	37
Rumpke Center City Recycling	48
Rumpke Recycling Columbus	68
Logan County Solid Waste	71
Adams Brown County Recycling	43
Athens-Hocking Recycling Center	107
Auglaize County Processing	96
Union County Recyclers	96
Shelby County MRF	74

APPENDIX I CONCLUSIONS, PRIORITIES, AND PROGRAM DESCRIPTIONS

A. Actions and Priorities

The 2016 Plan was developed to meet the 2009 State Plan goals. To fulfill the directives in Ohio Revised Code Section 3734.50, the SWMD's Plan must demonstrate having strategies and programs in place to address all of the required goals. This 2022 Plan Update is prepared to meet compliance with the 2020 State Plan. Appendix K shows the SWMD's progress to meeting Goal 2 of the 2020 State Plan. In order to obtain approval from Ohio EPA for the solid waste management plan, SWMD must demonstrate being able to achieve either Goal 1 or Goal 2. The SWMD demonstrates Goal 2 by diverting 28.7%.

This Appendix describes the accomplishments of the strategies/programs and their future direction for the 2022 Plan.

1. Actions* (what could be addressed)

The evaluation in Appendix H evaluates the SWMD's performance of strategies/programs in offering and maintaining services as outlined in the 2016 Plan. The process of the evaluation shows whether actual performance is what was expected or desired. If strategies/programs didn't perform as intended or challenges were identified, then suggestions were provided to strengthen programs, improve performance, and/or increase effectiveness. The table below is a quick summary of conclusions and findings found from the evaluation.

Table I-1 Program and Strategy Summary

Analysis	Strengths	Areas for Improvement/Specific Actions
Residential - curbside	District grants and assistance available to apply for Ohio EPA grants. The largest community population base, City of Wilmington, provides a curbside program.	Continue to encourage other communities to implement curbside recycling. Since collection service in County is lacking, explore consortiums as a potential solution.
Residential – drop-off	Available recycling opportunity to areas not served by curbside. Wilmington-West site is largest and most frequented site from users throughout the county.	Some underused sites. Restructuring and consolidation to help with costs and expand service offerings. Add security camera monitoring. Continue with enforcement of illegal dumping at drop-off sites. Contract for site monitoring. Expand to include cardboard recovery.
Commercial/Institutional	The SWMD offers recycling containers to schools, government office, and churches. Majority of the schools in the District participate in a recycling program. The District offers source reduction information and waste audits to businesses. Many touch points with this sector.	Work with Chamber of Commerce and Commissioners to attract businesses that use recycled feedstock. Highlight businesses keeping it local in social media (e.g. restaurants donating food to food banks, repair shops giving materials a second life, etc.)
Industrial	Industrial waste and reduction rate meets goals.	No changes
Waste Composition		Residential waste composition study shows fiber (paper, cardboard, etc.) is largest material in the waste stream. Expand cardboard and fiber collection in county. Plastics continuing to grow in waste stream, and local viable markets for various plastics is a barrier. Food waste composting

Analysis	Strengths	Areas for Improvement/Specific Actions
		infrastructure is not within a reasonable distance, but reduction and reuse are strategy areas.
Economic Incentive	District grants support target audiences and infrastructure development.	Continue to offer grants. Modify Go Green Grant to bi-annually to increase funding level.
Restricted and Difficult to Manage Waste	Education. Scrap Tire Collection Events.	Hold annual scrap tire collection events even if grant funding is not available.
Diversion	Residential/commercial waste reduction rate meets goals at 28.7%. In-person meetings with communities to encourage curbside programs and provide technical assistance.	Target cardboard to increase diversion. Conduct a pilot PAYT drop-off at the Wilmington-West location. Incorporate food waste prevention into education and outreach. Collaborate with other local groups to encourage backyard composting.
Special Programs	Litter collection activities and enforcement.	No changes
Financial	Stable funding source. Fund balance available. Grants received.	Continue to seek grants from industry associations or others to help with projects.
Regional	Infrastructure for MRFs and landfills available within reasonable transport distance. Acceptance of out-of-district waste at Wilmington Landfill has added additional revenues.	Continue to meet with regional solid waste districts to discuss regional solid waste issues.
Data Collection	Streamlined process. Maintaining response rate. Continue to demonstrate above 25% diversion rate.	Add direct online data entry capability for commercial and industrial businesses to enter data. Use social media reminders to submit data at appropriate time.
Education/Outreach	The District now (year 2020) has a full-time Education and Outreach Specialist. School outreach and presentations. Incorporation of social marketing tools for behavior change.	Increase social media presence. Track visitors to website. Add food waste minimization education and tips on social media outlets. Add dedicated business resources page on Website – highlight waste assessments, Ohio Materials Marketplace, etc.
Recyclable Material Processing Capacity	Ample capacity provided by private sector MRFs.	Continue to engage with MRFs to understand materials acceptance list, contamination issues, and any challenges.

*The areas of improvement do not commit the District to undertake every specific action. To help the District determine priority areas for actions, the District staff engaged in a strategy session. Through this session a broad goal to achieve greater than 25% residential/commercial diversion rate and lessen the dependency on drop-off recycling by enhancing curbside recycling was established. With this goal in mind, strategies and actions to accomplish this goal were discussed, identified, and prioritized.

2. Priorities

Priority areas to focus efforts in the 2022 Plan include:

Priority Program	Priority Area
Full-Time Drop-off	Optimizing drop-off locations
Fiber Collection Program	Enhancing fiber, specifically cardboard, collection
Data Collection Program	Collecting data
Countywide Curbside Recycling Promotion	Engaging community elected officials for curbside recycling
Social Media Outreach	Increase social media presence and develop short videos
Scrap Tire Collection Program	Continue holding annual scrap tire events

Strategies/programs being implemented currently address these priority areas. However, based on the evaluation, the programs can adapt specific actions to continue to progress towards the broad goal.

B. Programs

Residential Recycling Programs

ID	Name	Start Date	End Date	Goal
Non-Subscription Curbside				
NSC1	Wilmington City	ongoing	ongoing	1 and 2

The City of Wilmington offers curbside recycling service as part of its residential waste collection program. Materials accepted include paper, cardboard, plastic bottles and jugs, glass bottles and jars, cartons, and metal cans. Exploring ways to improve the efficiency of the program and services, the City applied for and received an Ohio EPA Community Grant to install a compactor in 2014. Collected materials were then loaded into the compactor and compacted before transporting to the MRF. The compactor maximized load capacity to reduce hauling costs. In 2015, the City applied for and received an Ohio EPA Community Grant to purchase a recycling truck and carts and/or small dumpsters to expand recycling to businesses and multi-unit dwellings. In 2017, another Ohio EPA Community Grant was received to provide all residents with 65-gallon recycling carts. The program also changed from subscription to non-subscription.

Program stats since 2014 are shown in the table below.

Year	Program Type	Tonnage Recycled	Household Participation[a]	Program Change
2014	Subscription	125	50%	
2015	Subscription	144	55%	Added compactor
2016	Subscription	286	60%	Added recycling truck and businesses
2017	Subscription	78	60%	
2018	Non-Subscription	334	75%	Added carts and changed to non-subscription

[a]Based on number of households that have a bin.

In Spring 2018, the subscription bin-based program changed to non-subscription cart-based program. Operationally, the City collects recyclables in the recycling truck and hauls to the processor (MRF) when truck capacity is reached. MRF processing costs have risen from $20 to $35 per ton such that the City is no longer receiving market-value commodity revenues on the commingled stream, and is now paying for processing. The District is not clear if the increased processing costs are factored in the City's budget and how that may impact operations.

The SWMD will offer to meet with the City to provide technical assistance and help with exploring options to keep the program operational.

ID	Name	Start Date	End Date	Goal
Full-Time Urban Drop				
FTU1	Wilmington City-West, next to Bill Marine Ford (1274 W. Main St)	ongoing	ongoing	1 and 2
FTU2	Wilmington City-South, JFS Parking Lot (1025 S. South St.)	2021	ongoing	1 and 2

The SWMD contracts with a private service provider (provide containers, collection and processing) to have available single-stream recycling drop-off containers. Containers are available for use 24/7. Materials accepted include plastic bottles and jugs, glass bottles and jars, metal cans, and paper. Containers are 6-cubic yards. The number of containers and service frequency depends on the location.

Drop-off site locations are subject to change at any time for unforeseen reasons or to maintain performance and reasonable costs.

Cardboard is not accepted at drop-off locations because of issues with volume. However, the SWMD accepted cardboard at its Wilmington-West location through the use of a separate designated building. The District contracted with Highco, Inc., a division of Highland County Development Disabilities, to collect and process the cardboard. In 2015, Highco Inc. discontinued its recycling operations and is no longer providing cardboard recycling services to the Wilmington-West recycling site. Fortunately, in July 2015, the Wilmington Landfill began accepting corrugated cardboard from residents and businesses. Corrugated cardboard may be dropped off at special cardboard-only containers behind the City of Wilmington's municipal building or at the landfill office during operating hours, where it is baled and delivered to a processor for recycling.

In 2016, an additional drop-off site was added on the Wilmington College campus at the Sports Sciences building to better accommodate residents living near the south end of campus. The Sports Sciences' facility is fairly new to the campus and is frequented by the college community and members of the general public. The SWMD is anticipating changes to the locations on the Wilmington College campus as the college began reviewing the program in 2020 to streamline operations. These containers are managed, funded, and implemented by Wilmington College.

The residential drop-off recycling program continues to present cost and contamination challenges for the District. The District's service contract for this program with Rumpke Recycling concluded at the end of 2017, and the new three-year agreement came with a 30% cost increase. In 2018, the level of service provided to the residential drop-off recycling sites declined. Service was oftentimes unpredictable with sites being skipped and/or not serviced as scheduled for the 18 locations. With few other options, District staff was forced to devote a great deal of time to remedying these situations and working with the owners of host sites to keep programs from being eliminated.

The District experienced issues with contamination (urban and rural) - much of which has been deliberate abuse. Prior to retirement, the SWMD's Recycling Specialist visited all sites weekly (minimum) to ensure they are clean and free of loose debris. These site observations are now performed by District staff, and large debris pick-ups are contracted to an outside vendor. Contamination, especially as it pertains to bulky items being dumped at drop-off sites, is a big problem. Therefore, the District began using trail cameras to catch those individuals using the recycling drop-off sites as their dumping grounds. While this approach has been somewhat successful, it is time-consuming and simply not possible to monitor all 18 locations.

Also, in 2018 the District worked diligently to reduce open dumping and deliberate contamination at various drop-off locations. Cameras were placed at problem sites, and violators were prosecuted through the municipal court. Although these efforts were quite time-consuming, especially for a two-person staff, the results were a great success. Dumping became nearly non-existent, and residents began paying better attention to the list of acceptable materials.

Wilmington-West location added trail cameras to the site to combat open dumping in 2018. The Wilmington-West drop-off site has always been the most utilized drop-off location, containing 31% of all recycling boxes county-wide. Also, with Wilmington's expanded curbside recycling program, it was expected that this location would experience a tremendous decrease in residential participation. But that was not the case, as only a slight decrease in volume was experienced – leading one to conclude that the vast majority of residents utilizing this location reside outside of Wilmington. The SWMD conducted a user

study of this location and found users from all over the County utilize this location. (See Appendix H for distribution map.)

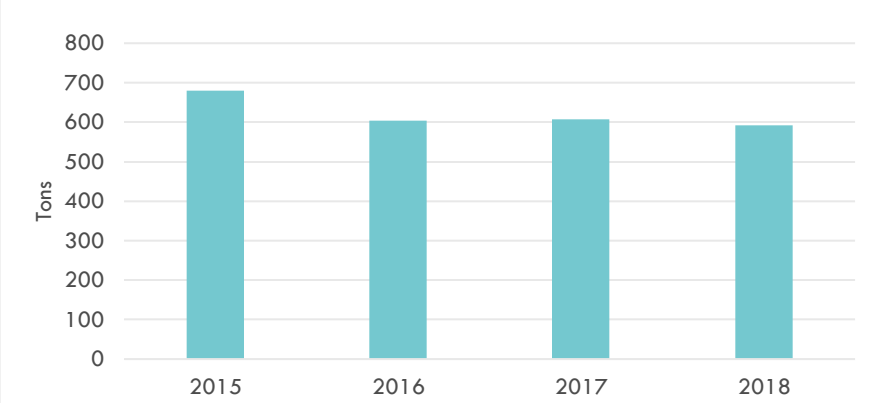

Figure I-1 Commingled Drop-off Recycled

One of the priority areas is optimizing drop-off locations. The optimization plan includes resurfacing the blacktop at the Wilmington City – West (Main St.) location with anticipated bi-yearly patch work and added cameras. A new site location was added on the south end of the City in January/February of 2021. Four containers and cameras were added. This location is a County-owned property at the Job and Family Services building. The County is scheduling lot resurfacing in 2022 and planned landscaping at which time the District will add a concrete pad and corral (see Full-Time Rural Drop-off for explanation) for the containers. Operational changes to the two full-time drop-off sites include: security monitoring, cardboard-only container recycling, and contracted vendor monitoring and clean-up. If the City of Wilmington is able to find and implement solutions to optimize their cardboard operations then the District will add cardboard-only boxes at the Wilmington drop-off locations.

Additionally, the District is in early stages of conversation with the City of Wilmington to explore a pay-as-you-throw (PAYT) drop-off pilot at the Wilmington-West location.

ID	Name	Start Date	End Date	Goal
Full-Time Rural Drop-off				
FTR1	Adams Township, across from old school (424 Clarksville Rd)	ongoing	Remove in 2021	1 and 2
FTR2	Blanchester Village, across from post office (115 S. Wright St)	ongoing	ongoing	1 and 2
FTR3	Blanchester Village, Veteran's Memorial Park (933 S. Broadway St.)	ongoing	Removed in May 2017 due to contamination	1 and 2
FTR4	Chester Township House (5606 S.R. 380)	ongoing	Remove in 2021	1 and 2
FTR5	Liberty Township House (7277 S.R. 134 N)	ongoing	ongoing	1 and 2
FTR6	Martinsville Village, Old Schoolhouse (100 School St)	ongoing	Remove in 2021	1 and 2
FTR7	Midland Village, next to Council Building (111 S. Broadway St)	ongoing	Remove in 2021	1 and 2
FTR8	New Vienna Village, Peoples Bank (141 W. Main St)	ongoing	ongoing	1 and 2

ID	Name	Start Date	End Date	Goal
FTR9	Sabina Village, Uhl's IGA Foodliner (444 Washington St) MOVING to Sabina Public Pool: 449 South Jackson Street in 2021)	ongoing	ongoing	1 and 2
FTR10	Former Vernon Township House (228 W. Main St.)	ongoing	Remove in 2021	1 and 2
FTR11	Wayne Township House (12 Cox Rd)	ongoing	Remove in 2021	1 and 2

Same as with the full-time drop-off, the SWMD contracts with a private service provider (provide containers, collection and processing) to have available single-stream recycling drop-off containers. Containers are available for use 24/7. Materials accepted include plastic bottles and jugs, glass bottles and jars, metal cans, and paper. Containers are 6-cubic yards. The number of containers and service frequency depends on the location. Drop-off site locations are subject to change at any time for unforeseen reasons or to maintain performance and reasonable costs.

The second Blanchester drop-off at Veteran's Memorial Park was removed in 2017 due to high contamination. Trail cameras were added to the Blanchester drop-off across from the post office to combat contamination.

Location site observations are now performed by District staff, and large debris pick-ups are contracted to an outside vendor.

Based on the drop-off visual capacity reports, four locations demonstrate low capacity fullness (less than 50% full) on weekly visual inspection. Planned changes to optimize locations and develop a network of larger drop-off sites that are not over saturating the population, provide more service offerings, and are aesthetically pleasing with better security cameras and lighting are set to begin in 2021. This restructuring will require partnerships with the District, County, and communities to identify permanent locations to undergo site improvements.

The end vision is six locations to service the County. The optimization plan will impact the full-time rural locations by removing six locations. Future site improvement changes to the remaining three full-time rural drop-off sites include: resurfacing, fencing, and stationary security cameras. Fencing structures will be built as a corral such that fencing (chain link with vinyl slats) will surround 3 sides to serve as a barrier against wind and provide aesthetics to the site. Standard corral size will fit 3 drop-off containers. The District purchased 10 cameras in 2021 and plan to add to site locations once the sites are improved. Additional cameras may be needed. At this time, it is uncertain how many cameras each site will need. Operational changes to the three full-time rural drop-off sites include: security monitoring and contracted vendor monitoring and clean-up.

- Sabina Village is moving to 449 South Jackson Street, Sabina, Ohio. District is partnering with the Village of Sabina for siting this location. District improvements to this location include adding gravel and two corrals. Cameras will also be installed. Modifications to the site are expected to be complete in 2021.
- New Vienna Village temporarily moved in 2021 to People's Bank as the Village of New Vienna is planning to improve a park location that will serve as the final drop-off location. The selected park location needs a corral and concrete. The location is expected to be improved and open in

2022, at this time the District is planning to provide materials but is still working details for labor needs to improve the site.

- Blanchester Village location improvements began in fall 2020. District is partnering with the Village and built one corral in fall 2020. The next improvement is slated for spring 2021 and includes a concrete pad. District will purchase supplies and Village will provide labor for the pad.
- Liberty Township House (Port William) location was originally planned to discontinue. At the request of community officials, the District will maintain service to this location. Camera's may be added to the site if necessary to prevent contamination.

Early 2021, Rumpke expanded their material accepted list to include plastic tubs and lids providing the updated material list to the District. Container labels will need to be updated to reflect the new material list. The District needs new drop-off containers and in early 2021 is beginning conversations with Rumpke for a replacement schedule. As old containers are replaced with new the District will print updated labels (hoping to have these in place by 2022). To help with education sandwich boards are being used to address site-specific concerns (i.e. inclusion of plastic bags, improper materials, new materials accepted, etc.)

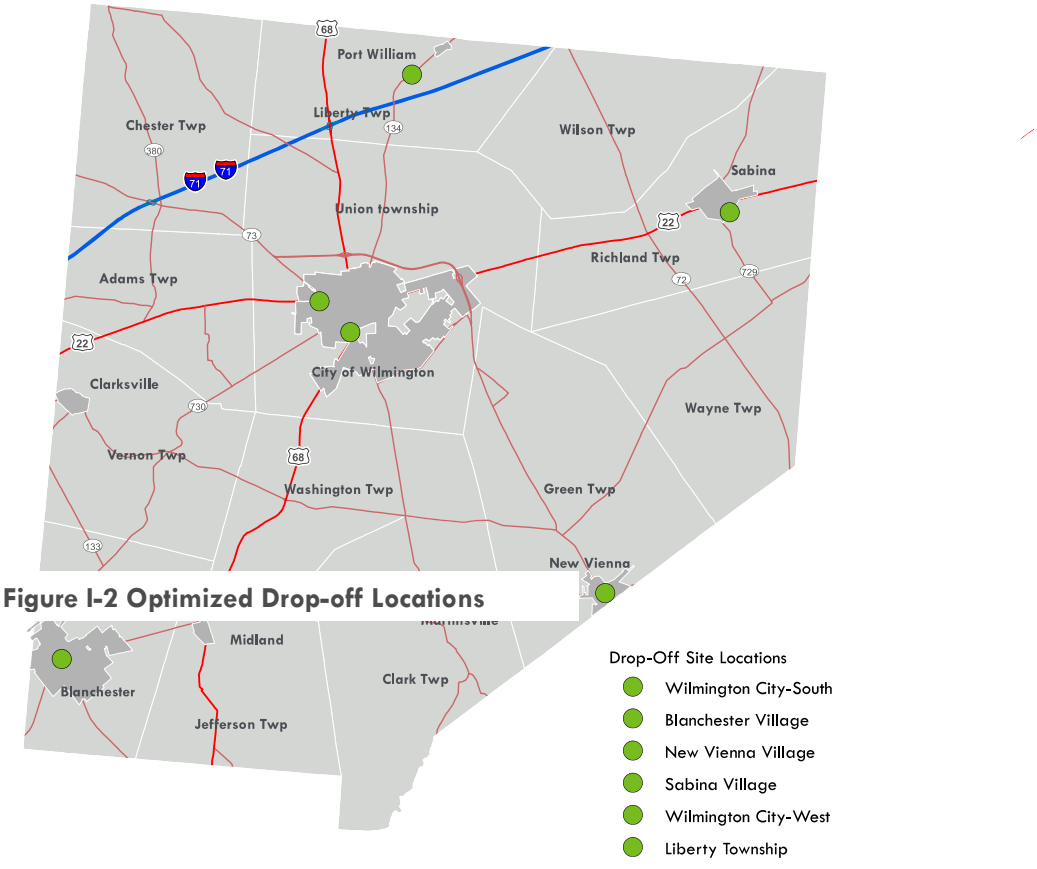

Figure I-2 Optimized Drop-off Locations

Name	Start Date	End Date	Goal
Fiber Collection Locations	Ongoing	Ongoing	1 and 2

Royal Oak Recycling provided drop-off paper recycling opportunities to residents, businesses, and schools to collect paper-only at various drop-off locations throughout the County. Residents are also able to recycle paper in the commingled recycling containers located at any one of the District's residential recycling drop-off locations. Royal Oak also provided drop-off paper only containers at several District drop-off locations. The following District drop-off locations are also serviced with Royal Oak containers:

District Drop-off Location	Royal Oak Containers
Wilmington City-West, next to Bill Marine Ford (1274 W. Main St)	x
Adams Township, across from old school (424 Clarksville Rd)	
Blanchester Village, across from post office (115 S. Wright St)	x
Chester Township House (5606 S.R. 380)	x
Liberty Township House (7277 S.R. 134 N)	x
Martinsville Village, Old Schoolhouse (100 School St)	x
Midland Village, next to Council Building (111 S. Broadway St)	
New Vienna Village, Streber's Market (299 N. South St)	x
Sabina Village, Uhl's IGA Foodliner (444 Washington St)	x
Vernon Township House (228 W. Main St.)	x
Wayne Township House (12 Cox Rd)	

Note: The District does not have a complete list of Royal Oak locations in the county.

While this service in the past has been positive and an asset, in more recent years, the service has been poor and/or unpredictable. Planned changes to optimize drop-off locations resulted in the decision to terminate the Royal Oak agreement and containers be removed by mid-September 2020. Poor and unpredictable service coupled with the District's desire to streamline operations and improve overall aesthetics led to this decision.

Beginning in 2015, the Wilmington Landfill offered residents and businesses the opportunity to drop-off corrugated cardboard at the landfill. Cardboard could be brought to the landfill office during business hours where it was then baled and later delivered to a processing facility. Cardboard is only accepted during business hours. Lack of manpower at the Wilmington Landfill is a challenge to keep up with the volume of cardboard received. The District explored a partnership between the Wilmington Landfill and the Clinton County Juvenile Probation Department to assist with baling the corrugated cardboard. Under close supervision of Juvenile Probation staff, juvenile offenders assist the Wilmington Landfill by baling corrugated cardboard collected. This partnership allows the juveniles to work off community service hours providing needed manpower for the program. In 2016, the community workers began assisting with baling cardboard.

Cardboard is not accepted at drop-off sites because the anticipated volumes are expected to overflow existing containers. In many locations, the District lacks the space and necessary funding to add recycling boxes (or more frequent service) to drop-off locations.

In 2018, the Wilmington Landfill improved its cardboard baling and began expanding service to local businesses. Rear-load dumpsters designated as "cardboard only" were provided to various businesses, with landfill workers servicing those containers as needed. The material was brought back to the landfill where it was baled (vertical baler) by community service workers. In addition, residents were permitted to bring their cardboard to the landfill during business hours, or they may deposit their materials in a "cardboard only" dumpster located at the Wilmington Municipal Building at any time. More recent

challenges include maintaining a consistent supply of labor to keep up with demand of baling the cardboard, and the ability of the vertical baler with its limited capacity to handle demand. Operationally at the landfill, there is not a loading dock or equipment to easily load baled cardboard into trucks.

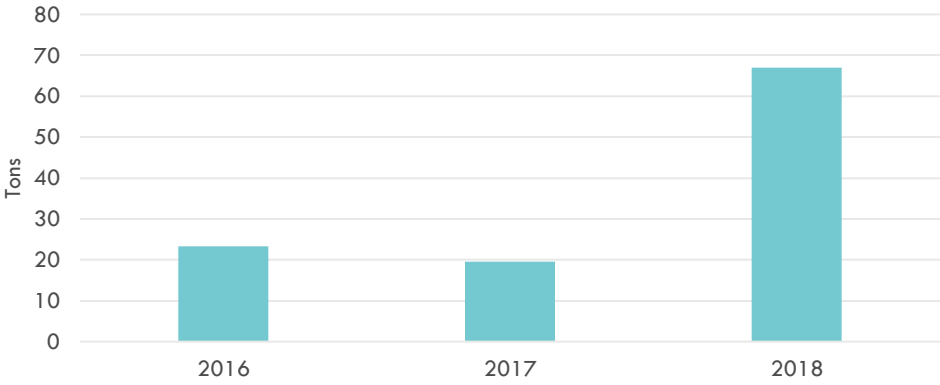

Figure I-3 Cardboard only at Wilmington's Drop-off

The District and City of Wilmington have frequently discussed the City's operations exploring solutions to the challenges. In March 2021 the City of Wilmington began leasing a compactor to pilot labor needed for the operations. A few weeks into operations, more labor than expected is needed but it's a better operation for handling the volume than the vertical baler. It's uncertain if this is poised for growth so the City is planning to add a 6-yard dumpster to the Wilmington City-West drop-off and provide service to pilot the operation. This pilot is expected to run from late April through late June. The District will provide signage and advertise the pilot program. Cardboard volume measurements will be taken before the pilot begins to establish a baseline and at the end to gauge volumetric success. Depending on the resulting data and outcomes, the pilot program could continue long-term.

Commercial/Institutional and Industrial Sector Reduction and Recycling Programs

Name	Start Date	End Date	Goal
Commercial/Industrial Recycling Recognition Program	2007	Ongoing	4 and 5

Focus is on public recognition of commercial and industrial businesses for recycling efforts and stewardship. The SWMD recognizes businesses that take significant steps toward reducing waste and increasing recycling effort. Such entities included local schools, recycling haulers, and other commercial establishments. Businesses are recognized in the local newspapers, District website, and other media outlets.

Program recognition stats:

Year	Businesses Recognized
2015	Approx. 50
2016	Greater than 50
2017	Greater than 55
2018	Greater than 50

Name	Start Date	End Date	Goal
Technical Assistance	Prior to 2003	Ongoing	4 and 5

Technical assistance is provided to businesses and industries through waste assessments and audits. The SWMD provides education, resource materials, and assistance to the commercial and industrial sectors on source reduction, reuse and recycling. Assistance to set up recycling programs is also provided. The District as well as Ohio EPA offer grant assistance. Information about these grants and Ohio EPA's Material Marketplace are made available.

In addition, each year the District contacts all four public school districts to offer assistance. In 2017 and 2018, one private school was also reached.

Program stats:

Year	Technical Correspondence and/or Meetings	Waste Assessments	Walk Throughs	Follow-ups
2015	143	8	8	17
2016	173	5	5	23
2017	186	4	4	6
2018	96	2	2	4

The number of overall technical assistance related correspondences was lower than in 2017 mainly for two reasons: firstly, the District's Recycling Specialist was off work for a significant amount of time due to a work-related injury; and secondly, following the Education Specialist's retirement in 2017, the Recycling Specialist and Coordinator were required to take over education/outreach duties, thus limiting the amount of time devoted to other areas.

Moving forward the Coordinator and Outreach Specialist will provide technical assistance.

Industrial Sector Reduction and Recycling Programs

See program descriptions above.

Restricted/Difficult to Manage Wastes

Name	Start Date	End Date	Goal
HHW / Electronics Education	Existing	Ongoing	6

District provides information on its website and resource brochure for proper handling of such materials, and assists residents/businesses in finding outlets for specific items.

Name	Start Date	End Date	Goal
Lead Acid Battery Education	Ongoing	Ongoing	6

District provides information on its website and resource brochure for proper handling of such materials, and assists residents/businesses in finding outlets for specific items.

Name	Start Date	End Date	Goal
Scrap Tire Collection Program	Ongoing	Ongoing	6

The SWMD contracts with a local or regional company to handle, transport, and process collected tires at the yearly collection event. The Scrap Tire Collection Event collects passenger-sized tires only.

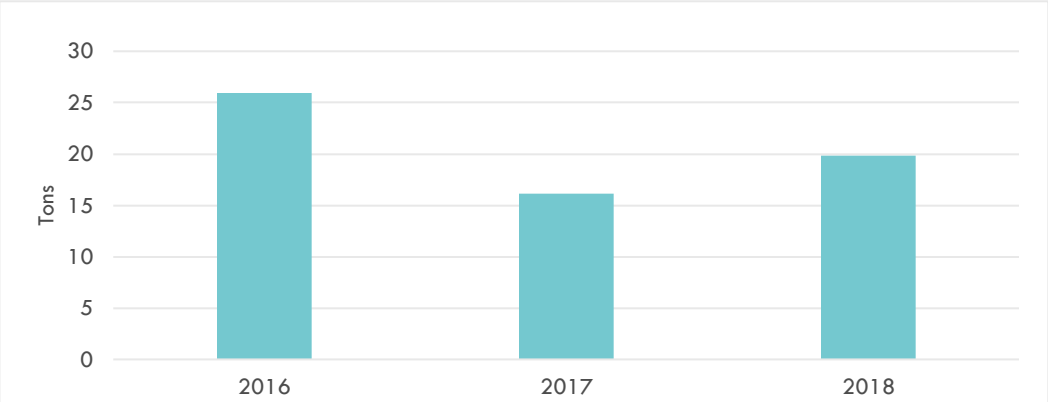

Figure I-4 Scrap Tire Collection Events (passenger tires only)

The event in 2017 had less participation than in 2016 (25.93 tons/238 residents) due largely to severe weather in the area during the scheduled time of the collection.

Additionally, the SWMD collaborates with the Clinton County Soil & Water Conservation District to host a Tire Amnesty Day for the collection of larger tires (including agricultural tires.) In 2016, two collection events were held.

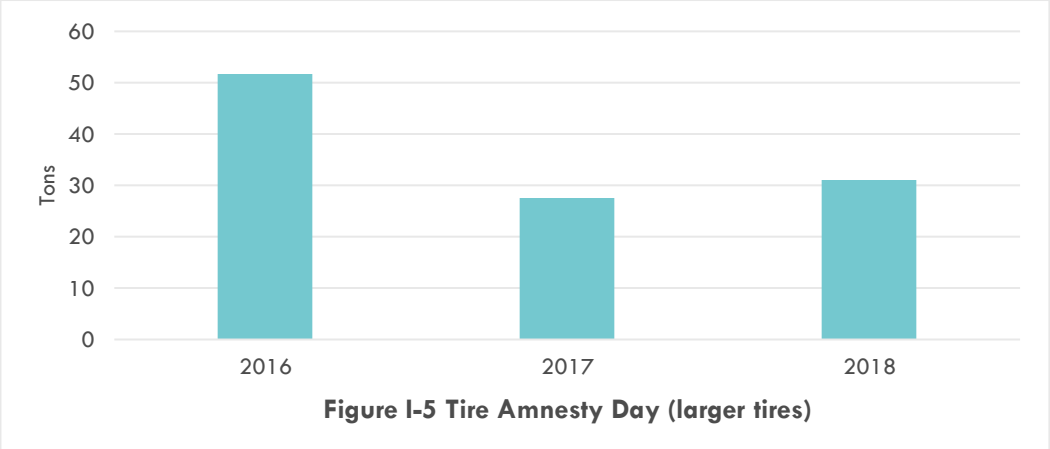

Figure I-5 Tire Amnesty Day (larger tires)

Both collections received Ohio EPA grant funding support from 2016 through 2019. In 2020, the tire collection events assessed a user fee of $1 per tire to help offset costs.

Name	Start Date	End Date	Goal
Wilmington City Compost Site	Ongoing	Ongoing	6

The City of Wilmington accepted various yard waste materials at its compost site located adjacent to the Wilmington Landfill. The City of Wilmington operates a Class IV compost facility. Residents throughout the County were permitted to deposit materials at this location. Yard waste materials are processed into a basic mulch offered to residents for use. Resident users are charged $10 per cubic yard (2020 rates; a commercial rate was not specified).

Name	Start Date	End Date	Goal
Wilmington City Curbside Yard Waste Service	Ongoing	Ongoing	6

The City of Wilmington collects yard waste from its residents at the curbside. Bags cost $2 per bag (2020 rates). In the fall, leaf collection is offered at no additional charge. Material is deposited into the City's compost site.

Funding/Grants

Name	Start Date	End Date	Goal
Community Grants	Existing	Ongoing	7 and 9

The SWMD offers grants to local municipalities and townships for clean-up events, recycling, and litter prevention programs. Grantees are required to provide a 25% match. Funding allocations are based on the amount of applications received in a given year. Grantees are required to submit an application, plus:

- Funding provided by SWMD is to be used to pay for up to two dumpsters to be used for a maximum period of four days;
- Any material that is not covered under the SWMD recycling programs such as HHW, tires, appliances, used oil and general curbside recyclables must be source separated and delivered to the SWMD's special collection events or other programs targeted to those materials; and
- A final report summarizing the project and detailing all costs, both internal and external, needs to be submitted to the SWMD. The final report is required to contain invoices, receipts, photo-documentation, and narrative describing the activity's success, as well as things that could have been done differently.

The following list shows the grants awarded from 2015 to 2018.

Community Grants	2015	2016	2017	2018
Adams Township	$637.50	$900.00	$656.25	$ 765.00
Clark Township	$337.50	$900.00	$338.62	$ 382.50
Jefferson Township	$450.00	$900.00	$637.50	$ 765.00
Village of Midland	$637.50	$900.00	$637.50	$ -
Port William Village	$645.00	$900.00	$701.25	$ 825.00
Sabina Village	$637.50	$900.00	$637.50	$ 765.00
Total	$3,345.00	$5,400.00	$3,608.62	$3,502.50

Name	Start Date	End Date	Goal
P.E.A.R. Grants	Existing	Ongoing	7 and 9

The SWMD offers grants to local schools for implementation of recycling and litter prevention education programs on their campuses. Grantees are required to provide a 25% match. Funding allocations are based on the amount of applications received in a given year. Grantees are required to submit an application, plus:

- A final report summarizing the project and detailing all costs, both internal and external. The report is required to contain all invoices, receipts, photo-documentation, and narrative describing the activity's success as well as things that could have been done differently.

The following list shows the grants awarded from 2015 to 2018.

School	2015	2016	2017	2018
Blanchester Intermediate School	$540.00	$0	$0	$585.00
Blanchester High School • Collection materials to implement school-wide commingled recycling program.	$0	$540.00	$0	$0
Blanchester Middle School • Field trip transportation to area landfill, MRF and glass recycling center.	$542.70	$561.51	$0	$0

SWMD staff notified all public and private schools within the District about the availability of the PEAR Grant. Letters were sent to all building principals, and information is shared in teacher newsletters.

Name	Start Date	End Date	Goal
Go-GREEN Grants	Existing	Ongoing	7 and 9

The SWMD offers grants to businesses to implement or expand recycling programs. Grantees are required to match the grant dollar-for-dollar. Funding allocations are based on the amount of applications received in a given year. Grantees are required to submit an application, plus:

- A final report will provide answers to SWMD questions, costs price-quotes, invoices, receipts, and photo-documentation. Grantees will be given a deadline to submit the final report to the SWMD. Extensions may be applied for and, if awarded, allow an additional 30 days. All final reports have to be completed by the end of the calendar year.

Very few Go-GREEN Grants are issued because of lack of applicants. One applicant applied and was awarded a grant in 2016. The 2016 grant funds were used to purchase recycling bins for offices and break rooms, and to help pay for collection services from a recycling hauler/processor. The grantee provided matching funds equal to the grant award and committed to continuing the recycling program after the grant period expired. In 2017, the SWMD promoted the grant via local newspaper, SWMD website, Chamber of Commerce, and 55 targeted direct mailings. Feedback received was that more funding is needed to entice applicants. Grant available annually is $4,000 total.

The SWMD will offer this grant every other year and increase the allocation to $8,000 bi-annually.

Name	Start Date	End Date	Goal
Curbside Recycling Grant	Existing	Ongoing	7 and 9

The SWMD set aside funding to be used for curbside recycling programs. Grant money can be used for existing curbside programs or for start-up expenses such as: infrastructure materials, supplies, printing, advertising, outreach expenses, and equipment. Communities wishing to receive money for their curbside recycling program need to apply for a grant. Grant applications will be subject to a review process and recipients to expectations and reporting requirements. Grants are awarded annually.

In 2016, one grant was awarded to City of Wilmington totaling $5,000 to help offset costs associated with processing materials. In all, 286 tons of recyclables were collected in 2016. Then again in 2020, the City of Wilmington applied for and was awarded a grant for the curbside program.

Having grant money available is enticing to other communities that are considering a curbside recycling program.

Name	Start Date	End Date	Goal
Economic Incentive Program	Existing	Ongoing	7 and 9

The District was awarded a 2016 Community Development Grant from Ohio EPA to assist local schools with expanding their on-campus recycling efforts. The District provided indoor recycling bins and other collection supplies to various public schools and one private school for the collection of miscellaneous mixed recyclables.

Annually, the SWMD reviews the budget to ensure its economically feasible to issue grants.

The District may directly secure grants or fund activities to implement or improve diversion programs, as well as provide matching grant dollars for secured grants. During this planning cycle (2022-2026) the District is allocating up to $20,000. This program allows the District to respond to unforeseen opportunities or other initiatives to increase diversion and decrease landfilling of materials. A variety of state, national, and/or industry grant resources are available for the District to directly seek or indirectly support. District staff attends Ohio EPA quarterly meetings, Organization of Solid Waste Districts of Ohio, and various other industry meetings and conferences as well as subscribes to email listservs to stay connected to opportunities.

Funds may be spent-on, but not be limited to, options such as procuring containers, developing and procuring education materials, plus investment in composting, recycling or waste reduction technologies. Cardboard, single stream, or food waste are examples of materials that may be targeted with this activity. The District may also implement programs by partnering with generators. District staff will seek and manage any initiatives. This initiative will continue through the planning period.

Additionally, public-private partnerships can work together to provide infrastructure related utilities such as solid waste successful arrangements. Through these arrangements the private sector takes some of the risk that traditionally the public had and can undertake the project on a much more cost-efficient basis. As the District looks towards the future, keeping options open for public-private partnerships may provide opportunities for diversion of these materials. The District will research any public-private partnerships, and where it makes sense, develop infrastructure to support or expand diversion (reuse, reduce, recycle, and compost).

If the funding is not used for a grant match, then the District is requiring the applicant, partner, generator to complete a District grant application for receiving project funding.

Facility Ownership/Operations

Name	Start Date	End Date	Goal
none	*n/a*	*n/a*	*n/a*

Other

Name	Start Date	End Date	Goal
Buy Recycled Promotion	Existing	Ongoing	9

The District makes it a point to promote the concept of buying recycled-content materials during environmental presentations to schools and civic groups. The idea of "closing the loop" and its importance within the overall recycling process is explained to students and reinforced by providing those in attendance with recycled-content promotional items (i.e. pencil, pen, etc.) Recycled-content prizes are also awarded during District-sponsored contests as well as during the annual Get Caught Recycling Campaign. The District's Recycling Specialist also encourages local businesses to purchase recycled-content materials whenever possible.

Name	Start Date	End Date	Goal
Market Development Outreach Program	2016	Ongoing	4 and 9

There is no recycling without end market consumption of recovered materials. In the past, the SWMD focused on promoting recycling through this program. The strategy moving forward is to incorporate more strategies at the community, County, and District level to support end markets. First, the SWMD will look to develop environmentally preferable purchasing guidelines to spur demand for recovered materials. The SWMD will also look to create a Recycled Products Directory to find companies within the County that manufacture and sell products made from recycled materials.

Name	Start Date	End Date	Goal
Bottle Bins for Event Recycling	Existing	Ongoing	2

Portable collection containers (shaped like large pop bottles) are used for collection of various recyclables such as plastic/glass bottles, jugs and jars, and aluminum beverage cans. Schools, businesses, and civic groups can request the use of these containers for special activities such as sporting events, company picnics, or community festivals. The materials collected through this program are then deposited into one of the District's drop-off recycling containers.

Year	Requests	Number of Events
2016	3	11
2017	4	12
2018	1	1

The Bottle Bin loan program is ideal for special events such as street fairs and festivals. In past years, they were most often used for special events in/around Wilmington. But with Wilmington's new cart-based recycling program, the City has begun providing their own carts for use during these special events. Therefore, in 2018, the District noticed a decrease in the number of requests.

Name	Start Date	End Date	Goal
Christmas Tree Recycling	Existing	Ongoing	2 and 6

During the 2016-2017 holiday season, the District worked with the Wilmington Landfill to assist residents with recycling their live Christmas trees following the holidays. Drop-off locations were established in four communities throughout the County, and the District hauled trees collected at these locations to the City of Wilmington Landfill's Class IV composting facility. The residential drop-off locations and number of trees collected at each are listed below:

Community	Trees Collected
Wilmington	39
Blanchester	20
New Vienna	8
Sabina	9
Total	76

Due to reduced staffing availability, the District made some changes to the Christmas tree collection program for the 2017-2018 season. Rather than establishing four separate collection points, the District instructed residents to simply deliver their trees directly to the City's compost site for shredding/composting. Volumes collected are included in the landfill's overall compost figures. These changes were manageable, reasonable and expected to continue.

Name	Start Date	End Date	Goal
Disaster Debris Funding Development	Existing	Ongoing	none

The District has a Disaster Debris Management/Continuity of Government Plan. No specific funds have been set aside to assist local jurisdictions with funding, such as cleanup efforts through this program.

Name	Start Date	End Date	Goal
Disaster Debris Management – Coordination Responsibilities	Existing	Ongoing	none

The District has a set plan with the Clinton County EMA to be the primary responder and serve as communication coordinator in natural disasters. The "Continuity of Government Plan" outlining the duties and responsibilities of the District is included in Appendix V. The District will document the duties that it agrees to perform during a disaster event, and will share this documentation with Clinton County EMA, Ohio EPA, and any other agencies that the District feels are appropriate.

The District continues to monitor its plan and make adjustments as needed.

Name	Start Date	End Date	Goal
Litter Collection Program	Existing	Ongoing	none

The District worked with the Juvenile Probation Department and various schools and civic groups to collect litter from area roadways. Bags, gloves, and other supplies were provided by the SWMD. The Juvenile Probation Department conducted cleanups during spring break and also throughout the summer months through October, weather permitting.

Year	Volunteers	Man-Hours
2016	475	1,299
2017	516	2,386
2018	294	1,614

Name	Start Date	End Date	Goal

Litter Law Enforcement	Existing	Ongoing	none

Prior to retirement, the SWMD's Recycling Specialist visited all sites weekly (minimum) to ensure they are clean and free of loose debris. These site observations are now performed by District staff, and large debris pick-ups are contracted to an outside vendor. In cases where waste can be traced back to specific individuals, the District staff mails a letter to violators as a warning regarding the consequences of a repeat offense. A copy of the letter is forwarded to the Clinton County Sheriff's Office. In situations of deliberate abuse involving large amounts of unacceptable or potentially dangerous materials, local law enforcement is immediately contacted to file a report and follow up with offenders accordingly.

District staff assists in identifying the individual(s) and issuing citations for municipal court. In 2018, the District also began using trail cameras to assist in these efforts. While this process is rather time-consuming, it has proven to be quite effective in reducing open dumping and limiting contamination at the County's recycling drop-off sites.

The District does not currently provide litter law enforcement funding to the Sheriff's Department.

Name	Start Date	End Date	Goal
Open Dump/Scrap Tire Abatement and Solid Waste Enforcement Program through Health Department	Existing	Ongoing	6

The District provides funding to the Health Department to assist in offsetting some of the costs associated with this program. The District works with the Clinton County Health Department to investigate and potentially remediate open dumps, scrap tire sites, and solid waste nuisance complaints within the County. No open dumps needed to be cleaned up by the District in 2016, 2017, and 2018.

Data Collection

Name	Start Date	End Date	Goal
Data Collection Program	Existing	Ongoing	2

The District conducts surveys on residential, commercial and industrial recycling, waste reduction, and yard waste composting practices every other year. Surveys to brokers, processors, and solid waste haulers are also conducted. This program focuses on large generators with a goal of increasing the number of businesses surveyed.

The District was achieving about a 20% response rate from surveys. After years of conducting these surveys, this is disappointing. By now, the businesses should be familiar with the routine (which some are) and willingly report waste and recycling activities. It was thought, responses might increase if previously completed data surveys were included with the reference year. The District did include repeat responders' past surveys, but the response rate did not increase. The District spent considerable effort, time and money in the past to survey each individual commercial entity resulting in meager responses. Mailing over 150 survey packets (cover letter, survey, material data sheet, and stamped return envelope) to receive low responses was a costly endeavor. To streamline the process, priority has been placed on obtaining responses from the largest businesses - first and past responders, second.

The District also changed to mailing postcard reminders to all businesses and only mail hard copy surveys to the past responders. The survey form is available on the website for downloading. Past responding businesses are mailed a hard copy survey. Survey recipients are given the option to submit their completed surveys via direct mail, email, or fax. The quantity of follow-up phone calls made to each survey recipient varies on a case-by-case basis. This change in mailing postcard reminders decreased administrative costs while maintaining comparable response rates.

Effective December 1, 2020, the 2020 State Plan eliminated the industrial recycling goal where District's demonstrate 66% diversion in the industrial sector. Because of this change the District no longer needs to survey industrial businesses to demonstrate compliance with the industrial recycling goal. The District will consider the option to survey the industrial sector before each survey year.

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

The SWMD is demonstrating compliance with Goal #2, and is not demonstrating Goal #1.

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

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

Table K-1 Residential/Commercial Annual Rate of Waste Reduction

Year	Population	Recycled	Disposed	Total Generated	Waste Reduction & Recycling Rate (%)	Per Capita Waste Reduction & Recycling Rate (ppd)
2018	***42,055***	***11,443***	***28,487***	***39,930***	***28.66%***	***1.49***
2019	42,072	12,208	29,054	41,262	29.59%	1.59
2020	42,089	12,208	29,066	41,274	29.58%	1.59
2021	42,105	12,208	29,077	41,286	29.57%	1.59
2022	42,122	12,308	29,089	41,397	29.73%	1.60
2023	42,139	12,408	29,100	41,509	29.89%	1.61
2024	42,156	12,508	29,112	41,620	30.05%	1.63
2025	42,173	12,608	29,124	41,732	30.21%	1.64
2026	42,190	12,708	29,135	41,844	30.37%	1.65
2027	42,207	12,808	29,147	41,955	30.53%	1.66
2028	42,224	12,908	29,159	42,067	30.69%	1.68
2029	42,240	13,008	29,170	42,179	30.84%	1.69
2030	42,257	13,108	29,182	42,290	31.00%	1.70
2031	42,274	13,208	29,194	42,402	31.15%	1.71
2032	42,291	13,308	29,205	42,514	31.30%	1.72
2033	42,308	13,408	29,217	42,625	31.46%	1.74
2034	42,325	13,508	29,229	42,737	31.61%	1.75
2035	42,342	13,608	29,240	42,849	31.76%	1.76
2036	42,359	13,708	29,252	42,961	31.91%	1.77

Source:
Population – Appendix C, Table C-1
Recycled – 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
Per Capita Waste Reduction & Recycling Rate = (Recycled x 2000 lbs/ton) / (Population x 365 days)

The SWMD met the 25% residential/commercial waste reduction rate goal in the reference year, 2018, and the SWMD is projected to continue to meet that goal throughout the planning period. While Goal #2 is being met, the actual waste reduction and recycling rate in the reference year was lower than the 2016 Plan projected rate, 28.66% actual compared to 36.16% projected. The difference between the actual

and projected diversion rate for 2018 is a combination of both slightly more disposal than projected along with slightly less recycling than projected:

- 2018 projected disposal 25,144 tons (13% less than actual)
- 2018 projected recycling and composting 14,239 (20% more than actual)

The 2016 Plan estimated higher diversion from the commercial sector which may have occurred but was not captured. As demonstrated in Appendix E Table E-7, the commercial sector data fluctuates yearly attributable to voluntary reporting of data. The SWMD does not have infinite resources to track down recycling data from the commercial sector. While fluctuations in survey results and reported diversion are expected it is assumed the waste reduction rate will continue to demonstrate a 25% or higher percentage throughout the planning period.

Table K-2 Industrial Annual Rate of Waste Reduction

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Non-Recyclable Waste	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2018	***42,032***	***1,356***		***43,388***	***96.87%***
2019	32,180	1,356		33,536	95.96%
2020	32,470	1,356		33,826	95.99%
2021	32,762	1,356		34,118	96.03%
2022	33,057	1,356		34,413	96.06%
2023	33,354	1,356		34,710	96.09%
2024	33,654	1,356		35,011	96.13%
2025	33,957	1,356		35,313	96.16%
2026	34,263	1,356		35,619	96.19%
2027	34,571	1,356		35,927	96.23%
2028	34,882	1,356		36,239	96.26%
2029	35,196	1,356		36,553	96.29%
2030	35,513	1,356		36,869	96.32%
2031	35,833	1,356		37,189	96.35%
2032	36,155	1,356		37,511	96.38%
2033	36,481	1,356		37,837	96.42%
2034	36,809	1,356		38,165	96.45%
2035	37,140	1,356		38,496	96.48%
2036	37,475	1,356		38,831	96.51%

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 waste reduced and recycled for the industrial sector in the reference year 2018 is 97%. As shown in Table K-2, Non-Recyclable Waste is not included in the calculations to determine waste generation because the materials are delivered directly to the company that recycles the materials or the tons were provided by Ohio EPA reports.

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)
2018	***53,474***	***29,843***	***83,317***	***64.18%***
2019	44,388	30,410	74,798	59.34%
2020	44,678	30,422	75,100	59.49%
2021	44,970	30,433	75,404	59.64%

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2022	45,365	30,445	75,810	59.84%
2023	45,763	30,457	76,219	60.04%
2024	46,163	30,468	76,631	60.24%
2025	46,566	30,480	77,046	60.44%
2026	46,971	30,492	77,463	60.64%
2027	47,380	30,503	77,883	60.83%
2028	47,791	30,515	78,306	61.03%
2029	48,205	30,527	78,731	61.23%
2030	48,621	30,538	79,160	61.42%
2031	49,041	30,550	79,591	61.62%
2032	49,464	30,562	80,025	61.81%
2033	49,889	30,573	80,462	62.00%
2034	50,317	30,585	80,902	62.20%
2035	50,749	30,597	81,345	62.39%
2036	51,183	30,608	81,791	62.58%

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 data listed in the tables demonstrates the SWMD will achieve Goal #2 through the planning period.

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

A. Minimum Required Education Program

District Website

The SWMD maintains a website at www.co.clinton.oh.us/recycling. The website is managed by Clinton County, and in 2020 received an update. As a result of the update, the SWMD has direct access to post or change information on the webpage. With the update, the SWMD has more capability for tracking web stats and flexibility for posting/adding information. The website is a resource which provides much of the information that residents, local governments, businesses and educational institutions would seek. The homepage is key to user navigation and has the ability to be updated regularly to reflect recycling services, seasonal program info, and simple opportunities. The webpage provides an inventory of the infrastructure, drop-off collection locations, information about tire collection events and available education and outreach opportunities. Businesses also have access to recycling survey forms on the website in order to help increase response rates during our commercial/industrial survey campaigns.

The webpage is located on all collateral and business cards, as well as promoted on Facebook.

Comprehensive Resource Guide

The SWMD's webpage includes a "Recycling Resources" search feature for searching for recycling outlets for materials. These include retailer-based businesses, scrap yards, District drop-offs, etc. The SWMD updates this annually to ensure the information remains accurate.

Inventory

Infrastructure inventory can be found in the Plan, which is updated every five years, and specific infrastructure is identified on the website. The website data regarding solid waste management infrastructure is updated at least annually, or more frequently if changes occur.

Speaker

Both the SWMD Coordinator and Outreach Specialist are available for speaking engagements. A part-time Education Specialist served the role for school presentations in 2016 and 2017. When the Education Specialist retired in July 2017, the position was vacant until 2020. The position was modified to Outreach Specialist which includes full-time status and additional outreach responsibilities.

B. Outreach and Education – Outreach Plan and General Education Requirements

As prescribed by the 2020 State Plan, each SWMD will provide education, outreach, marketing, and technical assistance regarding education and reuse through an outreach and marketing plan. Per *Format 4.0*, the Outreach and Marketing Plan needs to have the following components:

1. Five target audiences as identified in Ohio EPA Format 4.0
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 all of the five target audiences.
- Explain how the SWMD will align its outreach and education programs with recycling opportunities (both existing and needed).
- Explain how the SWMD will incorporate principles and tools for changing behavior into the outreach and marketing plan.

To align with *Format 4.0,* the SWMD's existing programs were organized by target audience. Some of the existing SWMD programs cross several target audiences.

Education/Outreach Program	Target Audience				
	Residents	Schools	Industries	Institutions and Commercial Businesses	Communities and Elected Officials
Countywide Curbside Recycling Promotion					X
Get Caught Recycling	X				
Advertisements and Promotional Item Distribution	X	X	X	X	X
Civic Group Presentations	X	X			
Outreach Partnership Development	X	X	X	X	X
Recycling Outreach to Communities	X				X
Recycling Resources Brochure	X				
School Contests		X			
School Open House Events		X			
School Presentations		X			
Social Media Outreach	X	X	X	X	X
The Recycling Educator Newsletter		X			

After having record participation in many of the District's education programs in 2016, the District experienced a decline in some of these programs in 2017. This result is mainly attributed to the decision to not fill the Education Specialist position following that employee's retirement in July 2017. While the two remaining District employees (Coordinator and Recycling Specialist) continued to administer many of the education programs (i.e. school contests, presentations, etc.), limited staff resulted in less availability for various programs.

Name	Start Date	End Date	Goal
Countywide Curbside Recycling Promotion	Ongoing	Ongoing	4

This outreach targets local governmental/community officials to develop recycling infrastructure.

The SWMD actively engages with community officials to promote curbside recycling throughout the County. The approach includes phone conversations, in person meetings, resident research and engagement, and technical assistance. This outreach program targets community and elected officials to equip them with data to make informed decisions regarding curbside recycling for their community. The SWMD engages with the community and provides the research to gauge resident interest. The SWMD also helps to advance the curbside infrastructure by evaluating options and helping with contracts. Since this program kicked off in 2016, the following communities have been contacted: Port William, Blanchester, Sabina, New Vienna, Martinsville, Midland, and Clarksville.

In each of these communities, the community elected officials were first approached to explore curbside recycling and discuss any challenges with a curbside program. To measure residents' level of interest, the SWMD conducted a residential survey in the communities. As the District conducted the survey, they also provided information about current recycling opportunities along with promotional items in the survey packets. Results from each community's survey were compiled and presented to the mayor of each village, along with suggestions for implementing curbside recycling programs in their respective areas. The results of the survey indicated that at least 75% of residents in each village were interested in having curbside recycling service. The District also offered to assist villages with applying for grants to implement such programs.

In 2016, the Village of Port William survey responses indicated 78% of residents said they would participate in curbside recycling if such a program was provided as part of their waste collection service. When the Village of Port William signed a new contract with a waste hauler, the mayor asked the waste hauler about including curbside recycling service. However, due to the small size of the Village, the waste hauler was not willing to offer this service. The Village plans to look into other options in the future, such as possibly participating in a consortium with other villages, in order to be able to add curbside recycling as a service.

The Village of Blanchester showed interest in a curbside program and applied for a 2018 Community Development Grant from Ohio EPA to purchase recycling carts. Their survey indicated 80% of residents were interested and 45% currently participate in recycling by using the drop-off program. The District efforts to conduct and facilitate meetings resulted in a designed curbside program as a partnership between the Village and the City of Wilmington for bi-weekly service where residents would be charged for the bi-weekly service. However, the Village did not receive the grant. The District Coordinator continues to work one-on-one with Blanchester officials to include curbside recycling service in the next waste hauling contract.

All seven villages were reached as part of this outreach strategy. Based on those conversations, in this next planning period, the District will target neighboring communities surrounding Port William to explore interest in curbside recycling and interest in consortiums. The District anticipates several conversations to explore curbside, outreach efforts to conduct a residential survey, and community work sessions to bring elected officials together to discuss pros and cons of a consortium. Targeting year 2021 for community outreach, and 2022 or 2023 for consortium work session.

Additionally, the District is continuing conversations a few times a year with the City of Blanchester to explore contracting arrangements for curbside recycling. One of the identified challenges is the cost to provide carts to residents and without grant funding has put a temporary stop to advancing curbside services in the Village. Discussion topics include exploring other arrangements, future grant opportunities and private service provider contracts.

Name	Start Date	End Date	Goal
Get Caught Recycling	Ongoing	Ongoing	4

Get Caught Recycling is an outreach strategy promoting recycling at the drop-off recycling locations. A barrier to using drop-off recycling is the lack of convenient collection, that is, recyclables are not collected at the curb rather the user must drive recyclables to the drop-off. The benefit is the potential to receive a reward if the user uses a drop-off location.

"Get Caught Recycling" promotes the act of recycling with recognition and awards. To grab attention the District uses a recognizable mascot. This is social modeling and one of the elements that works well with community-based social marketing. For a period of four weeks, the SWMD visits the recycling drop-off locations to "catch" someone recycling. Those "caught" are photographed and given recycled content prizes. Winners are featured in the *Wilmington News Journal* and on Facebook. In 2018, the SWMD extended this for a period of five weeks.

This program emphasizes and awards behavior for recycling, and the publicity provided demonstrates peer influence and social approval. Community-based social marketing strategies use strategies such as commitment, incentives, prompts, social modeling, and social norms to promote change. Each of the tools is matched to the behavior and context and some tools work better in some situations than others. For this strategy, both incentives and social modeling are used to promote the change. The District will continue to "catch" recyclers five weeks out of the year. ŧ

Name	Start Date	End Date	Goal
Advertisements and Promotional Item Distribution	Ongoing	Ongoing	4

The SWMD uses various media to reinforce messaging. All advertisements and marketing collateral are branded with SWMD logo, colors and fonts to create and reinforce brand identity. Forms of media used are shown in the table below.

Year	Paid Ads	Press Releases	Flyer/Brochure Distribution	Calendars Distributed Featuring Earth Day Poster Contest Winners
2016	18	48	6,500	1,000
2017	8	33	6,500	1,000
2018	10	28	3,500	1,000

These forms of advertising were used to alert residents about various recycling opportunities including drop-off sites, special collection events, litter cleanup activities, and education programs. Where appropriate at outreach activities, District staff distributes promotional materials such as recycled-content pens, pencils, magnets, and notepads to further reinforce the recycling, litter prevention, and/or waste reduction message(s) being presented.

The District uses a display board featuring recycling and litter prevention information for the general public. This travelling display was rotated throughout the year among five local libraries as well as in the lobby of the County Administration Building.

Name	Start Date	End Date	Goal
Civic Group Presentations	Ongoing	Ongoing	4

The SWMD has a library of presentations readily available to present to civic groups. The SWMD also offers flexibility to modify content if other environmental topics better meet the needs of the group. The number of presentations and attendance are presented in the table below.

Year	Number of civic Group Presentations	Number in Attendance
2016	11	233
2017	14	208
2018	9	214

Name	Start Date	End Date	Goal
Outreach Partnership Campaign	2016	2020	4

Although this program was not anticipated to begin until 2017, District staff actually began implementing this initiative in 2016. The purpose is to create partnerships throughout the county to promote Reduce, Reuse and Recycle messages to residents. The SWMD reached out to various groups and found an opportunity to participate in *Real Money, Real World* exercises.

This program was designed to implement a campaign based on the development of partnerships. Realistically, a campaign was not needed because of the opportunity. This program will cease in 2020.

Name	Start Date	End Date	Goal
Outreach Partnership Development	2016	Ongoing	4

The District partnered with the Ohio State University Extension- Clinton County Office by participating in the *Real Money, Real World* program. *Real Money, Real World* is a hands-on program that gives young people (8th grade students) the opportunity to make lifestyle and budget choices similar to those they will make as adults. It is intended to be a partnership of the County, Ohio State University Extension, the schools, and the community. *Real Money, Real World* consists of three parts: a pre-simulation preparation, a hands-on budget management and decision-making simulation, and a post-session evaluation of choices made. District staff will participate in the simulation phase of the program by volunteering to serve at specific stations that will be visited by each student. While assisting students at the various stations, District staff will offer students information on local recycling opportunities as well as recycled-content promotional materials as a follow-up to classroom recycling-education presentations.

In 2017, three schools (Wilmington Middle School, Blanchester Middle School, and Clinton-Massie Middle School) participated. The program reached approximately 550-600 eighth-grade students.

The SWMD anticipates continuing this partnership and will engage with at least one group, industry association, per year to explore additional opportunities.

Name	Start Date	End Date	Goal
Recycling Outreach to Communities	2016	Ongoing	4

This program connects the SWMD face-to-face with residents to encourage residents to recycle. As the SWMD engaged with community elected officials to promote curbside recycling, it was apparent the SWMD needed to direct this program towards research. Efforts developed a door-to-door household survey to research the desire to participate in curbside recycling. This survey was first implemented in Port William in 2016 and then tweaked and repeated in other villages in 2017.

During the Spring of 2016, the District conducted a door-to-door survey of 87 households in the Village of Port William. Included with each survey packet were residential recycling flyers, recycled-content promotional items, and information about the District's drop-off recycling program.

While the survey effort only yielded a 21% response rate, it provided local officials with some valuable information:

- 61% of respondents reported regularly using the District's drop-off program
- 78% of respondents are interested in curbside recycling
- Of those households responding that they did not currently use the recycling drop-off program, 57% indicated that they would be interested in curbside recycling if it was made available.

Based upon the information gathered from these surveys, Village officials inquired of local haulers about the possibility of adding curbside recycling to their current waste collection services. Unfortunately, due to Port William's small size and rural location, no haulers were willing to provide curbside recycling in that area. However, Village officials expressed interest in looking into the possibility of forming a waste consortium with other potential communities in the future.

During the summer of 2017, a door-to-door recycling survey was conducted of households in the Villages of Blanchester, Sabina, New Vienna, Martinsville, Midland, and Clarksville. Included with each survey packet were residential recycling flyers, recycled-content promotional items, and information about the District's drop-off recycling program. The surveys also attempted to gauge the level of interest in curbside recycling. Responses to the surveys indicated that most residents have a desire for curbside recycling in their communities.

The villages, along with their percentage of residents interested in curbside recycling, are as follows: Blanchester (79%); Martinsville (92%); Clarksville (100%); *Midland (inconclusive - too few surveys returned); *New Vienna (inconclusive - too few surveys returned); *Sabina (inconclusive - too few surveys returned). *Although the District did not receive enough completed surveys to draw substantial conclusions in Midland, New Vienna, and Sabina, a majority of those households that responded indicated an interest in curbside recycling.

Research demonstrates an overall interest in curbside recycling. The challenge is collection service to the communities. As the SWMD continues working with community officials to overcome collection service barriers, assistance to conduct additional research through surveys will be available.

In addition, efforts will focus on the drop-off program changes (see outreach priority).

Name	Start Date	End Date	Goal

Recycling Resources Brochure	Ongoing	Ongoing	4

The District maintains a list of "Hard to Get Rid Of" items on the website along with local outlets for recycling those materials. It also prints an abbreviated version of the most commonly requested items into a "How Do I Get Rid of That?" brochure that is distributed during recycling collection drives and other public events. This information is regularly updated for accuracy as needed, and all listings are verified annually. This guide helps residents find information on best ways to recycle, reuse or dispose of household items.

Name	Start Date	End Date	Goal
School Contests	Ongoing	Ongoing	4

To encourage motivations among school-age children, the SWMD hosts two contests. For students in grades K-5, the students can participate in the "Earth Day Poster Contest" and the "Recycled Christmas Ornament Contest". Winners in the poster contest get their posters published into a calendar that is distributed to schools and government offices throughout the District. Ornament contest winners get entries recognized by County Commissioners during a special tree lighting ceremony and displayed on the County Christmas Tree located in the center of the courthouse.

Year	Earth Day Poster Participants	Recycled Christmas Ornament
2016	126 Homeroom Classes	72 Homeroom Classes
2017	140 Homeroom Classes	78 Homeroom Classes
2018	111 Homeroom Classes	94 Homeroom Classes

In 2018, contestants were also presented with various recycled-content prizes.

Name	Start Date	End Date	Goal
School Open House Events	Ongoing	Ongoing	4

The District generally participates in one school's open house event at the beginning of the school year. The District sets up a booth in which recycling literature and promotional items are distributed to those in attendance. However, due to a scheduling conflict, the District was unable to participate in that school's event in 2018.

Name	Start Date	End Date	Goal
School Presentations	Ongoing	Ongoing	4

The SWMD has a library of presentations for school-age students on recycling, litter prevention, and other solid waste related issues. A part-time Education Specialist conducted these presentations in 2016 and 2017. When the Education Specialist retired in July 2017, the position was vacant until 2020. The Outreach Specialist position is full-time and has outreach responsibilities in addition to school presentations.

Year	Number of Presentations	Number of Students
2016	172	4,256
2017	145	3,760
2018	94	2,192

Name	Start Date	End Date	Goal
Social Media Outreach	2016	Ongoing	4

The District continued to maintain a "News Updates" database for providing interested residents with periodic emails regarding upcoming program and events. The District also began gathering information and data for developing a Facebook page. The Facebook page was launched in 2019.

Name	Start Date	End Date	Goal
The Recycling Educator Newsletter	Ongoing	Ongoing	4

The Recycling Educator Newsletter is a publication provided to teachers across the County. This is mailed out at the beginning of each school year with the intent that teachers will plan to incorporate in their lesson plans for the year. A separate *Recycling Educator* is published for each grade level, detailing specific District activities/programs and relating them to that grade's learning standards. The format of this semi-annual newsletter is designed with the intent to not only inform educators of District-sponsored programs, but also to draw relevance to their students' course-study, thus promoting environmental stewardship while simultaneously aiding in the achievement of state-mandated academic benchmarks. It is believed that such dovetailing of District and classroom goals will provide schools with a more open approach to environmental education.

In 2018, the newsletter was also posted on the District's website.

OUTREACH PRIORITIES –

Name	Start Date	End Date	Goal
Outreach Priority – Drop-off Recycling	2021	Fall 2022	4

The District is consolidating drop-off locations beginning in 2021. To keep users recycling, users need to know changes to the program so as to avoid confusion and frustration during changes. About a month before sites close, the District will inform residents of location closings and changes and continue education during changes as well as after. Much of the campaign design will be from input received from users during engagements (see table below).

Target Audience	Tier	Tactic	Deliverable	Metrics
Audience: Residents using drop-off recycling locations **Problem (Desired Behavior Change):** 1) Use consolidated drop-off locations 2) Decrease material contamination	1	Educate residents about consolidation plan and create baseline measurement on tonnage	FY2021 Develop consolidation plan and post new consolidation location map on Facebook and website. Present new locations at City of Wilmington council and township trustee meeting.	Establish baseline tonnage at drop-off
	1	Observe current behavior and conduct onsite interviews with recycling users understand what media platform to use to reach the audience.	FY2021 Staff locations and hand out address for new location and direct audience to website for additional drop-off location addresses prior to consolidation. Increase presence on social media.	Define barrier to craft message. Track media posts messages and frequencies
	1	After site location changes, staff new drop-off consolidation locations to obtain feedback	FY2021 Discover incidents barriers and benefits with move	Define barrier to craft communication message.

Target Audience	Tier	Tactic	Deliverable	Metrics
	1	Continued outreach to users	FY2021 Implement additional campaign strategy	Using measurement baseline determine campaign success after 3 months of implementation
	2	Create baseline measurement on number of sites (disregard locations that are closing for consolidation) that have had dumping issues in the past	Already completed observational measurement pre-campaign. FY2021 Complete observational measurement post-campaign.	Establish baseline number to weigh against after communications campaign
	2	Observe current behavior and conduct onsite interviews with recycling users at at-risk drop-off locations to understand why contamination material and to understand what media platform to use to reach the audience.	FY2021 Discover incidents barriers and benefits	Define barrier to craft communication message. Establish baseline number of incidents observed by users to weigh against after communications campaign
	2	Based on data, create strategic, material contamination communications campaign measurement and tactics. Message specific to barriers. Identify media platform and prompts.	FY2021 Implement campaign strategy	Using measurement baseline and goals determine campaign success after 6-12 months of implementation

Name	Start Date	End Date	Goal
Outreach Pilot – Cardboard Campaign	2021	2021 but if pilot extends could also be ongoing	4

Start date is expected in 2021 but may be delayed depending on the challenges with cardboard pilot program adding to Wilmington-West location. Could expand.

Research

Research demonstrates challenges with the infrastructure to collect cardboard. Currently only those residents living in the City of Wilmington have access to recycle cardboard at the curb. Other residential access is available for residents to drop-off at the Wilmington Landfill. Barriers to this drop-off are lack of convenient hours to drop-off in the evening or on the weekend. Recognizing these challenges, the District needs to be ready to implement a communication strategy to tell residents changes and opportunities to recycle this material if and when program/infrastructure changes occur. Implementation for this outreach priority is not yet established because of the challenges with cardboard management.

Baseline cardboard collected in 2018 is 2,272 tons.

Outreach Planning and Implementation

There are two audience groups the District is targeting.

1. City of Wilmington

The District will conduct more research through meetings and phone calls to further refine and identify challenges and barriers the City anticipates operationally to scale operations larger to handle cardboard from the Wilmington location drop-offs. With the changes to the City's cardboard operations they agreed to pilot a cardboard only drop-off at the Wilmington-West location. At this location the City will provide the container (6-yard dumpster), collection, and compaction to send to a processor. The District also anticipates technical assistance support service and operations.

2. Residents

The behavior change desired for residents is that they recycle cardboard at the Wilmington-West drop-off location. In the developed outreach it is important the District identify this as a pilot program.

Target Audience	Tier	Tactic	Deliverable	Metrics
Audience: Residents recycle cardboard at Wilmington-West drop-off recycling location **Problem (Desired Behavior Change):** Recycle cardboard	1	Educate residents to specific drop-off location cardboard will be accepted at and create baseline measurement on tonnage	FY SPRING 2021 Staff location to pre-educate residents that change is coming and when to expect change. City and District will jointly release a press release. District will develop collateral of how to recycle cardboard (photos, videos, etc.)	Establish baseline tonnage at drop-off.
	1	After material added observe behavior and conduct onsite interviews with recycling users understand what media platform to use to reach the audience.	FY2021 Staff locations and / or use sandwich education signs to show best practices. Obtain quotes from users for social media.	Define barrier to craft message. Track media posts messages and frequencies.
	1	After site location changes, staff drop-off location to obtain feedback.	FY2021 Discover incidents barriers and benefits.	Define barrier to craft communication message.
	1	Continued outreach to users.	FY2021 Use signs and show stats to show impact of diverting cardboard.	Using measurement baseline determine campaign success after 3 months of implementation

Evaluation

The District tracks recycling annually from a variety of sources. The District plans to monitor the annual tonnage of cardboard recovered to measure for impacts from outreach and infrastructure changes.

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

Table M-1 Remaining Operating Life of Publicly Available Landfills

Facility	Location	Years of Remaining Capacity (per 2019 Ohio EPA records)
Rumpke Brown Co Sanitary Landfill	Brown	83
Wilmington Sanitary Landfill	Clinton	48
Rumpke Waste Inc Hughes Rd Landfill	Hamilton	44
Stony Hollow Landfill, Inc	Montgomery	24
Athens Hocking C&DD/Reclamation Center Landfill	Athens	49
American Landfill, Inc.	Stark	70
Pine Grove Regional Facility	Fairfield	67
Suburban Landfill, Inc.	Perry	66
Cherokee Run Landfill	Logan	11
Beech Hollow Landfill	Jackson	86
Celina Sanitary Landfill	Mercer	1
Pike Sanitation Landfill	Pike	51

Source(s) of Information
Annual District Report Review Forms 2016, 2017, and 2018
2019 Ohio Solid Waste Facility Data Report Tables (Table 13) published by Ohio EPA
Assumptions: Only included Ohio landfills since majority of waste was disposed at in-state landfills.

Table M-1 lists the municipal solid waste landfills where waste from the SWMD was disposed in the reference year. The landfills listed include those that accepted direct-haul and those that accepted transferred waste.

Over the past three years, the SWMD disposed waste in 12 different in-state landfills and 1 out-of-state landfill. Table M-2 lists the landfill facilities and percentage of SWMD waste accepted in 2018. The landfills identified and percentages include direct hauled and transferred waste.

Table M-2 Tons and Percent Waste Sent to Disposal

Facility	Location	Percent of Clinton County Waste Accepted
Rumpke Brown Co. Sanitary Landfill	Brown	21.5%
Wilmington Sanitary Landfill	Clinton	56.2%
Rumpke Waste Inc., Hughes Rd Landfill	Hamilton	19.0%
Stony Hollow Landfill, Inc.	Montgomery	0.7%
Athens Hocking C&DD/Reclamation Center Landfill	Athens	0.3%

Facility	Location	Percent of Clinton County Waste Accepted
American Landfill, Inc.	Stark	0.1%
Pine Grove Regional Facility	Fairfield	0.0%
Suburban Landfill, Inc.	Perry	0.0%
Cherokee Run Landfill	Logan	0.7%
Beech Hollow Landfill	Jackson	0.1%
Celina Sanitary Landfill	Mercer	0.0%
Pike Sanitation Landfill	Pike	1.3%
Tradebe Treatment & Recycling, LLC	IN	0.0%

Source:
2018 Ohio Facility Data Tables (Table 15) published by Ohio EPA
Sample Calculation: 21,958 tons to Wilmington Sanitary Landfill / 39,064 total tons disposed in 2018 = 56% of waste disposed of at Wilmington Sanitary Landfill
Transferred waste to each landfill was calculated using ratio of total waste hauled to waste reported to each landfill.
Percentage of waste disposed in landfills = landfill total tons / total landfilled waste x 100%

As seen in Table M-2, more than half of the SWMD's disposal, 56.2%, was disposed of within the County at Wilmington Sanitary Landfill. The second most utilized landfill was the Rumpke Brown County Sanitary Landfill where more than 20% of the waste was sent. Taken together, these two landfills account for 77% of the SWMD's total disposal. The Rumpke Brown Co. Sanitary Landfill has 83 years of remaining capacity. According to the 2019 Ohio Facility Report, Wilmington Sanitary Landfill has 48 years of remaining capacity. Between both landfills there is adequate disposal capacity.

The City of Wilmington received a permit to expand the landfill in 2019. The permitted expansion expanded horizonal limits of waste placement from 21 acres to 45 acres and increased vertical limits from a maximum of 1099 feet to 1128.5 feet. This vertical and lateral expansion added 45 years of remaining life to the landfill.

B. Access to Captive 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. The SWMD did not send waste to captive landfills in the reference year.

Table M-3 Remaining Operating Life of Privately Available Landfills

Facility	Location	Years of Remaining Capacity
none		

Source(s) of Information:
2018 Ohio Facility Data Report Tables. Table 13.1. Captive Landfill Remaining Capacities and daily Waste Receipt Amounts in 2018

The SWMD has no reason to suspect a facility will close in the next eight years.

C. Incinerators and Energy Recovery Facilities

The SWMD sent a small amount of waste, 86 tons, to a waste to energy facility in Indiana in 2018. In general, incinerating solid waste is not a major component of solid waste management in Ohio. Therefore, in this Format 4.0, the SWMD needs to account for incineration only if more than 10% of the solid waste generated in the reference year was incinerated.

Table M-4 Incinerators and Energy Recovery Facilities Used by the District in the Reference Year

Facility Name	Location		Type of Facility	Waste Processed from the District (in tons)
	County	State		
In-District				
none				
Out-of-District				
none				
Out-of-State				
Indianapolis Resource Recovery Facility	Marion	IN	Waste to Energy	86
Total				**86**

APPENDIX N EVALUATING GREENHOUSE GAS (GHG)

The Waste Reduction Model (WARM)

WARM is a tool that US EPA developed to quantify the effects of waste management decisions on greenhouse gas emissions. The model demonstrates the benefits of alternative management technologies over traditional management methods. The most recent version of WARM was made available in March 2015. A SWMD can use a different but comparable modelling program to calculate greenhouse gas emission reductions provided the model accounts for waste management and recycling activities.

WARM is intended to compare municipal solid waste management scenarios. Therefore, use data for only the residential/commercial sector.

Each SWMD will run WARM twice and include the results in the solid waste management plan:

- For the first run, enter all quantities recycled in the reference year in the landfill column (for the baseline year) and for the alternative scenario, enter the quantities recycled in the tons recycled column.
- For the second run, enter the quantities of residential/commercial material recycled in the reference year in the tons recycled column (for the baseline scenario), and then enter the quantities projected to be recycled in the sixth year of the planning period in the alternative scenario column.

Include printouts of the results for both runs in the solid waste management plan.

A. GHG Measurement

Gases that trap heat in the atmosphere are called greenhouse gases. The main greenhouse gases are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), 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, manufacture, etc.

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 (CO_2E) measurement allow 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 CO_2E is simply the amount of CO_2 that would have the same global warming potential as the waste reduction impacts, when measured over a specified timescale. The international reporting standard for CO_2 emissions is metric tons, so carbon dioxide amounts may be reported as $MTCO_2E$, 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.

This report shows the metric tons of carbon dioxide equivalent ($MTCO_2E$), which describes the global-warming potential of all common greenhouse gases as an equivalent of carbon dioxide. Negative values indicate GHG savings and positive values indicate increasing emissions. In 2018, Clinton County generated 39,930 tons of MSW from the residential and commercial sectors, landfilled or incinerated 71% (28,487 tons), recycled 25% (10,166 tons) and composted 3% (1,277 tons)

EPA estimates of the GHG-related impacts of composting organics was developed within the framework of the larger WARM development effort and therefore, the presentation of results, estimation of emissions and sinks, and description of ancillary benefits are not comprehensive. One of the limitations is the lack of data and resources thus analyzing a small sampling of feedstocks and specific application scenarios for compost. A full range of soil conservation and management practices are not considered. Also, household hazardous wastes (HHW) and batteries were excluded because of lack of material category and no relevant proxy.

Total GHG Emissions from Baseline (Year 2018)	(22,237) $MTCO_2E$
Total GHG Emissions from Alternative (Year 2027)	(24,885) $MTCO_2E$
Incremental GHG Emissions	(2,648) $MTCO_2E$

If the SWMD had no diversion programs in place and all the diverted tons instead went to landfill, the $MTCO_2E$ savings would be close to zero. To put this into perspective, the diversion programs are equivalent to:

- Removing emissions from 4,678 passenger vehicles
- Conserving 2,479,135 gallons of gasoline
- Conserving 2,184 households' annual energy consumption

With the projected increase in diversion by 2027, there is an additional savings of (2,648) $MTCO_2E$ which is equivalent to:

- Removing emissions from an additional 557 passenger vehicles
- Conserving 295,196 more gallons of gasoline
- Conserving 260 additional households' annual energy consumption

APPENDIX O FINANCIAL PLAN

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

Ultimately, the solid waste management plan must demonstrate that the SWMD will have adequate money to implement the approved solid waste management plan for a period of 15 years, from 2022 to 2036.

A. Funding Mechanisms and Revenue Generated

In this section, all of the funding mechanisms expected to be used by the SWMD are discussed. In addition, anticipated revenues from each source listed below are projected for each year of the planning period.

1. Disposal Fee

Disposal fees are collected on each ton of solid waste that is disposed at landfills in the levying SWMD. There are three components, or tiers, to the fee. The tiers correspond to where waste was generated – in-district, out-of-district, and out-of-state. In-district waste is solid waste generated by counties within the levying SWMD and disposed at landfills in that SWMD. Out-of-district waste is solid waste generated in Ohio counties that are not part of the SWMD and disposed at landfills in the SWMD. Out-of-state waste is solid waste generated in other states and disposed at landfills in the SWMD.

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

- The in-district fee must be ≥ $1.00 and ≤ $2.00;
- The out-of-district fee must be ≥ $2.00 and ≤ $4.00; and
- The out-of-state fee must be equal to the in-district fee.

Statue (Ohio Revised Code 3734.57(B)) allows for the SWMD to generate revenues by levying fees on any waste disposed in landfills located in the SWMD. There is one landfill in Clinton County, the Wilmington Sanitary Landfill. As presented in Table O-1, the SWMD's existing fee structure is: $1.00 per ton of solid waste in-district; $2.00 per ton of solid waste out-of-district; and $1.00 per ton of solid waste out-of-state. The disposal fee was set in the District's first approved 1994 Plan and has not changed.

To project revenues, the SWMD analyzed historical revenue receipts and changes that happened to revenue sources. Total disposal fee revenue fluctuated from roughly $13,200 to $30,800, with an average of $23,400 over the past 5 years. Revenue from in-district waste has been fairly stable over this time, averaging approximately $12,700. Out-of-district revenue from the disposal fee has increased significantly since 2014 from approximately $1,000 to $11,900 in 2018, corresponding to the increase in out-of-district waste coming to the Wilmington Sanitary Landfill.

Figure O-1 depicts historical fluctuations between disposal fee revenue sources. In-district waste disposal contributed 92% of the revenue stream in 2014 while out-of-district contributed only 8%. Starting in 2015, out-of-district waste disposed in the SWMD began to grow, and in 2018 it accounted for 47% of the disposal fee revenue source.

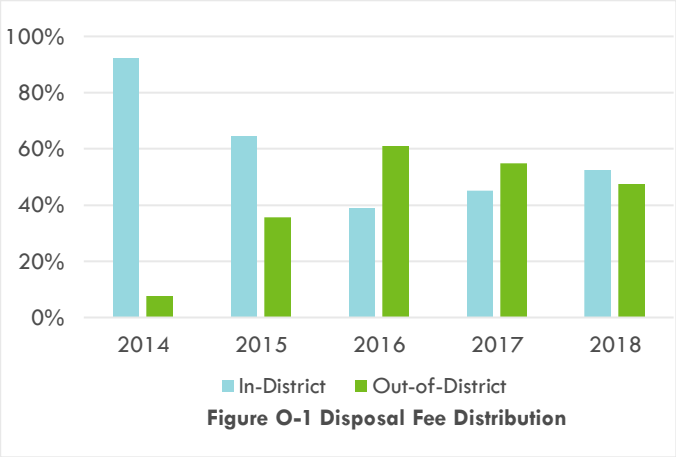

Figure O-1 Disposal Fee Distribution

The 2016 Plan Update did not project disposal fee revenue beyond 2017 because Wilmington Sanitary Landfill did not have sufficient permitted capacity. The landfill had not received an expansion PTI at the time of the 2016 Plan Update and thus did not project disposal revenue beyond the permitted capacity. In comparing actual revenues to the 2016 Plan Update budget projections:

In-district revenue projections: Annual revenues from 2014 to 2017 were held constant at $12,600. The actual average in-district disposal fee revenues from 2014 through 2018 were on par with this estimate.

Out-of-district revenue projections: Annual revenues from 2014 to 2017 were held constant at $1,489. The actual average out-of-district disposal fee revenues were substantially greater than the anticipated from 2015 to 2019 at approximately $13,125.

Out-of-state revenue projections: The 2016 Plan did not project accepting out-of-state waste at the Wilmington Sanitary Landfill. The landfill did not receive any out-of-state waste from 2014 through 2018. Thus, no out-of-state revenues were projected.

The historical revenues of the 2016 Plan Update were used to guide the budget projections for this plan update. Table O-1 shows the in-district and out-of-district revenue projections are estimated to hold flat at the 2015 to 2018 average annual revenues.

Table O-1 Disposal Fee Schedule and Revenue (in accordance with ORC Section 3734.57(B))

Year	Disposal Fee Schedule ($/ton)			Revenue ($)			Total Disposal Fee Revenue ($)
	In-District	Out-of-District	Out-of-State	In-District	Out-of-District	Out-of-State	
2014	$1	$2	$1	$12,190	$1,025	$0	$13,215
2015	$1	$2	$1	$14,472	$7,976	$0	$22,448
2016	$1	$2	$1	$10,031	$15,743	$0	$25,774
2017	$1	$2	$1	$13,891	$16,888	$0	$30,779
2018	***$1***	***$2***	***$1***	***$13,173***	***$11,892***	***$0***	***$25,065***
2019	$1	$2	$1	$15,420	$12,529	$0	$27,949
2020	$1	$2	$1	$18,826	$15,673	$0	$34,498
2021	$1	$2	$1	$12,892	$13,125	$0	$26,017
2022	$1	$2	$1	$12,892	$13,125	$0	$26,017

Year	Disposal Fee Schedule ($/ton)			Revenue ($)			Total Disposal Fee Revenue ($)
	In-District	Out-of-District	Out-of-State	In-District	Out-of-District	Out-of-State	
2023	$1	$2	$1	$12,892	$13,125	$0	$26,017
2024	$1	$2	$1	$12,892	$13,125	$0	$26,017
2025	$1	$2	$1	$12,892	$13,125	$0	$26,017
2026	$1	$2	$1	$12,892	$13,125	$0	$26,017
2027	$1	$2	$1	$12,892	$13,125	$0	$26,017
2028	$1	$2	$1	$12,892	$13,125	$0	$26,017
2029	$1	$2	$1	$12,892	$13,125	$0	$26,017
2030	$1	$2	$1	$12,892	$13,125	$0	$26,017
2031	$1	$2	$1	$12,892	$13,125	$0	$26,017
2032	$1	$2	$1	$12,892	$13,125	$0	$26,017
2033	$1	$2	$1	$12,892	$13,125	$0	$26,017
2034	$1	$2	$1	$12,892	$13,125	$0	$26,017
2035	$1	$2	$1	$12,892	$13,125	$0	$26,017
2036	$1	$2	$1	$12,892	$13,125	$0	$26,017

Source(s) of Information:
CY 2014-2020 revenues sourced from Clinton County quarterly fee reports. All other amounts projected.
Sample Calculations:
Total Revenue from Disposal Fee (2014) = In District Fee + Out-of-District Fee + Out-of-State Fee

2. Generation Fee

In accordance with ORC 3734.573, a solid waste management district may levy fees on the generation of solid wastes within the SWMD. The generation fee for the SWMD is $6.50 per ton, and this fee has not changed since 2010.

The generation fee is the largest source of revenue for the SWMD, accounting for on average 83% of the District's total revenue source from 2014 to 2018. Historically, the revenue from the generation fee has been fairly stable, with a slight dip in 2016 that corresponds to a drop in residential and commercial disposal. It is not clear why this decrease in disposal occurred. On average, the District collected $185,005 annually over the past five years in generation fees. This average is slightly greater than generation fee revenue projections for that same time period in the 2016 Plan.

During the planning period, the SWMD anticipates the generation fee to remain a major source of revenue for the District, generating approximately $185,000 annually. The Policy Committee chose to project revenues conservatively by flatlining the generation fee revenue. In Table O-2, a $2.00 generation fee increase is shown beginning in year 2028. This increase is projected to balance the budget as a result of flat revenues and inflated expenses. Before the forecasted fee increase would be implemented, the District will be preparing another Plan Update and will assess the actual revenues and expenses to determine if the forecasted increase is necessary. The forecasted generation fee increase shown in Table O-2 is not being ratified with this 2022 Plan Update. It is forecasted to show a balanced budget in the final year plan year, 2036, of the planning period.

Table O-2 Generation Fee Schedule and Revenue

Year	Generation Fee Schedule ($ per ton)	Total Revenue from Generation Fee ($)
2014	$6.50	$181,796
2015	$6.50	$193,409
2016	$6.50	$169,292
2017	$6.50	$189,461
2018	**$6.50**	***$191,068***
2019	$6.50	$210,071
2020	$6.50	$223,296
2021	$6.50	$185,005
2022	$6.50	$185,005
2023	$6.50	$185,005
2024	$6.50	$185,005
2025	$6.50	$185,005
2026	$6.50	$185,005
2027	$6.50	$185,005
2028	$8.50	$241,930
2029	$8.50	$241,930
2030	$8.50	$241,930
2031	$8.50	$241,930
2032	$8.50	$241,930
2033	$8.50	$241,930
2034	$8.50	$241,930
2035	$8.50	$241,930
2036	$8.50	$241,930

Source(s) of Information:
CY 2014-2020 revenues sourced from Clinton County quarterly fee reports. All other amounts projected.

3. 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.

Table O-3 Designation Fee Schedule and Revenue

Year	Designation Fee Schedule ($ per ton)	Total Designation Fee Revenue ($)
2014	None	$0

4. Loans

Table O-4 is not applicable. 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 2022 Plan.

Table O-4 Loans

Year Debt Was/Will be Obtained	Outstanding Balance	Lending Institution	Repayment Term (years)	Annual Debt Service ($)
n/a	n/a	n/a	n/a	n/a

5. Other Sources of District Revenue

The District receives revenues from: reimbursements, grants, recycling revenue, and tire recycling events.

Reimbursements: The SWMD receives a small amount of revenue from reimbursements. Reimbursement revenues are miscellaneous monies resulting from worker's compensation refunds, unused community grant refunds, various rebates, and personnel reimbursements. The revenue from this source is not stable from year to year, and the District does not project receiving any reimbursement revenue during the planning period.

Grants: The SWMD has received grants each year from 2014 to 2019, averaging approximately $12,800 annually in revenue for the District. The grant funding received by the District goes towards the scrap tire collection programs. Due to COVID-19 and the resulting state revenue shortfalls for this year, the Ohio EPA is suspending their grant program for 2020 and 2021. The District anticipates that the Ohio EPA will resume their grant funding program in 2022, however, a revenue projection is not forecasted in the planning period.

Recycling Revenue: Income from sale of recyclable materials. Recycling revenue fluctuates with the markets. In 2014, the SWMD received $1,230 in recycling revenue. In 2018, recycling revenue was down to $103 and at $17 in 2019. The decline in revenue is due to an overall decline in market value of commingled recyclable commodities on a nationwide scale. Along with declining market value of recyclable commodities, processing cost of recyclables has increased. In 2018, the District entered a new three-year agreement with Rumpke to process the drop-off recycling collected in the SWMD. The new agreement came with a 30% increase in cost. Due to the instability of recycling markets, the District does not project receiving any revenue from the sale of recyclable commodities.

Tire Recycling Event User Fees: In years 2020 and 2021 users are charged $1 per tire at the scrap tire recycling events. When the District holds a scrap tire event in the planning period, user fees are anticipated to be charged. User fees are not forecasted in Table O-5, because grant revenues are not forecasted.

Table O-5 Other Revenues and Other Revenue Sources

Year	Reimbursements	Grants	Recycling Revenue	Tire Event User Fees	Total Other Revenue
2014	$1,154	$8,479	$1,230		$10,863
2015	$750	$10,625	$181		$11,556
2016	$13	$18,625	$370		$19,007
2017	$0	$13,187	$189		$13,376
2018	***$0***	***$13,363***	***$103***		$13,465
2019	$1,470	$8,972	$17		$10,458
2020	$233	$0	$0	$1,099	$1,332
2021	$0	$0	$0	$1,100	$1,100
2022	$0	$0	$0	$0	$0
2023	$0	$0	$0	$0	$0
2024	$0	$0	$0	$0	$0
2025	$0	$0	$0	$0	$0
2026	$0	$0	$0	$0	$0

Year	Reimbursements	Grants	Recycling Revenue	Tire Event User Fees	Total Other Revenue
2027	$0	$0	$0	$0	$0
2028	$0	$0	$0	$0	$0
2029	$0	$0	$0	$0	$0
2030	$0	$0	$0	$0	$0
2031	$0	$0	$0	$0	$0
2032	$0	$0	$0	$0	$0
2033	$0	$0	$0	$0	$0
2034	$0	$0	$0	$0	$0
2035	$0	$0	$0	$0	$0
2036	$0	$0	$0	$0	$0

Source(s) of Information:
CY 2014-2020 revenues sourced from quarterly fee reports. All other amounts are projections.
Sample Calculations:
Other Revenue Total (2014) = interest + recycling revenue + rates and charges + out of state contract fee + grants + fee penalty + reimbursements + taxes + other

6. Summary of District Revenues

Table O-6 Total Revenue (in accordance with ORC 3734.57, ORC 3734.572 and ORC 3734.573)

Year	Disposal Fees	Generation Fees	Designation Fees	Other Revenue	Total Revenue
2014	$13,215	$181,796	$0	$10,863	$205,874
2015	$22,448	$193,409	$0	$11,556	$227,414
2016	$25,774	$169,292	$0	$19,007	$214,074
2017	$30,779	$189,461	$0	$13,376	$233,616
2018	**$25,065**	**$191,068**	$0	***$13,465***	**$229,598**
2019	$27,949	$210,071	$0	$10,458	$248,478
2020	$34,498	$223,296	$0	$1,332	$259,126
2021	$26,017	$185,005	$0	$1,100	$212,122
2022	$26,017	$185,005	$0	$0	$211,022
2023	$26,017	$185,005	$0	$0	$211,022
2024	$26,017	$185,005	$0	$0	$211,022
2025	$26,017	$185,005	$0	$0	$211,022
2026	$26,017	$185,005	$0	$0	$211,022
2027	$26,017	$185,005	$0	$0	$211,022
2028	$26,017	$241,930	$0	$0	$267,947
2029	$26,017	$241,930	$0	$0	$267,947
2030	$26,017	$241,930	$0	$0	$267,947
2031	$26,017	$241,930	$0	$0	$267,947
2032	$26,017	$241,930	$0	$0	$267,947
2033	$26,017	$241,930	$0	$0	$267,947
2034	$26,017	$241,930	$0	$0	$267,947
2035	$26,017	$241,930	$0	$0	$267,947

Year	Disposal Fees	Generation Fees	Designation Fees	Other Revenue	Total Revenue
2036	$26,017	$241,930	$0	$0	$267,947

CY 2014-2020 revenues sourced from quarterly fee reports. All other amounts are projections (refer to Table O-2 and O-5).
Sample Calculations:
Total Revenue (2014) = Disposal Fees + Generation Fees + Designation Fee + Other Revenue

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. The SWMD finances its operations with three main sources of revenue: generation fee, disposal fee, and grants.

In 2018, total revenue was $229,598. The largest source of revenue is the generation fee followed by the disposal fee.

B. Cost of Implementing Plan

Table O-7 Expenses

Line #	Category/Program	2014	2015	2016	2017	2018	2019	2020	2021
1	**1. Plan Monitoring/Prep.**	$12,753	$6,697	$0	$3,600	$0	$3,780	$29,495	$3,600
1.a	a. Plan Preparation	$12,753	$0	$0			$0	$29,495	
1.b	b. Plan Monitoring		$6,697	$0	$3,600		$3,780		$3,600
1.c	c. Other		$0	$0			$0		
2	**2. Plan Implementation**	$164,149	$199,850	$209,280	$172,817	$147,388	$194,567	$215,956	$278,423
2.a	a. District Administration	$124,208	$118,386	$126,737	$132,607	$116,906	$125,521	$155,147	$155,807
2.a.1	Personnel	$121,112	$115,312	$123,718	$129,191	$113,824	$115,796	$149,420	$150,079
2.a.2	Office Overhead	$3,246	$3,074	$3,019	$3,416	$3,082	$9,725	$5,727	$4,000
2.a.3	Other		$0				$0		
2.b	b. Facility Operation	$0	$0	$0	$0	$0	$0	$0	$0
2.b.1	MRF/Recycling Center		$0						
2.b.2	Compost		$0						
2.b.3	Transfer		$0						
2.b.4	Special Waste		$0						
2.c	c. Landfill Closure/Post-Closure		$0						
2.d	d. Recycling Collection	$23,334	$64,595	$29,493	$21,955	$11,154	$47,819	$44,767	$98,616
2.d.1	Curbside		$10,000	$5,000			$0	$0	$5,000
2.d.2	Drop-off	$23,334	$54,595	$23,489	$21,955	$11,154	$47,819	$44,767	$93,616
2.d.3	Combined Curbside/Drop-off		$0	$0			$0		
2.d.4	Multi-family		$0	$0			$0		
2.d.5	Business/Institutional		$0	$1,004			$0		
2.d.6	Other		$0	$0			$0		
2.e	e. Special Collections	$5,915	$3,569	$12,376	$8,722	$12,623	$9,480	$11,470	$10,000
2.e.1	Tire Collection	$5,915	$3,569	$12,376	$8,722	$12,623	$9,480	$11,470	$10,000
2.e.2	HHW Collection		$0				$0		
2.e.3	Electronics Collection		$0				$0		
2.e.4	Appliance Collection		$0				$0		
2.e.5	Other Collection Drives		$0				$0		
2.f	f. Yard Waste/Other Organics		$0				$0		
2.g	g. Education/Awareness	$9,826	$9,868	$38,582	$8,748	$6,706	$7,747	$4,571	$13,000
2.g.1	Education Staff	$9,826	$0	$0			$0		
2.g.2	Advertisement/Promotion		$8,785	$9,876	$8,748	$5,116	$7,072	$3,584	$10,000
2.g.3	Other		$1,083	$28,707		$1,590	$675	$987	$3,000
2.h	h. Recycling Market Development	$0	$0	$0	$0	$0	$4,000	$0	$4,000
2.h.1	General Market Development Activities		$0				$4,000		$4,000
2.h.2	ODNR pass-through grant		$0				$0		
2.i	i. Service Contracts		$0						
2.j	j. Feasibility Studies		$0						
2.k	k. Waste Assessments/Audits		$0						
2.l	l. Dump Cleanup		$0						
2.m	m. Litter Collection/Education	$865	$3,345	$2,092	$785			$0	$2,000
2.n	n. Emergency Debris Management		$0						
2.o	o. Loan Payment		$0						
2.p	p. Other		$87						
3	**3. Health Dept. Enforcement**	$0	$0	$0	$0	$0	$0	$0	$0
	Health Department Name:								
	Health Department Name:								
	Health Department Name:								
	Health Department Name:								
4	**4. County Assistance**	$0	$0	$0	$0	$0	$0	$0	$0
4.a	a. Maintaining Roads								
4.b	b. Maintaining Public Facilities								
4.c	c. Providing Emergency Services								
4.d	d. Providing Other Public Services								
5	**5. Well Testing**								
6	**6. Out-of-State Waste Inspection**								
7	**7. Open Dump, Litter Law Enforcement**	$4,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
7.a	a. Heath Departments		$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
7.b	b. Local Law Enforcement								
7.c	c. Other	$4,000							
8	**8. Heath Department Training**								
9	**9. Municipal/Township Assistance**	$12,822	$0	$5,423	$3,609	$3,503	$3,953	$12,110	$5,000
9.a	a. Maintaining Roads								
9.b	b. Maintaining Public Facilities								
9.c	c. Providing Emergency Services								
9.d	d. Providing other Public Services	$12,822.16		$5,423	$3,609	$3,503	$3,953	$12,110	$5,000
10	**10. Compensation to Affected Community (ORC Section 3734.35)**								
	Total Expenses	$193,874	$208,547	$216,703	$182,025	$152,891	$204,299	$259,561	$292,295

Line #	Category/Program	2022	2023	2024	2025	2026	2027	2028	2029
1	**1. Plan Monitoring/Prep.**	$0	$3,600	$15,000	$18,600	$0	$3,600	$0	$18,600
1.a	a. Plan Preparation			$15,000	$15,000				$15,000
1.b	b. Plan Monitoring		$3,600		$3,600		$3,600		$3,600
1.c	c. Other								
2	**2. Plan Implementation**	$271,625	$224,774	$239,152	$238,769	$252,633	$251,755	$267,146	$266,816
2.a	a. District Administration	$159,505	$165,141	$170,995	$178,077	$183,397	$189,963	$196,786	$203,878
2.a.1	Personnel	$155,505	$161,141	$166,995	$173,077	$179,397	$185,963	$192,786	$199,878
2.a.2	Office Overhead	$4,000	$4,000	$4,000	$5,000	$4,000	$4,000	$4,000	$4,000
2.a.3	Other								
2.b	b. Facility Operation	$0	$0	$0	$0	$0	$0	$0	$0
2.b.1	MRF/Recycling Center								
2.b.2	Compost								
2.b.3	Transfer								
2.b.4	Special Waste								
2.c	c. Landfill Closure/Post-Closure								
2.d	d. Recycling Collection	$69,120	$44,633	$45,157	$45,691	$46,236	$46,792	$47,359	$47,938
2.d.1	Curbside	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
2.d.2	Drop-off	$64,120	$39,633	$40,157	$40,691	$41,236	$41,792	$42,359	$42,938
2.d.3	Combined Curbside/Drop-off								
2.d.4	Multi-family								
2.d.5	Business/Institutional								
2.d.6	Other								
2.e	e. Special Collections	$0	$0	$0	$0	$0	$0	$0	$0
2.e.1	Tire Collection	$0	$0	$0	$0	$0	$0	$0	$0
2.e.2	HHW Collection								
2.e.3	Electronics Collection								
2.e.4	Appliance Collection								
2.e.5	Other Collection Drives								
2.f	f. Yard Waste/Other Organics								
2.g	g. Education/Awareness	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000
2.g.1	Education Staff								
2.g.2	Advertisement/Promotion	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
2.g.3	Other	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
2.h	h. Recycling Market Development	$28,000	$0	$8,000	$0	$8,000	$0	$8,000	$0
2.h.1	General Market Development Activities	$28,000		$8,000		$8,000		$8,000	
2.h.2	ODNR pass-through grant								
2.i	i. Service Contracts								
2.j	j. Feasibility Studies								
2.k	k. Waste Assessments/Audits								
2.l	l. Dump Cleanup								
2.m	m. Litter Collection/Education	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
2.n	n. Emergency Debris Management								
2.o	o. Loan Payment								
2.p	p. Other								
3	**3. Health Dept. Enforcement**	$0	$0	$0	$0	$0	$0	$0	$0
	Health Department Name:								
	Health Department Name:								
	Health Department Name:								
	Health Department Name:								
4	**4. County Assistance**	$0	$0	$0	$0	$0	$0	$0	$0
4.a	a. Maintaining Roads								
4.b	b. Maintaining Public Facilities								
4.c	c. Providing Emergency Services								
4.d	d. Providing Other Public Services								
5	**5. Well Testing**								
6	**6. Out-of-State Waste Inspection**								
7	**7. Open Dump, Litter Law Enforcement**	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
7.a	a. Heath Departments	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
7.b	b. Local Law Enforcement								
7.c	c. Other								
8	**8. Heath Department Training**								
9	**9. Municipal/Township Assistance**	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
9.a	a. Maintaining Roads								
9.b	b. Maintaining Public Facilities								
9.c	c. Providing Emergency Services								
9.d	d. Providing other Public Services	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
10	**10. Compensation to Affected Community (ORC Section 3734.35)**								
	Total Expenses	$278,625	$235,374	$261,152	$264,369	$259,633	$262,355	$274,146	$292,416

Line #	Category/Program	2030	2031	2032	2033	2034	2035	2036

1	**1. Plan Monitoring/Prep.**	$15,000	$3,600	$0	$3,600	$15,000	$18,600	$0
1.a	a. Plan Preparation	$15,000				$15,000	$15,000	
1.b	b. Plan Monitoring		$3,600		$3,600		$3,600	
1.c	c. Other							
2	**2. Plan Implementation**	$282,776	$284,040	$299,618	$300,525	$317,773	$319,377	$337,352
2.a	a. District Administration	$211,249	$219,910	$226,875	$235,155	$243,765	$252,718	$262,029
2.a.1	Personnel	$207,249	$214,910	$222,875	$231,155	$239,765	$248,718	$258,029
2.a.2	Office Overhead	$4,000	$5,000	$4,000	$4,000	$4,000	$4,000	$4,000
2.a.3	Other							
2.b	b. Facility Operation	$0	$0	$0	$0	$0	$0	$0
2.b.1	MRF/Recycling Center							
2.b.2	Compost							
2.b.3	Transfer							
2.b.4	Special Waste							
2.c	c. Landfill Closure/Post-Closure							
2.d	d. Recycling Collection	$48,528	$49,129	$49,743	$50,369	$51,008	$51,659	$52,324
2.d.1	Curbside	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
2.d.2	Drop-off	$43,528	$44,129	$44,743	$45,369	$46,008	$46,659	$47,324
2.d.3	Combined Curbside/Drop-off							
2.d.4	Multi-family							
2.d.5	Business/Institutional							
2.d.6	Other							
2.e	e. Special Collections	$0	$0	$0	$0	$0	$0	$0
2.e.1	Tire Collection	$0	$0	$0	$0	$0	$0	$0
2.e.2	HHW Collection							
2.e.3	Electronics Collection							
2.e.4	Appliance Collection							
2.e.5	Other Collection Drives							
2.f	f. Yard Waste/Other Organics							
2.g	g. Education/Awareness	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000
2.g.1	Education Staff							
2.g.2	Advertisement/Promotion	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
2.g.3	Other	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
2.h	h. Recycling Market Development	$8,000	$0	$8,000	$0	$8,000	$0	$8,000
2.h.1	General Market Development Activities	$8,000		$8,000		$8,000		$8,000
2.h.2	ODNR pass-through grant							
2.i	i. Service Contracts							
2.j	j. Feasibility Studies							
2.k	k. Waste Assessments/Audits							
2.l	l. Dump Cleanup							
2.m	m. Litter Collection/Education	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
2.n	n. Emergency Debris Management							
2.o	o. Loan Payment							
2.p	p. Other							
3	**3. Health Dept. Enforcement**							
	Health Department Name:							
	Health Department Name:							
	Health Department Name:							
	Health Department Name:							
4	**4. County Assistance**							
4.a	a. Maintaining Roads							
4.b	b. Maintaining Public Facilities							
4.c	c. Providing Emergency Services							
4.d	d. Providing Other Public Services							
5	**5. Well Testing**							
6	**6. Out-of-State Waste Inspection**							
7	**7. Open Dump, Litter Law Enforcement**	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
7.a	a. Heath Departments	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
7.b	b. Local Law Enforcement							
7.c	c. Other							
8	**8. Heath Department Training**							
9	**9. Municipal/Township Assistance**	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
9.a	a. Maintaining Roads							
9.b	b. Maintaining Public Facilities							
9.c	c. Providing Emergency Services							
9.d	d. Providing other Public Services	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
10	**10. Compensation to Affected Community (ORC Section 3734.35)**							
	Total Expenses	$304,776	$294,640	$306,618	$311,125	$339,773	$344,977	$344,352

The expense line items in Table O-7 are the same as those that the District uses to report expenses for the quarterly fee report. In 2015, Ohio EPA updated the expense line items on the quarterly fee report. In some cases, the line items used to report expenses historical quarterly fee reports will differ from the line items in Table O-7. Each expense applicable to the District allocated to line items in Table O-7 are explained here:

1. Plan Monitoring/Prep.

1.a Plan Preparation

2014 – 2019 – The costs shown for 2014 through 2019 are actual expenses for preparing the solid waste management plan.

2020 – 2036 – The expense line items shown are estimates for consulting fees for plan preparation beginning in 2020 and expected every five years.

1.b Plan Monitoring

2014 – 2019 – The costs shown for 2014 through 2019 are actual expenses for monitoring the solid waste management plan and conducting annual district report surveys.

2020 – 2036 – The expense line items shown are estimates for plan monitoring.

2. Plan Implementation

2.a District Administration

2.a.1 Personnel

2014 – 2019 - Expenses line items include cost for payroll, payroll taxes, and benefits for District personnel (including PERS, Medicare, and insurance). The costs shown for 2014 through 2019 are actual expenses. Administrative costs also include some program costs which are difficult to separate into their own line item. Those program costs are absorbed into the various administrative costs line items. The part-time Education Specialist retired in July 2017 and the Recycling Specialist retired in July 2020. A full-time Outreach Specialist was hired in 2020 combining job duties from both former positions.

2020 – 2036 - In 2020, the U.S. national inflation rate is projected to trend around 1.9%. Clinton County is budgeting for a 3% annual rate increase on salaries and 5% annually on fringes and benefits (with the exception being a 1% annual increase on life insurance premiums).

2.a.2 Office Overhead

2014 – 2019 - Supplies (including postage, reproductions, advertising, printing, utilities, etc.), equipment, travel, vehicles, uniforms, and other contract services. The costs shown for 2014 through 2019 are actual expenses. Office overhead increased from $3,082 in 2018 to $9,725 in 2019 to purchase new computers and make repairs to a truck.

The District website is hosted by the Clinton County Commissioners resulting in no expenditures for the District. Development and maintenance of the website is performed by District staff. With capability to add or update the website, any costs incurred by the District staff for updating or maintaining the site will be absorbed in administrative costs.

2020 – 2036 - Projecting into the future, equipment costs include budgets for a new computer every six years; otherwise overhead costs are projected to hold at $3,500 a year.

2.d. Recycling Collection

2.d.1 Curbside

2014 – 2019 - In 2015 and 2016, the City of Wilmington was awarded the Curbside Recycling Grant in the amounts of $10,000 and $5,000 respectively for their curbside recycling program.

2020 – 2036 - The SWMD is budgeting $5,000 annually in curbside grants.

2.d.2 Drop-off

This comprises capital and operational costs to operate the single stream drop-off recycling program (provide drop-off bins, collect recyclables, and process recyclables). Other costs include maintenance, fuel, and supplies for maintaining a vehicle for the District. Vehicle maintenance expenses fluctuate.

The SWMD contracts with Caribou Services to assist in removing large items when they are dumped at the drop-off sites. Costs shown for 2014 to 2019 are actual expenses.

2015 - Increased costs for purchase of a District vehicle.

2018 - The SWMD negotiated a new three-year hauling and processing contract for drop-off recycling with Rumpke that included a 30% cost increase from the previous three-year contract.

2018 - To reduce illegal dumping at the recycling drop-off sites, Clinton County installed cameras at problem sites.

In 2018, financials were greatly affected by Rumpke's invoice issues. 2018 monthly invoices from February-December were not paid until January 2019. The total amount deferred from 2018 to 2019 was around $23,800, thus 2018 expenditures were lower and 2019 are higher.

2019- The SWMD experienced the same Rumpke invoicing issues in 2019. From July 2019 through March 2020, Rumpke's invoicing again had issues. All of those invoicing errors were finally resolved and paid in April 2020. The total costs incurred in 2019 (July-December) and paid in 2020 was around $13,300.

2020 – 2036 - Drop-off costs are projected using a 3% contract increase every three years and 1% option increase annually.

2021– 2036 - Optimization of drop-off locations will result in the reduction of drop-off locations to consolidate to five sites. The planned optimization will occur in 2021 and 2022. Site improvements are estimated to cost $80,000 over the two years. Concrete work was estimated at $5.75 per square foot at an estimated 2,500 square foot pad size. Security cameras cost $500 plus monitoring service cost at $36 every 2 to 3 months. Fencing (corral building) is estimated at $4,000 per location. Service costs increase 5% in 2021 and projected at 2% annually thereafter. Service costs were calculated per container to adjust for consolidation. Cost savings will be recognized on service and labor costs when sites are closed.

2.d.5 Business/Institutional

2016 - Two grants were issued in 2016. One in the amount of $436.75 to Pennant Moldings and the other in the amount of $540 to Blanchester High School. Grants were used for recycling collection services. After 2016, the funds were allocated across a few line items. Line item 2.h.1

General Market Development Activities includes costs to award the District's Go Green grants. Line item 9. Municipal/Township Assistance includes costs to award the Community grants. Staff assistance to review, administer and implement data collection surveys and technical assistance are included in line item 2.a.District Administration.

2.e. Special Collections

2.e.1. Tire Collection

2014 – 2019 - Expenses for tire collections, management, processing, and advertising. Two events a year were held, which were possible because the District was an Ohio EPA grant recipient. Costs shown are District grant match expenses.

2022 – 2036 – Annual budgeted program costs are not projected. This program is contingent upon grant funding or other unanticipated funding sources.

2.g. Education/Awareness

2.g.1 Education Staff

2014 – Expense report line item categories changed since 2014. The costs shown are actual expenses for advertisements and education and outreach.

2.g.2. Advertisement/Promotion

2015 – 2019 - The costs shown are actual expenses for education supplies, promotions, publications (brochures, flyers, etc.), advertising, school program activities, promotional items, etc.

2020 – 2036 - Annual budgeted program costs are held constant at $10,000 annually.

2.g.3. Other

2015 – 2019 – Funds were used for grants to schools, businesses and political subdivisions.

2021 – 2036 – Budgeting $3,000 every year for P.E.A.R grants.

2.h.1 General Market Development Activities

2019 – All grant programs fall under this expense line item. Other market development activities such as promotion of various recycling opportunities among area businesses as a cost-effective and environmentally-friendly alternative to traditional waste-disposal practices, working with local schools to expand their recycling efforts, and partnering with Main Street Wilmington to provided waste and recycling receptacles in the downtown area in order to reduce litter and provide recycling to visitors of the business district are personnel and education costs found in various line items.

2022-2036 - Budgeting $8,000 every other year for Go GREEN grants. Additionally, the District is allocating an amount up to $20,000 to expend in the first 5-year planning cycle (from 2022 to 2026). This allocation is for Economic Incentives, described in Appendix I, for securing grant fund matches or to fund opportunities or other initiatives to increase diversion and decrease landfilling of materials. A variety of state, national, and/or industry grant resources are available for the District to directly seek or indirectly support. Funds may be spent on, but not be limited to, options such as procuring containers, developing and procuring education materials, plus investment in composting, recycling or waste reduction technologies. Cardboard, single stream recycling, or food waste are examples of materials that may be targeted. The District may also implement programs by partnering with generators. If the funding is not used for a grant match then the District is

requiring the applicant, partner, generator to complete a District grant application for receiving project funding.

In Table O-7 the cost is shown distributed as one lump sum payment in year 2022 but may be expended in full or in small distributions over the five-year cycle. If for some reason the revenues exceed planned revenues for one of the planning years in the 2022-2026 planning cycle, the District may expend additional funding that is proportional to the increased revenue. This funding distribution is at the discretion of the Policy Committee and Board of Directors.

2.m. Litter Collection

2014 – 2017 – Funds were used for grants to communities and for miscellaneous supplies such as providing bags for cleanup projects.

2021 – 2036 - Budgeting $2,000 every year for litter collection.

3. Health Dept. Enforcement

No expenses incurred or budgeted

4. County Assistance

No expenses incurred or budgeted

5. Well Testing

No expenses incurred or budgeted

6. Out-of-State Waste Inspection

No expenses incurred or budgeted

7. Open Dump, Litter Law Enforcement

2014 – 2036 - Yearly funding is budgeted for enforcement, abatement and clean-up of open dump and scrap tire sites.

8. Health Department Training

No expenses incurred or budgeted

9. Municipal/Township Assistance

2014 – 2019 - Funds were used for Community Grants.

2021 – 2036 - Budgeting $5,000 every year for Community Grants.

Nothing contained in these budget projections should be construed as a binding commitment by the District to spend a specific amount of money on a particular strategy, facility, program and/or activity. Coordinator will review and revise the budget as needed, with support from the Board of County Commissioners and Policy Committee, to implement planned strategies, facilities, programs and/or activities as effectively as possible with the funds available. Revenues, including unused disposal fee revenue (fund balance) not otherwise committed to an existing strategy, facility, program or activity may be used to increase funding to improve the effectiveness of an existing strategy, facility, program or activity, and to provide funding for a new strategy, facility, program or activity the Policy Committee concludes is justified based on staff and consultant recommendations.

The District reserves the right to revise the budget and reallocate funds as programs change or as otherwise determined to be in the best interest of the District. The Board of County Commissioners shall thereafter approve any adjustments to the budget on an annual or more frequent basis. The District is committed to implementing planned strategies, facilities, programs and/or activities in a cost-effective manner.

The District is committed to improving the effectiveness and reducing the cost of all strategies, facilities, programs and activities. The Board of County Commissioners is authorized to expend District funds among other uses included in the Plan Update when costs are reduced. Additionally, the Board of County Commissioners is authorized to use reduced costs to provide grant funds or direct funding to evaluate, test and implement new strategies, facilities, programs and activities that are in the best interest of the District and are in concert with this Plan Update.

Table O-8 Budget Summary

Year	Revenue ($)	Expenses ($)	Annual Surplus/Deficit ($)	Balance ($)
2013			**Ending Balance**	630,837
2014	$205,874	$193,874	$12,000	$642,837
2015	$227,414	$208,547	$18,867	$661,704
2016	$214,074	$216,703	-$2,630	$659,074
2017	$233,616	$182,025	$51,590	$710,665
2018	$229,598	***$152,891***	***$76,707***	***$787,372***
2019	$248,478	$204,299	$44,179	$831,551
2020	$259,126	$259,561	-$434	$831,551
2021	$212,122	$292,295	-$80,173	$750,943
2022	$211,022	$278,625	-$67,603	$683,340
2023	$211,022	$235,374	-$24,352	$658,988
2024	$211,022	$261,152	-$50,130	$608,858
2025	$211,022	$264,369	-$53,347	$555,511
2026	$211,022	$259,633	-$48,611	$506,900
2027	$211,022	$262,355	-$51,333	$455,566
2028	$267,947	$274,146	-$6,199	$449,367
2029	$267,947	$292,416	-$24,469	$424,898
2030	$267,947	$304,776	-$36,830	$388,068
2031	$267,947	$294,640	-$26,693	$361,375
2032	$267,947	$306,618	-$38,671	$322,704
2033	$267,947	$311,125	-$43,178	$279,526
2034	$267,947	$339,773	-$71,827	$207,699
2035	$267,947	$344,977	-$77,031	$130,669
2036	$267,947	$344,352	-$76,406	$54,263

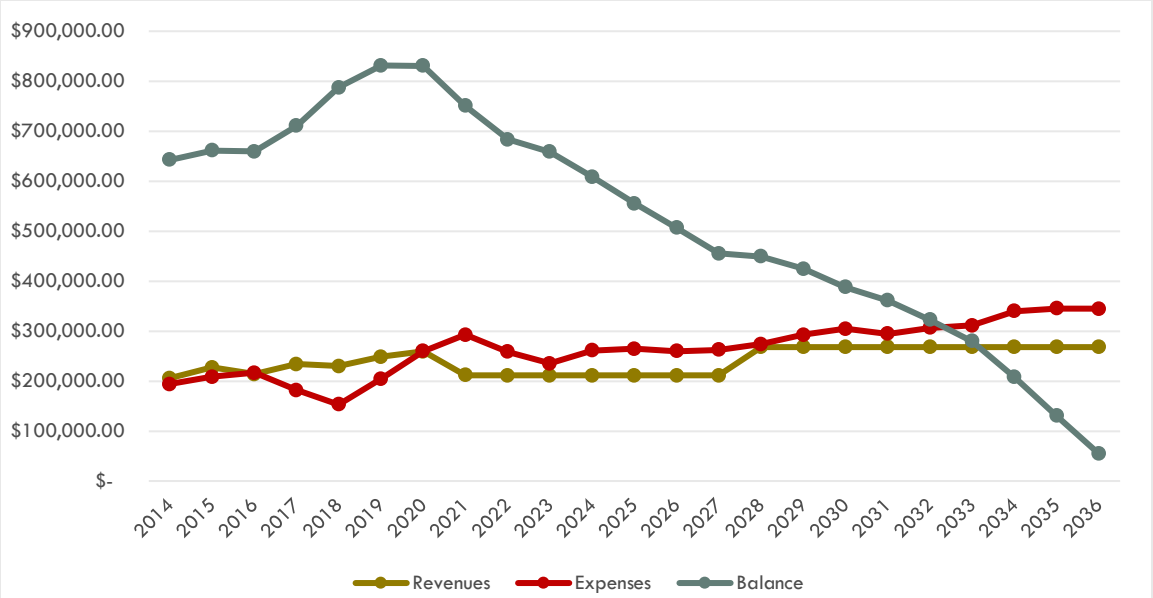

Figure O-2 Historical and Projected Budget

C. Alternative Budget

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.

D. Major Facility Project

A SWMD that is considering whether to construct and operate a new solid waste management facility or renovate an existing solid waste facility will provide a budget for the facility. For the purposes of this section, a solid waste management facility means a facility the SWMD owns and operates or will own and operate to manage solid waste and/or recyclable materials. Examples of solid waste management facilities include:

- a municipal solid waste landfill or solid waste transfer station
- a yard waste composting facility
- a material recovery facility
- a recycling center
- a permanent household hazardous waste collection facility

The SWMD is not planning to construct or operate a new solid waste management facility during this planning period.

APPENDIX P DESIGNATION

A. Statement Authorizing/Precluding Designation

The Board of Directors (County Commissioners) of the Clinton County Solid Waste Management District is hereby authorized to establish facility designations in accordance with Section 343.014 of the Ohio Revised Code.

The District reserves the right to implement facility designations, and to adopt District rules concerning facility designations.

B. Designated Facilities

The District reserves the right to implement facility designations, and to adopt District rules concerning facility designations. Should the District implement facility designations, in accordance with ORC 343.01(I)(2), the District will use the following procedure for issuing a waiver to allow solid waste to flow to facilities other than those designated by the District:

1.) Applicant submits a written request for waiver to the District at the following address:

Clinton County Board of Commissioners
46 S. South Street
Wilmington, Ohio 45177

2.) Written request shall include:

- Name and address of generator.
- Annual quantity (tonnage) of material being redirected.
- Type and nature of material being redirected.
- Facility where material will be disposed.
- Reason for waiver request.

Within 90 days of receipt of the waiver request, the District will act. Evaluation of a waiver request will be based on projections contained in the approved plan under Section 3734.53(A)(6) and (A)(7) and implementation and financing of the approved plan. Should the waiver be consistent with plan projections and will not adversely impact plan implementation and financing, the District may grant a waiver allowing solid waste to be taken to an undesignated facility for a minimum period of one year.

C. Documents

None included.

APPENDIX Q DISTRICT RULES

A. Existing Rules

The Clinton County Solid Waste Management District is hereby authorized to adopt rules in accordance with and pursuant to Division (G) of Section 343.01 of the ORC and Division of (C) of Section 3734.53 of the ORC, to the extent any such rules are determined by the Board from time to time to be necessary or desirable to implement any provision or to accomplish any objective of this Solid Waste Management Plan.

The Clinton County Solid Waste Management District does not have any rules allowed under these Divisions.

B. Proposed Rules

At this time the District is not proposing any rules allowed under these Divisions.

APPENDIX R BLANK SURVEY FORMS AND RELATED INFORMATION

2018 COMMERCIAL RECYCLING AND WASTE REDUCTION SURVEY

Dear Commercial Business,

Thank you for completing this survey. The information you provide for your company is crucial to monitoring the Clinton County Solid Waste Mgt. District's progress towards achieving Ohio's recycling goals. Your information will be combined with information submitted by other businesses and used to calculate the amount of material commercial businesses recycled in the Clinton County Solid Waste Mgt. District and Ohio, in 2018. Your company's response **will not** be reported individually; all data will be summarized by each North American Industry Classification Systems (NAICS) category.

For assistance completing this form or any questions related to the survey, please contact Jeff Walls, the Clinton County Solid Waste Mgt. District's Coordinator, at Walls.Jeff@ClintonCountyOhio.us or (937) 382-6177.

Please complete and submit this survey no later than 4/1/2019.

Options for Returning the Completed Survey

- ☐ Email directly to Jeff Walls at Walls.Jeff@ClintonCountyOhio.us, Subject Line: 2018 Commercial Survey
- ☐ Fax to (937) 382-5678, Attention: Jeff Walls
- ☐ Mail to Jeff Walls at 180 E. Sugartree Street, Wilmington, Ohio 45177

Instructions for Table A:

Please provide all information requested in ***Table A*** below. Even if your business does not currently recycle or is unable to report quantities of materials recycled, please complete ***Table A***. Doing so will allow the Clinton County Solid Waste Mgt. District to contact you in the future to discuss your recycling needs.

Table A. Company Information			
Name:		County:	
Address:	City:		Zip:
Contact Person:	Title:		
Email:	Telephone Number (include area code): ( ) -		
Primary NAICS:	Secondary NAICS:	Number of full-time employees:	
Would you like to be contacted by your local solid waste management district for recycling assistance? ☐Yes ☐No			

Instructions for completing Table B:

Table B provides a list of common materials that are recycled by industrial facilities on Ohio. Please indicate the unit of each quantity of material that is reported (pounds, tons or cubic yards). Provide any comments related to each material as necessary. Please do not report any liquid waste, hazardous waste or construction & demolition debris.

The list in ***Table B*** is not all-inclusive. If your facility recycles a material that is not listed in ***Table B***, please enter the name and quantity of that material on a line labeled **"Other".** Some materials may not apply to your operation; simply

enter "0" for those materials. Some of the materials are listed in broad categories. For example, "Plastics" include plastics #1-7, plastic films, etc. Please refer to the ***"Materials Cheat Sheet"*** attached to the end of this document for examples of materials and definitions.

If you do not currently track this information internally, your solid waste hauler or recycling processor may be able to provide it upon request. The Clinton County Solid Waste Mgt. District may also be able to provide you with assistance.

Table B. Quantities of Recycled Materials

Recyclable Material Category	Amount Recycled in 2018	Units	Name of Hauler or Processor that takes the material/other comments
Lead-Acid Batteries		☐ lbs ☐ tons ☐ yd^3	
Food		☐ lbs ☐ tons ☐ yd^3	
Glass		☐ lbs ☐ tons ☐ yd^3	
Ferrous Metals		☐ lbs ☐ tons ☐ yd^3	
Non-Ferrous Metals		☐ lbs ☐ tons ☐ yd^3	
Corrugated Cardboard		☐ lbs ☐ tons ☐ yd^3	
All Other Paper		☐ lbs ☐ tons ☐ yd^3	
Plastics		☐ lbs ☐ tons ☐ yd^3	
Textiles		☐ lbs ☐ tons ☐ yd^3	
Wood		☐ lbs ☐ tons ☐ yd^3	
Rubber		☐ lbs ☐ tons ☐ yd^3	
Commingled Recyclables		☐ lbs ☐ tons ☐ yd^3	
Yard Waste		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	

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

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

Jeff Walls, Coordinator
Clinton County Solid Waste Mgt. District
Phone (937) 382-6177
Email: Walls.Jeff@ClintonCountyOhio.us

Materials Cheat Sheet

Food
- Compostable food waste
- Food donations

Glass
- Bottles (any color)
- Jars

Ferrous Metals
- Mild Steel
- Carbon Steel
- Stainless Steel
- Cast Iron
- Wrought Iron

Non-Ferrous Metals
- Aluminum
- Copper
- Brass
- Silver
- Lead
- Misc. Scrap Metals

All Other Paper
- Office paper
- Paperboard
- Newspapers
- Folders
- Telephone Books
- Magazines
- Catalogs
- Junk Mail

Plastics
- Plastics #1-7
- Plastics Bottles
- Plastics Jugs
- Shrink Wrap
- Plastics Films
- Coat Hangers

Textiles
- Fabrics
- Clothes
- Carpet

Wood
- Bark
- Woodchips
- Sawdust
- Scrap Wood
- Shipping Pallets
- Boards

Commingled Recyclables
- This is a mix of several different materials that are placed into one container and hauled for recycling. It can include all or a combination of the materials listed above.

Examples of materials that fall under "Other"

- Appliances
- Electronics
- Non-hazardous chemical (solids only)
- Stone/Clay/Sand
- Yard Waste
- Sludge
- Tires
- Any other solid waste that is recycled at your facility

Estimating recycling tonnages – if you are not able to obtain exact tonnages of materials recycled, there are numerous ways to estimate the amount of material recycled in any given year. Below are some common conversion factors that may assist you with your estimations:

Material Type	Density (lb/cu yd)
Mixed Paper Recycling	484
Bottles and Cans	200
Single Stream Recycling	139
Cardboard	100

- (size of container (in cubic yards) x number of collections per month x 12) x density (see table above) = Total pounds per year
- 2,000 pounds = 1 ton

For more assistance, contact your solid waste management district.

2018 INDUSTRIAL RECYCLING AND WASTE REDUCTION SURVEY

Dear Industrial Facility,

Thank you for completing this survey. The information you provide for your company is crucial to monitoring the Clinton County Solid Waste Mgt. District's progress towards achieving Ohio's recycling goals. Your information will be combined with information submitted by other businesses and used to calculate the amount of material industrial businesses recycled in the Clinton County Solid Waste Mgt. District and Ohio, in 2018. Your company's response **will not** be reported individually; all data will be summarized by each North American Industry Classification Systems (NAICS) category.

For assistance completing this form or any questions related to the survey, please contact Jeff Walls, the Clinton County Solid Waste Mgt. District's Coordinator, at Walls.Jeff@ClintonCountyOhio.us or (937) 382-6177.

Please complete and submit this survey no later than 4/1/2019.

Options for Returning the Completed Survey

- ☐ Email directly to Jeff Walls at Walls.Jeff@ClintonCountyOhio.us, Subject Line: 2018 Industrial Survey
- ☐ Fax to (937) 382-5678, Attention: Jeff Walls
- ☐ Mail to Jeff Walls at 180 E. Sugartree Street, Wilmington, Ohio 45177

Instructions for Table A:

Please provide all information requested in ***Table A*** below. Even if your business does not currently recycle or is unable to report quantities of materials recycled, please complete ***Table A***. Doing so will allow the Clinton County Solid Waste Mgt. District to contact you in the future to discuss your recycling needs.

Table A. Company Information			
Name:		County:	
Address:	City:		Zip:
Contact Person:	Title:		
Email:	Telephone Number (include area code): ( ) -		
Primary NAICS:	Secondary NAICS:	Number of full-time employees:	
Would you like to be contacted by your local solid waste management district for recycling assistance? ☐Yes ☐No			

Instructions for completing Table B:

Table B provides a list of common materials that are recycled by industrial facilities on Ohio. Please indicate the unit of each quantity of material that is reported (pounds, tons or cubic yards). Provide any comments related to each material as necessary. Please do not report any liquid waste, hazardous waste or construction & demolition debris.

The list in ***Table B*** is not all-inclusive. If your facility recycles a material that is not listed in ***Table B***, please enter the name and quantity of that material on a line labeled **"Other".** Some materials may not apply to your operation; simply

enter "0" for those materials. Some of the materials are listed in broad categories. For example, "Plastics" include plastics #1-7, plastic films, etc. Please refer to the ***"Materials Cheat Sheet"*** attached to the end of this document for examples of materials and definitions.

If you do not currently track this information internally, your solid waste hauler or recycling processor may be able to provide it upon request. The Clinton County Solid Waste Mgt. District may also be able to provide you with assistance.

Table B. Quantities of Recycled Materials

Recyclable Material Category	Amount Recycled in 2018	Units	Name of Hauler or Processor that takes the material/other comments
Food		☐ lbs ☐ tons ☐ yd^3	
Glass		☐ lbs ☐ tons ☐ yd^3	
Ferrous Metals		☐ lbs ☐ tons ☐ yd^3	
Non-Ferrous Metals		☐ lbs ☐ tons ☐ yd^3	
Corrugated Cardboard		☐ lbs ☐ tons ☐ yd^3	
All Other Paper		☐ lbs ☐ tons ☐ yd^3	
Plastics		☐ lbs ☐ tons ☐ yd^3	
Textiles		☐ lbs ☐ tons ☐ yd^3	
Wood		☐ lbs ☐ tons ☐ yd^3	
Rubber		☐ lbs ☐ tons ☐ yd^3	
Commingled Recyclables		☐ lbs ☐ tons ☐ yd^3	
Ash (recycled ash only)		☐ lbs ☐ tons ☐ yd^3	
Non-Excluded Foundry		☐ lbs ☐ tons ☐ yd^3	
Flue Gas Desulfurization		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	
Other:		☐ lbs ☐ tons ☐ yd^3	

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

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

Jeff Walls, Coordinator
Clinton County Solid Waste Mgt. District
Phone (937) 382-6177
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Materials Cheat Sheet

Food
- Compostable food waste
- Food donations

Glass
- Bottles (any color)
- Jars

Ferrous Metals
- Mild Steel
- Carbon Steel
- Stainless Steel
- Cast Iron
- Wrought Iron

Non-Ferrous Metals
- Aluminum
- Copper
- Brass
- Silver
- Lead
- Misc. Scrap Metals

All Other Paper
- Office paper
- Paperboard
- Newspapers
- Folders
- Telephone Books
- Magazines
- Catalogs
- Junk Mail

Plastics
- Plastics #1-7
- Plastics Bottles
- Plastics Jugs
- Shrink Wrap
- Plastics Films
- Coat Hangers

Textiles
- Fabrics
- Clothes
- Carpet

Wood
- Bark
- Woodchips
- Sawdust
- Scrap Wood
- Shipping Pallets
- Boards

Commingled Recyclables
- This is a mix of several different materials that are placed into one container and hauled for recycling. It can include all or a combination of the materials listed above.

Examples of materials that fall under "Other"

- Appliances
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- Stone/Clay/Sand
- Yard Waste
- Sludge
- Tires
- Any other solid waste that is recycled at your facility

Estimating recycling tonnages – if you are not able to obtain exact tonnages of materials recycled, there are numerous ways to estimate the amount of material recycled in any given year. Below are some common conversion factors that may assist you with your estimations:

Material Type	Density (lb/cu yd)
Mixed Paper Recycling	484
Bottles and Cans	200
Single Stream Recycling	139
Cardboard	100

- (size of container (in cubic yards) x number of collections per month x 12) x density (see table above) = Total pounds per year
- 2,000 pounds = 1 ton

For more assistance, contact your solid waste management district.

APPENDIX S SITING STRATEGY

The District will rely upon the Ohio EPA siting strategy contained in Ohio Administrative Code 3745-27, 3745-30, and 3745-37 as well as other available siting criteria guidance from the Southwest District Office.

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:

1. *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 4.0.

2. *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 4.0.

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.

3. *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.

Certification Statement

Certification Statement for the Draft Plan

We as representatives of the Clinton County Solid Waste Management District Policy Committee, do hereby certify that to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the District Solid Waste Management Plan, and the availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of the district for the fifteen year period covered by the Plan are accurate and are in compliance with the requirements in the *District Solid Waste Management Plan Format*, version 4.0.

Linda L. Woods County Commissioner or Designee	January 12, 2021 Date Signed
Municipal Officer or Designee	Date Signed
Township Representative	Date Signed
Health Commissioner or Designee	Date Signed
Generator Representative	Date Signed
Member Representing General Interests of Citizens	Date Signed
Public Citizen Representative	Date Signed

Certification Statement for the Draft Plan

We as representatives of the Clinton County Solid Waste Management District Policy Committee, do hereby certify that to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the District Solid Waste Management Plan, and the availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of the district for the fifteen year period covered by the Plan are accurate and are in compliance with the requirements in the *District Solid Waste Management Plan Format*, version 4.0.

County Commissioner or Designee	Date Signed
[signature]	1-20-2021
Municipal Officer or Designee	Date Signed
Township Representative	Date Signed
Health Commissioner or Designee	Date Signed
Generator Representative	Date Signed
Member Representing General Interests of Citizens	Date Signed
Public Citizen Representative	Date Signed

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County Commissioner or Designee	Date Signed
Municipal Officer or Designee	Date Signed
Township Representative	1/20/2021 Date Signed
Health Commissioner or Designee	Date Signed
Generator Representative	Date Signed
Member Representing General Interests of Citizens	Date Signed
Public Citizen Representative	Date Signed

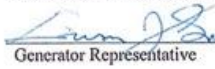
Certification Statement for the Draft Plan

We as representatives of the Clinton County Solid Waste Management District Policy Committee, do hereby certify that to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the District Solid Waste Management Plan, and the availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of the district for the fifteen year period covered by the Plan are accurate and are in compliance with the requirements in the *District Solid Waste Management Plan Format*, version 4.0.

County Commissioner or Designee	Date Signed
Municipal Officer or Designee	Date Signed
Township Representative	Date Signed
Health Commissioner or Designee	1-21-21 Date Signed
Generator Representative	Date Signed
Member Representing General Interests of Citizens	Date Signed
Public Citizen Representative	Date Signed

Certification Statement for the Draft Plan

We as representatives of the Clinton County Solid Waste Management District Policy Committee, do hereby certify that to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the District Solid Waste Management Plan, and the availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of the district for the fifteen year period covered by the Plan are accurate and are in compliance with the requirements in the *District Solid Waste Management Plan Format*, version 4.0.

County Commissioner or Designee	Date Signed
Municipal Officer or Designee	Date Signed
Township Representative	Date Signed
Health Commissioner or Designee	Date Signed
 Generator Representative	1/11/2021 Date Signed
Member Representing General Interests of Citizens	Date Signed
Public Citizen Representative	Date Signed

Certification Statement for the Draft Plan

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County Commissioner or Designee	Date Signed
Municipal Officer or Designee	Date Signed
Township Representative	Date Signed
Health Commissioner or Designee	Date Signed
Generator Representative	Date Signed
Charlie S. Weaver	1/19/21
Member Representing General Interests of Citizens	Date Signed
Public Citizen Representative	Date Signed

Certification Statement for the Draft Plan

We as representatives of the Clinton County Solid Waste Management District Policy Committee, do hereby certify that to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the District Solid Waste Management Plan, and the availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of the district for the fifteen year period covered by the Plan are accurate and are in compliance with the requirements in the *District Solid Waste Management Plan Format*, version 4.0.

County Commissioner or Designee	Date Signed
Municipal Officer or Designee	Date Signed
Township Representative	Date Signed
Health Commissioner or Designee	Date Signed
Generator Representative	Date Signed
Member Representing General Interests of Citizens	Date Signed
Jo Ellen Vance	1-10-2021
Public Citizen Representative	Date Signed

RECEIVED
JAN 11 2021
BY:

Resolution Adopting Plan

RESOLUTION No. 21-1

Declaring Adoption of the Amended 2022 Solid Waste Management Plan for Clinton County Solid Waste Management District.

The Solid Waste Management Policy Committee of the Clinton County Solid Waste Management District, met in regular session on November 10, 2021 at 180 E. Sugartree Street, Wilmington, Ohio, with 6 members present.

WHEREAS, the Policy Committee completed the draft amended Solid Waste Management Plan and submitted it to the Ohio Environmental Protection Agency for review and comment on January 27, 2021, and the Ohio Environmental Protection Agency provided comments in a non-binding advisory opinion issued on March 15, 2021;

WHEREAS, the Policy Committee considered the Ohio Environmental Protection Agency's non-binding advisory opinion and revised the amended Solid Waste Management Plan as the Policy Committee determined to be necessary or appropriate;

WHEREAS, the Policy Committee conducted a 30-day public comment period from September 6, 2021 to October 5, 2021 and held a public hearing October 6, 2021, to allow members of the public to provide comments regarding the amended Solid Waste Management Plan; and

WHEREAS, the Policy Committee determines that additional revisions to the amended Plan are appropriate based on public comments that were submitted to the Board.

NOW, THEREFORE, BE IT RESOLVED by the Policy Committee of the Clinton County Solid Waste Management District as follows:

1. The Policy Committee hereby adopts the final amended Solid Waste Management Plan for Clinton County Solid Waste Management District; and

2. The Policy Committee certifies that, to the best of its knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the District's draft, amended Solid Waste Management Plan, and availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of the District for the planning period covered by the Plan, are accurate and are in compliance with the requirements of Sections 3734.53 to 3734.56 of the Ohio Revised Code, Ohio Administrative Code 3745-27-90, and the state *Solid Waste Management Plan Format*, version 4.0.

This resolution shall be in effect immediately upon its adoption.

Page 1 of 2

Brenda Woods moved the adoption of this RESOLUTION, Charlie Weaver seconded the motion and the roll being called upon its adoption, the vote resulted as follows:

Members	Yea	Nay	Abstain	Not Present
Mr. Brian Shidaker, Chairman	✓			
Ms. Brenda Woods	✓			
Mr. Andy Borton				✓
Mr. Matt Johannes ~~Ms. Pam Walker-Bauer~~	✓			
Mr. Brian Laycock	✓			
Mr. Charlie Weaver	✓			
Ms. Jo Ellen Vance	✓			

Total votes FOR the resolution: 6 Total votes AGAINST the resolution: Ø

Brian Shidaker, Chairman
Solid Waste Policy Committee

ATTEST:

Jeffrey D. Walls Date: Nov. 10, 2021
Jeffrey D. Walls, Coordinator
Clinton County Solid Waste Management District

APPENDIX U RATIFICATION RESULTS

Clinton Count			
Board of County Commissioners	**Approved**	**Rejected**	**Date Resolution Adopted**
Community	**Population**		**Date Resolution Adopted**
	Approved	Rejected	
Cities			
Wilmington			
Townships			
Adams township			
Chester township			
Clark township			
Green township			
Jefferson township			
Liberty township			
Marion township			
Richland township			
Union township			
Vernon township			
Washington township			
Wayne township			
Wilson township			
Villages			
Blanchester			
Clarksville			
Lynchburg	Exclude in Highland County		
Martinsville			
Midland			
New Vienna			
Port William			
Sabina			
Total	0	0	
County Population			41,966
Ratification percentage			0%