

SOLID WASTE
APPROVED

OHIO ENVIRONMENTAL PROTECTION AGENCY

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LETTER OF APPROVAL
ATTACHED HERETO

2022 SOLID WASTE MANAGEMENT PLAN

Putnam 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 as highly amenable 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 amenable 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

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	Putnam Solid Waste Management District
Member Counties	Putnam County
Coordinator's Name (main contact)	Alaina Siefker
Job Title	Recycling & Wellness Coordinator/Utility Billing/Asst Clerk
Street Address	245 E. Main Street Suite 101
City, State, Zip Code	Ottawa, Ohio 45875
Phone	419-523-3656 ext 742
Fax	419-523-9213
E-mail address	Alaina.siefker@putnamcountyohio.gov
Webpage	https://putnamcountyrecycles.com

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

Member Name	Representing
Vincent T. Schroeder	County Commissioners
Dean Meyer	Municipal Corporations
Don Croy	Townships
Brandi Schrader	Health District
Eric Siefker	Generators
Jason Hedrick	Citizens
Jeff Giesige	Public

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

Name	Vincent Schroeder
Street Address	245 E Main Street, Suite 101
City, State, Zip Code	Ottawa, OH 45875
Phone	419-523-3656
Fax	
E-mail address	commissioners@putnamcountyohio.gov

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

Commissioner Name	County	Chairperson/President
Vincent Schroeder	Putnam	Vice-President
John Schlumbohm	Putnam	
Michael A. Lammers	Putnam	President

Technical Advisory Committee: Not utilized for this Plan Update.

Consulting Information



Resource Recycling Systems
416 Longshore Drive
Ann Arbor, Michigan 48105
1-800-517-9634
1-734-996-1361

CHAPTER 1 INTRODUCTION

A. Brief Introduction to Solid Waste Planning in Ohio

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 These issues combined with Ohio's outdated and incomplete solid waste regulations caused Ohio's General Assembly to pass House Bill (H.B.) 592. H.B. 592 dramatically revised Ohio's outdated solid waste regulatory program and established a comprehensive solid waste planning process.

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

B. Requirements of County and Joint Solid Waste Management Districts

1. STRUCTURE

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

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

2. SOLID WASTE MANAGEMENT PLAN

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

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

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

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

The 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 District is a single county solid waste district comprised of Putnam County, located in northwest Ohio. The District does not have separate offices but rather conducts business from the County Commissioner offices. The District operates a recycling center located in Ottawa Village.

The District'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. In the region, there are public and private sector landfills that have adequate landfill capacity for the waste generated in the District. Competition between private and public landfills is a factor in low landfill tip fees, which adds to the economic challenge of recycling that is somewhat difficult to overcome. The majority of the District's waste is directly hauled to landfills in neighboring Ohio counties Defiance, Hancock and Wyandot, with a smaller percentage disposed of out-of-state.

Putnam County SWMD's waste management strategy is integrated with a mix of several waste management approaches for managing the waste stream: recycling, composting, and landfilling. The District has a recycling center within the county that is used to process recyclables from the county's drop-offs. The processed recyclables are then brokered or directly sold to end markets. Processing to marketing of recyclables in the northwest Ohio region is decentralized with private businesses competing and driving the local discard economy. The surrounding counties have a number of material recovery facilities (MRFs). Collection services for trash and recyclables rely on self-haul and private haulers.

The District has had many successes in its material management effort. The District has localized organics management strategy, with four yard waste composting facilities within the county. Yard waste composting accounts for two thirds of the District's residential/commercial recycling rate. The District relies on private business efforts to drive commercial and industrial recycling. In Putnam County industrial businesses have collectively achieved a very high industrial recycling rate due largely to scrap metal recycling efforts.

This 2022 Plan Update analyzes the programs and infrastructure as well as potential challenges and gaps. The District has seen relatively consistent residential/commercial recycling rates over the last four years (2016-2019). The District's recycling infrastructure has not changed significantly over the period. The focus of the SWMD Plan has been diverting resources from the landfill and providing a high level of service for programs.

D. Waste Reduction and Recycling Goals

As explained earlier, a SWMD (refers to both SWMDs and Authorities) 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)*. 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 percent of the solid waste generated by the residential/commercial sector.
3. The SWMD shall provide the following required programs: a Web site; a comprehensive resource guide; an inventory of available infrastructure; and a speaker or presenter.
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.

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

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

A SWMD's solid waste management plan 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 SWMD will use to achieve the nine goals.

CHAPTER 2 DISTRICT PROFILE

Purpose of Chapter 2

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 MANGEMENT DISTRICT

The Solid Waste Management District is a single county District composed of Putnam County and the local units of governments within the County borders. 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

Putnam County is located in northwest Ohio and is positioned roughly a two-hour drive from Dayton, and Columbus metro areas and a one-hour drive east of Fort Wayne, Indiana. The county seat is Ottawa Village, which is the largest population center in the county. Ottawa Village is centrally located within the county. There are fifteen villages and fifteen townships within the county. The total county area is 484 square miles with the population density of 70 people per square mile.

Putnam County is relatively flat with 87% percent of land in the County used for cultivated crops. Only approximately 7% of the land is developed. The County has 5 park areas totally 164 acres. Putnam County is heavily rural. According to the US Census, the poverty rate in Putnam County, Ohio has fallen from 7.8% in 2014 to 7.6% in 2019, so that the County in 2019 had a lower poverty rate than the Ohio state, average of 13.1%, and the US average of 10.5%.

B. Population

1. REFERENCE YEAR POPULATION

In 2018, Putnam County ranked 70th in terms of population out of Ohio's 88 total counties³. 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. There are no additions or subtractions necessary to adjust Putnam's population.

2. POPULATION DISTRIBUTION

Table 2-2 shows the largest community in the county and the size of the community relative to the total population of the county. The largest community in Putnam County accounts for 13% of the SWMD's population.

Table 2-1 Population Distribution in the Reference Year

County		Largest Political Jurisdiction		
Name	Population	Community Name	Population	Percent of Total County Population
Putnam	33,780	Ottawa Village	4,333	13%

Table 2-2 shows distribution of the population in cities, villages, and townships and the distribution of the population in incorporated versus unincorporated areas. Population between villages and unincorporated townships is almost equally divided. There are no cities in Putnam County.

Table 2-2 Population Distribution

County	Percent of Population in Cities	Percent of Population in Villages	Percent of Population in Unincorporated Township
Putnam	0%	47%	53%

3. POPULATION CHANGE

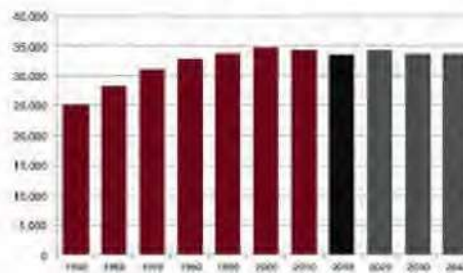
According to the Ohio Development Services Agency (ODSA), Office of Statistical Research, Putnam County's population grew from 1950 to 2000 then declined by 2.7% from 2000 to 2018. While the District's population declined, Ohio's population grew 3.0% from the same time period.

Figure 2-1 Putnam County Population Change Snapshot

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

Total Population

Census		Estimated	
1800		2013	34,121
1810		2014	34,196
1820		2015	34,019
1830	230	2016	33,994
1840	5,189	2017	33,854
1850	7,221	2018	33,780
1860	12,808		
1870	17,081	Projected	
1880	23,713	2020	34,430
1890	30,188	2030	33,860
1900	32,525	2040	33,860
		1910	29,972
		1920	27,751
		1930	25,074
		1940	25,016
		1950	25,248
		1960	28,331
		1970	31,134
		1980	32,991
		1990	33,819
		2000	34,726
		2010	34,499



Source: Ohio Development Services Agency, "Ohio County Profiles Putnam County", 2019.

As shown in Figure 2-1 the 2018 population is 33,780. Ohio Development Services Agency shows a projected population for 2020 greater than the 2018 population. Thus, the District looked to historical trends to forecast. The annualized percent change from 2010 (census data) to 2019, is declining population at a rate of 0.20%. Beginning in year 2020 the annualized population rate of change was applied to determine estimated population through the planning period. From 2022 (year one of the planning period) to 2036 (year fifteen of the planning period), the County is projecting population decline approximately 930 persons.

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.

Putnam County is a rural SWMD with a population density of 70 people per square mile. In Ottawa Village, the community with the highest population and population density, universal curbside recycling is a valuable service for residents. Glandorf Village also offers subscription based curbside recycling to residents that want it. 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 provided eight recycling drop-offs throughout the county to service areas with less population density. This recycling service, provided by the District, has more recently experienced high levels of abuse as well as challenges to staff the program. These are two main drivers for continual evaluation of the program and changes outlined to the drop-off program in this 2022 Plan Update.

There are over 14,000 housing units in Putnam County. The majority of housing structures are single family homes (86%).⁴ Of the total housing units, approximately one-fifth are renter occupied (Figure 2-2). This is about half the average rate for the state of Ohio (34% of occupied homes are rentals). This is important for solid waste management planning because renters tend to be more mobile than homeowners, and as such, it can be difficult to engage with renters around recycling programs. As the County has a higher

⁴ Census Reporter, American Community Survey 2018 5-year, <https://censusreporter.org/profiles/05000US39027-putnam-county-oh/>

percentage of owner occupied homes, the District can provide residents with recycling education more consistently and reach out more quickly about program changes or material focuses.

According to the US Census, the poverty rate in Putnam County was 7.6% in 2019 – or roughly 2,600 people within the county live in poverty. While this is lower than Ohio state average of 13.9%, it does impact finding economic and equitable solutions for sustainable waste management.

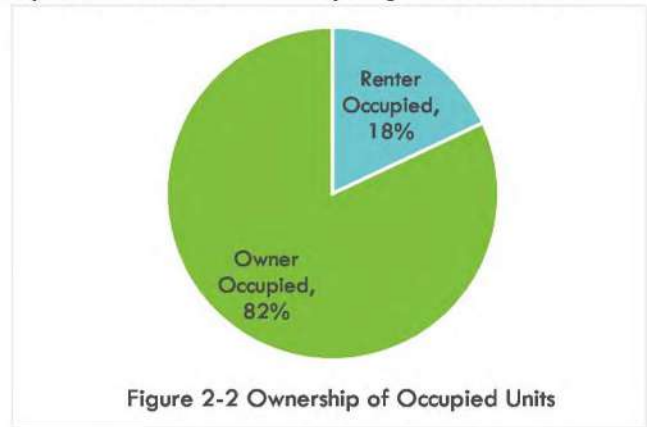


Figure 2-2 Ownership of Occupied Units

Source: Census Reporter. American Community Survey 2018 5-year
<https://censusreporter.org/profiles/05000US39027-putnam-county-oh/>

C. Profile of Commercial and Institutional Sector

Putnam County’s top industry sectors by number of employees are as follows: manufacturing (31%), health care and social assistance (11%), and educational services (10%). These top three employment sectors account for over half of the total employment in the County (52%). The top ten employment sectors employ 90% of the County’s employed population – or over 16,000 people (shown in Figure 2-3).

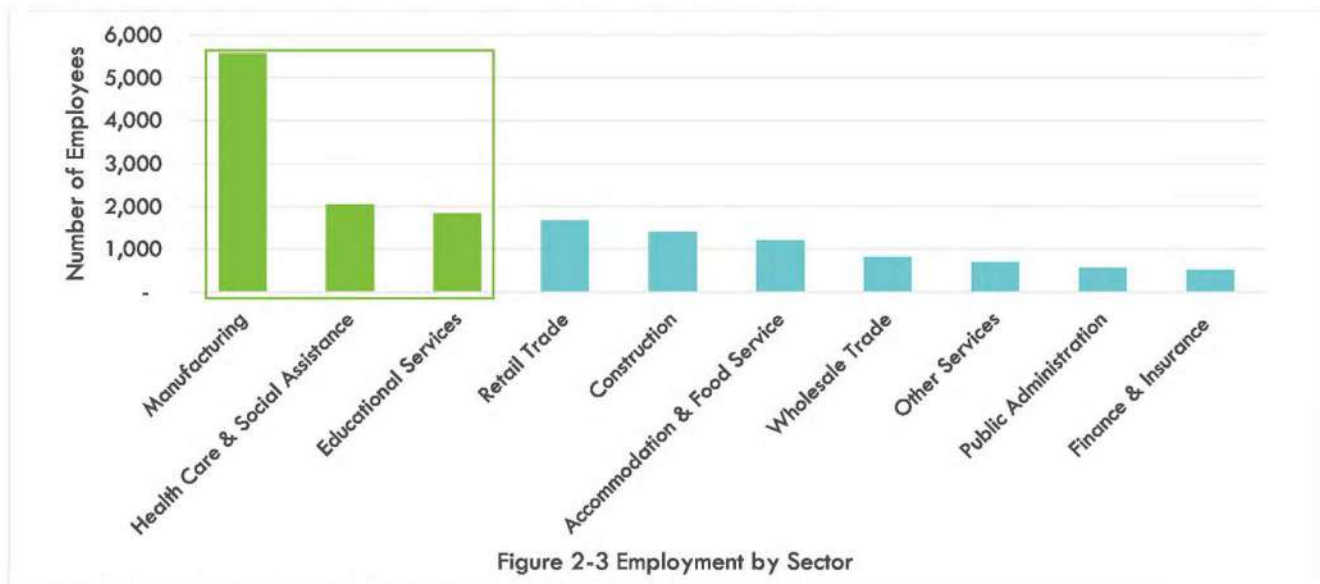


Figure 2-3 Employment by Sector

Source: Ohio Economic Profile Putnam County, July 2019, Ohio Department of Job and Family Services, Office of Workforce Development.
<https://ohiohmi.com/portals/206/EconomicProfiles/PutnamCounty2019.pdf>

The top employers in Putnam County are shown in Table 2-4. The major employers are disbursed throughout Putnam County, in or close to major population centers. Nearly 70% of employees live less than 30 minutes from their job by commute time.

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

Business Name	Industry Sector
Ottawa-Glandorf Local Schools	Educational Services
Putnam County Government	Public Administration
Wal-Mart Stores Inc.	Retail Trade

From 2013 to 2018, Putnam County’s total employment in the private sector increased by 5%. However, increases were not uniform across all sectors, some sectors saw declines in employment numbers. The information and education & health service sectors both had the most dramatic increase during the 5-year period; both experience a 20% increase in employment. In the public sector, collectively the number of people employed by the federal and local government decreased by 5% but those employed by the state government in Putnam County increased by 8%.

D. Profile of Industrial Sector

In 2018, Putnam County had 212 goods-producing establishments (industrial sector), which include natural resource mining, construction, and manufacturing. While only roughly a quarter of the industrial sector establishments are in manufacturing, manufacturing accounts for more than 75% of *industrial sector* employment and over 30% of *all employment* in the County. Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The top manufacturing employers in the County are listed in Table 2-5. The State of Ohio is a leader in manufacturing jobs, with 14,000 establishments.

Table 2-5 Top Employers by Employment in Manufacturing Sectors

Business Name	Industry Sector
Iams Co.	Manufacturing
Kalida Manufacturing Inc.	Manufacturing
Pro-Tec Coating Co. Inc.	Manufacturing
Progressive Stamping	Manufacturing
Production Products, Inc.	Manufacturing
Schnipke Engraving Co. Inc.	Manufacturing
Silgan Plastics Corp.	Manufacturing
Unverferth Manufacturing Co. Inc.	Manufacturing
Whirlpool Corp.	Manufacturing

Source: Ohio County Profiles for Putnam County 2020. <https://development.ohio.gov/files/research/C1070.pdf>

From 2013 to 2018, employment in two of the three industrial sectors mentioned above – construction, and manufacturing – has grown by 2% and 5%, respectively. The third industrial sector – natural resource mining – has declined 6% in that same time period.⁵

Industries are financially responsible for implementing their own recycling programs and contracting for trash and recycling services. The industrial sector in Putnam County accounts for 90% of the total waste generated in the County but the sector also diverts 99% of its waste generated. However, that 1% not diverted still represents 18% of the County’s total waste disposed annually (see Figure 2-4).

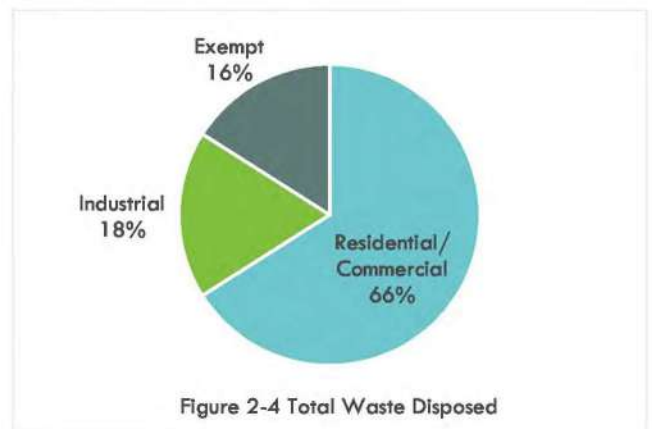


Figure 2-4 Total Waste Disposed

⁵ Ohio Economic Profile Putnam County, July 2019. Ohio Department of Job and Family Services, Office of Workforce Development. <https://ohiolmi.com/portals/206/EconomicProfiles/PutnamCounty2019.pdf>

E. Other Characteristics

None.

CHAPTER 3 WASTE GENERATION

Purpose of Chapter 3

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

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

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

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

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

A. Solid Waste Generated in Reference Year

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, Putnam County SWMD collected data from several sources including:

- Ohio EPA Facility Data – some facilities are required to submit annual reports to Ohio EPA.
- Ohio EPA MRF Reports – Ohio EPA collects data from commercial 'big box stores' and material recovery facilities.
- Ohio EPA Compost Facility Data – composter facilities and food haulers/grocer data reported 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.

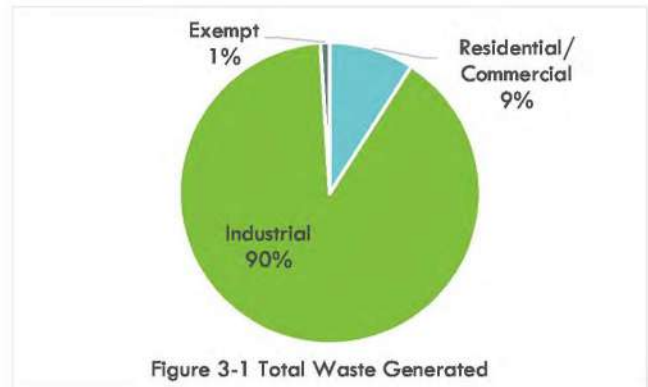
$$\text{Waste Generation} = \text{Wastes Disposed} + \text{Wastes Diverted}$$

In 2018, Putnam County generated 235,607 tons of material, as shown in Table 3-1, with the percentages by

sector shown in Figure 3-1.

Table 3-1 Solid Waste Generated in the Reference Year

Type of Waste	Quantity Generated (tons)
Residential/ Commercial	21,427
Industrial	211,822
Excluded	2,358
Total	235,607



1. Residential/Commercial Waste Generated in the Reference Year

Putnam County generated 21,427 tons of waste in the residential/commercial sector. This estimated generation indicates each person generates approximately 3.5 pounds per day. Benchmarking Putnam County’s per capita generation shows the County’s average is roughly half that of Ohio’s statewide average and less than U.S.’s national average.

Comparing the District to other surrounding SWMDs, Putnam County has a per capita generation rate below the average of the five compared counties, 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

Location	Lbs per Capita per Day
Putnam County	3.5
Hancock County	8.3
Henry County	7.2
Van Wert County	2.9
DFPW SWMD	14.6
Ohio Statewide	6.9
U.S Nationwide	4.9

2. Industrial Waste Generated in the Reference Year

The industrial sector generated 211,822 tons of waste, accounting for approximately 90% of total waste generated in the County. However, the majority of the waste generated by industrial sector, 99% is diverted, with 2,577 tons of the industrial waste generated that was disposed of. The County should strive to continue to work with the industrial sector, especially manufacturers, to ensure that these companies have resources necessary to maintain a high level of diversion.

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 the District accounts for 16% of the waste generated and is considered in the analysis of this plan.

B. Historical Waste Generated

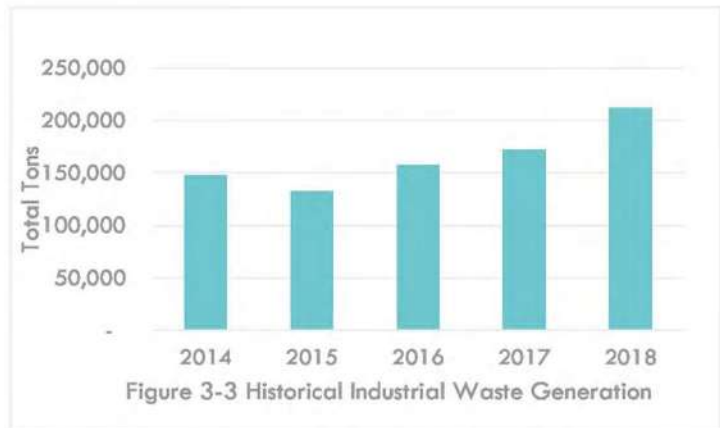
1. Historical Residential/Commercial Waste Generated

Excluding 2014, residential/commercial waste generation has fluctuated between 16,000 and 21,500 tons over the past five years and population has remained fairly flat, as shown in Figure 3-2. Generation was greatest in 2014, at 1.8 times the average tons for 2015-2018. 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.



2. Historical Industrial Waste Generated

Industrial generation dropped in 2015 but has been increasing year over year from 2015 to 2018 (shown in Figure 3-3). The generation rate is driven primarily by the industry’s recycling tons. The industrial recycling tonnage reported accounts for 99% of the District’s industrial waste generated. The primary materials recycled are metals from the manufacturing sector, having a high density and value.



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 decrease at a slow rate throughout the planning period. This projection is mainly attributed to the slow decline in the projected population. Diversion is projected to slightly increase during the planning period due to 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 2% annually from 2022 through 2027, then hold constant.

Excluded waste has fluctuated between a high of 2,400 tons in 2014 to a low of 1,200 tons in 2016. The average of the past five years was held as the constant projected through the planning period.

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

Table 3-2 presents projected waste generation for the first 6 years of the planning period.

Table 3-2 Waste Generation Projections

Year	Residential Commercial Waste	Industrial Waste	Excluded Waste	Total
	Waste (tons)	Waste (tons)	Waste (tons)	Waste (tons)
2022	21,097	203,483	1,969	226,549
2023	21,093	207,532	1,969	230,594
2024	21,089	211,662	1,969	234,720
2025	21,293	215,875	1,969	239,136
2026	21,290	220,172	1,969	243,430
2027	21,287	224,554	1,969	247,810

Source: Appendices G and K

Simple 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

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 facilities (often referred to flow control). A SWMD's authority to designated facilities is explained in more detail later in this chapter.

A. Waste Management Overview

Putnam County manages waste through a combination of landfills, recycling programs and facilities, transfer stations, and composting facilities. Figure 4-1 depicts total waste generation management in the reference year. More than 90% of the 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.

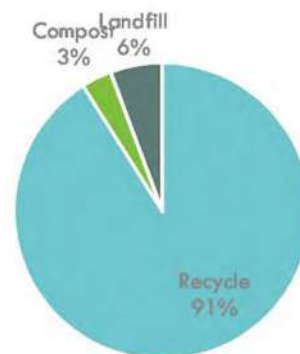


Figure 4-1 Methods of Managing Waste

Table 4-1 Methods for Managing Waste Projections

Year	Generate ¹	Recycle ²	Compost ²	Transfer ³	Landfill ³
2022	224,580	206,968	6,983	1,076	10,630
2023	228,625	211,032	6,983	1,074	10,611
2024	232,751	215,177	6,983	1,073	10,592
2025	237,168	219,613	6,983	1,071	10,572
2026	241,461	223,925	6,983	1,070	10,553
2027	245,841	228,324	6,983	1,068	10,534

Source:

¹Reference Year Appendix Table G-1 and Projections Table G-2

²Reference Year Appendix Table E-7 and Projections Table E-8 and Reference Year Appendix Table F-6 and Projections Table F-7

³Reference Year Appendix Table D-5 and Projections Table D-6

⁴Reference Year and Projections Appendix Table K-3

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.

Hancock County and Defiance County received almost equal shares of the District’s municipal solid waste (includes direct hauled and transferred) (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 used are owned and operated by the public sector.

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 91% 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.

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

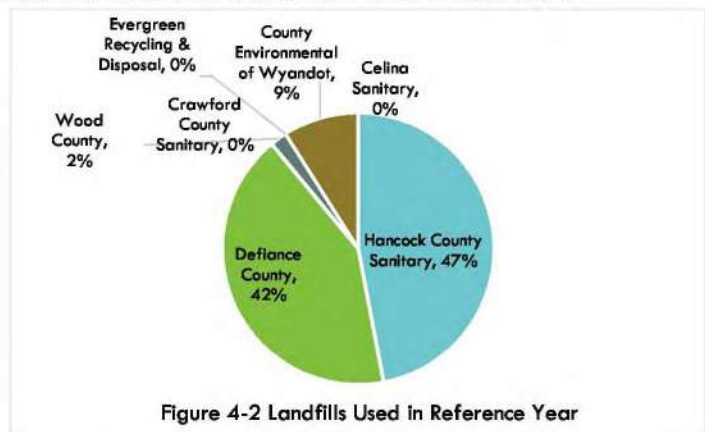


Figure 4-2 Landfills Used in Reference Year

3. Composting Facilities

Four compost facilities reported receiving materials from the District. All four are registered Class IV compost facilities located in the District. 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. 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. Having this infrastructure within a reasonable distance contributes to organic diversion.

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. Putnam County owns and operates a material recovery facility (MRF) that processes District recyclables.

The majority of recyclables are collected source separated and directed to Putnam County Recycling Facility. A smaller portion of recyclables from the Village of Ottawa's curbside program are processed out-of-district at Werlor Recycling. It is unknown where the Village of Glandorf recyclable are processed.

5. Waste Collection

Throughout the District municipal solid waste collected from residents, businesses, and institutions is transported to landfills by private waste operators. Recycling collection is hauled by private waste haulers except for drop-off recyclables which are hauled by the District.

C. Solid Waste Facilities Used in the Reference Year

1. Landfill Facilities

Table 4-2 lists the landfills receiving waste from Putnam 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			
<i>In-District</i>					
none					
<i>Out-of-District</i>					
Celina Sanitary Landfill	Mercer	Ohio	21	0.2%	4.3
County Environmental of Wyandot	Wyandot	Ohio	1,112	8%	98.2
Wood County Landfill	Wood	Ohio	198	1.5%	7
Evergreen Recycling & Disposal	Wood	Ohio	28	0.2%	37.5
Hancock County Sanitary Landfill	Hancock	Ohio	5,529	41%	33.8
Defiance County Sanitary Landfill	Defiance	Ohio	4,955	37%	51.6
Crawford County Sanitary Landfill	Crawford	Ohio	2	0.0%	33
<i>Out-of-State</i>					
National Serv All		IN	1,060	8%	Unknown

Treatment Facilities		IN	419	3.1%	Unknown
Total			13,323	100%	

Source:
2018 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 Putnam 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			
<i>In-District</i>					
None					
<i>Out-of-District</i>					
Waste Management of Ohio - Lima	Allen	Ohio	1,244	100%	out-of-state landfills
<i>Out-of-State</i>					
None					
Total			1,244	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 Putnam 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	
none				
Total				

4. Composting Facilities

Table 4-5 lists the permitted composting facilities receiving materials from Putnam 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
<i>In District</i>			
Village of Leipsic Composting Facility	Putnam	134	2%
Village of Columbus Grove	Putnam	5,841	75%

Ottawa Composting Facility	Putnam	1,662	21%
Glandorf Composting Facility	Putnam	105	1%
Out-of-District			
none			
Total		7,742	100%

Source:
Appendix B, Table B-5

5. Processing Facilities

Table 4-6 lists the processing facilities receiving materials from Putnam County in the reference year. Through survey efforts the out-of-district facilities were not identified. It is assumed Werlor Recycling takes materials to their facility located in Defiance County.

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

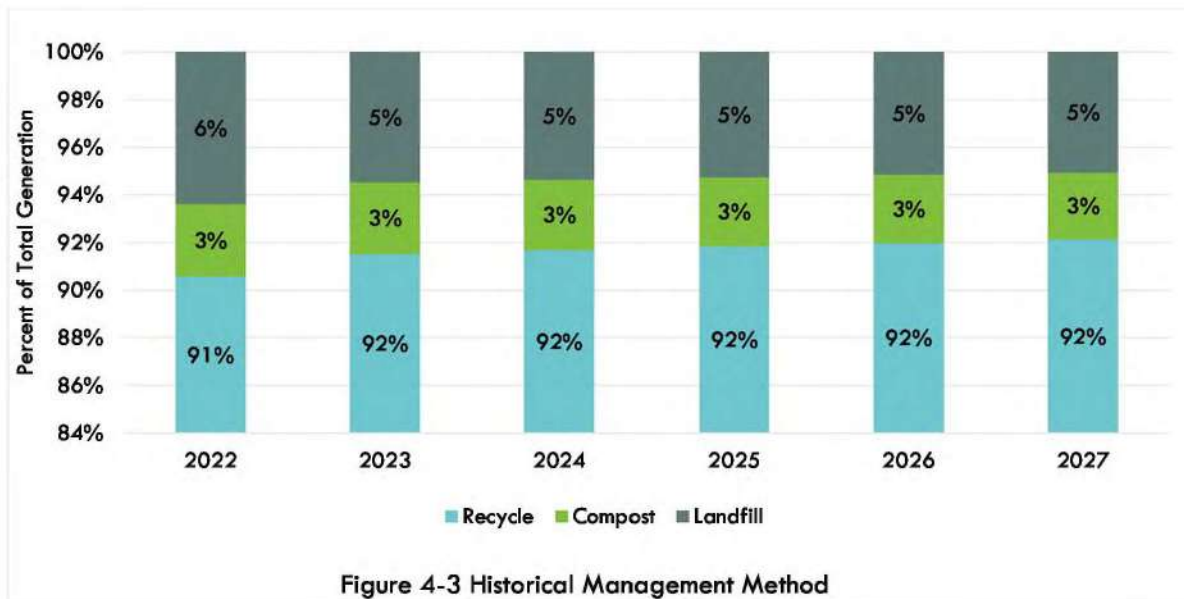
Name of Facility	Location		Facility Type	Recyclables Accepted from District (tons)
	County	State		
In-District				
Putnam County Recycling Facility	Putnam	Ohio	Dual stream MRF	862
Out-of-District				
Not identified				
Out-of-State				
None				
Total				862

Source:
Appendix B, Table B-7
Note:

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.

Putnam 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. Putnam 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.



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's siting strategy requires submission and approval of plans for the construction of Solid Waste Facilities by the Board. The applicant must submit plans and specifications and any additional information to adequately demonstrate eleven criteria identified in Appendix S.

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 Putnam 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	
<i>In-District</i>			
none		Ohio	
		Ohio	
<i>Out-of-District</i>			
none		Ohio	
<i>Out-of-State</i>			
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
Social Media Outreach	Increase social media presence

School Recycling Outreach	Find best arrangement for collecting recyclables at schools.
---------------------------	--------------------------------------------------------------

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	Village of Ottawa	Werlor	ongoing
SC1	Village of Glandorf	Republic	ongoing

Drop-off Recycling Locations

The District provides containers, collection equipment, and labor to collect drop-off bins. Prior to 2020, the 1 full-time and 6 part-time locations were available. There are a number of packaging items in the waste stream that are not recyclable, as well as items that are recyclable but not recyclable in the District Recycling Center. These are considered contaminants in the drop-off recycling stream. The District Recycling Center is unable to separate the full suite of plastic resins in the waste stream (labor and equipment limitations). Residents using the drop-off program and attempting to recycle anything not listed on the acceptable material list is contaminating the recyclables. As contamination levels increased the SWMD opted to stop the mobile service and focus on re-setting the program. The Ottawa location is monitored where the attendant checks the materials being dropped and educates directly to each resident. The hope is this one-on-one education will teach residents and that less restrictions to access will be needed.

Table 5-2 Drop-off Recycling Locations

ID #	Name	Service Provider	When Service was/will be Available
FTR1	Ottawa Village, 24 hours by Fairground (1205 E 2 nd Street Ottawa, OH 45875)	SWMD	ongoing
PTR2	Columbus Grove/Pleasant Township (VFW Lot 218 E. Sycamore Columbus Grove, OH 45830)	SWMD	unknown - 2020
PTR3	Continental Village & Monroe Twp (508 W Elm Street Continental, OH 45831)	SWMD	1996 - 2020
PTR4	Fort Jennings Village / Jennings Township (Park)	SWMD	1996 - 2020
PTR5	Kalida Village / Union Township (St Rt 114, Kalida Village Garage//Union Township Building)	SWMD	1996 - 2020
PTR6	Leipsic / Liberty and Van Buren Townships (343 S Belmore Street Leipsic, OH 45856)	SWMD	1996 - 2020
PTR7	Ottoville Village / Monterey Township (Water Tower Lot)	SWMD	1996 - 2020
FTR8	Nelson Manufacturing (6488 State Route 224)	SWMD	1996

ID #	Name	Service Provider	When Service was/will be Available
	Ottawa, OH 45875)		

Recyclables collected include Cardboard, Paper, Plastics Bottles #1 -#2, scrap aluminum, beverage cans, steel cans. Materials are collected source separated. Glass is only collected at the Ottawa Village location. The Ottawa site was improved in 2017 and has paving and fencing. Additionally, this site location is where the District Recycling Center is located. The site is open 9am-5pm Monday thru Friday. Saturday hours may be added.

2. Other Residential Recycling Programs

Name	Description
<i>Drop-off Recycling Initiatives</i>	The SWMD will look to develop partnerships to expand drop-off collection.

Name	Description
<i>Village of Pandora Infrastructure</i>	The SWMD will explore recycling access for the Village and help to devise a plan for curbside or drop-off programs.

Name	Description
<i>Curbside Recycling Initiatives</i>	The SWMD will conduct one-on-one outreach to political jurisdictions to explore curbside.

3. Commercial/Institutional & Industrial Sector Reduction and Recycling Programs

These programs are programs directly provided by District staff.

Name	Description
<i>School Recycling Mobile Paper & OCC</i>	The SWMD discontinued collection service in 2020. This strategy will use a cost/benefit analysis to engage with schools to bring services back. Collecting paper and cardboard from the schools is targeted of Fall 2023.

Name	Description
<i>School Recycling Permanent Paper & OCC</i>	Leipsic School and St. Mary's has a permanent bin to collect paper & cardboard.

Name	Description
<i>County Office Paper Recycling</i>	Putnam County Courthouse has implemented a program to collect paper in containers placed strategically around the courthouse.

Name	Description
<i>Special Event Outreach Displays</i>	Outreach efforts included newsprint, flyers, TV, postcards, pencils, letter openers & pamphlets. Presentations and displays to at least one event a year.

Name	Description
<i>Waste Assessments & Audits</i>	"Do-It Yourself" Audit tool for businesses to self-conduct.

Name	Description
<i>Glass Recycling Program</i>	Targets restaurants and bars. Several restaurants and bars use a permanent glass drop-off. Others, call the District's recycle workers and arrange a drop-off if they have a large quantity. Glass is sold loosely to a processor.

4. Restricted/Difficult to Manage Wastes

Name	Description
<i>Electronics Collection</i>	Electronics are collected at Recycle Day. Planned one event a year, dependent on donations and contributions to hold.

Name	Description
<i>HHW Collection</i>	Electronics are collected at Recycle Day. Planned one event a year, dependent on donations and contributions to hold. District provides information on its website and resource brochure for proper handling of HHW.

Name	Description
<i>Battery Collection</i>	Batteries are collected at Recycle Day. Planned one event a year, dependent on donations and contributions to hold. 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
<i>Scrap Tire Collection Program</i>	Putnam County Soil & Water Conservation hosts a Tire Collection day.

Name	Description
<i>Public and Private Composting Facilities</i>	The District does not fund or operate the Compost Facilities. As of 2018 there are 4 in-district Class IV compost facilities registered with Ohio EPA.

5. Funding/Grants/Economic Incentives

Name	Description
<i>"Buy Recycled" Campaign</i>	"Buy Recycled" message is integrated into programs and activities and in presentation made to the public.

Name	Description
<i>List of Businesses that sell recycled products (SWCD partnership)</i>	Promotion of businesses that close the loop and/or sell recycled products.

6. Facility Ownership/Operations

Name	Description
<i>Putnam County Landfill post-closure activities</i>	The Putnam County landfill is closed but needs maintenance through 2032. This involves costs for engineering's, leachate collection, water testing, well monitoring, new wells dug, leachate treatment, gas well monitoring, reporting procedures and costs related to the Putnam County Department of Health.

Name	Description
<i>Putnam County District Recycling Center</i>	Ownership and operations of material recovery facility to sort, bale, and broker recyclables. The District will seek grants in 2022 for equipment additions that will help operation efficiencies of the system.

7. Data Collection

Name	Description
<i>Commercial/Industrial Surveys</i>	Annual surveying of residential, commercial and industrial recycling, waste reduction, and yard waste composting practices. Surveys to brokers, processors, and solid waste haulers are also conducted.

8. Outreach, Education, Awareness, and Technical Assistance

Minimum education requirements prescribed by Goal 3:

- District maintains a website at <https://putnamcountyrecycles.com>
- 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
General Education & Outreach Efforts	X	X	X	X	X

School Recycling Outreach		X			
"Do It Yourself" Audit Tool			X	X	
Commercial/Institutional/Industrial Technical Assistance			X	X	
Conservation Days		X			
Social Media Outreach	X	X	X	X	X
Community Recycling Ambassadors	X				
HHW Education	X				
Backyard Composting Education	X				
Get Caught Recycling - Ottawa	X				
Lead-Acid Battery recycling outlet list	X				
Scrap Tire recycling outlet list	X				
PAYT Promotion & Technical Assistance					X

OUTREACH PRIORITY –

Name	Start Date	End Date	Goal
Outreach Priority – School Recycling Outreach	2023	Ongoing	4

Timeline assumes program will begin at start of school year in 2023. This outreach strategy will be used for any new schools added.

Target Audience	Tier	Tactic	Deliverable	Metrics
Audience: Schools collecting paper and cardboard Problem (Desired Behavior Change): 1) Find best arrangement for collecting recyclables from schools 2) Maximize paper and cardboard collected	1	Engage (phone conversations, one-on-one in person discussions) school administration to gauge interest in mobile collection		
	1	Research cost of trash and calculate estimated savings for recycling services	FY 2023 Cost Benefit Analysis	Cost of trash collection Cost of providing recycling collection
	1	Consensus for recycling arrangement	FY 2023 Agreement and Schedule Service	Service agreement
	2	Observe current behavior and conduct onsite custodial staff interviews to understand best system for in-school collection.	FY2023 Develop an in-school collection plan, Promote throughout the school,	Establish baseline tonnage of cardboard and paper. Define barriers.
	2	Train custodial staff and teachers to implement best collection practices in classrooms	Promote with teachers an activity to decorate collection containers (cardboard boxes).	Track number of custodial staff and teachers engaged. After 3 months of implementation measure cardboard to determine success.
	2	Continued outreach to users	FY2024 Implement additional campaign strategy after holiday break	

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	11,500	55%
2023	11,515	55%
2024	11,530	55%
2025	11,754	55%
2026	11,769	55%
2027	11,785	55%

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	202,450	99%
2023	206,499	100%
2024	210,629	100%
2025	214,842	100%
2026	219,139	100%
2027	223,521	100%

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).

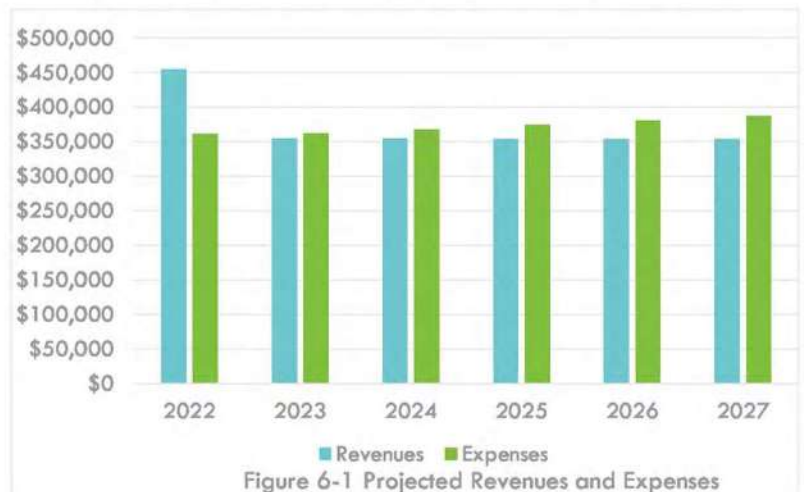
Ultimately, the solid waste management plan must demonstrate that the SWMD will have adequate money to implement the approved solid waste management plan. The plan does this by providing annual projections for revenues, expenses and cash balances.

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 three main sources of revenue: generation fee, county contributions, and sale of recyclables. The District projects to receive an annual average of \$370,931 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 \$372,111. Expenses are projected higher than revenues, expecting a net loss with the purpose of drawing down the reserve balance.



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 does not have active operating landfills in the District and does not plan to have operating landfills in the District's borders. Revenues are not collected and will not be collected from disposal fees at this time or

during the planning period.

2. Generation Fee

The generation fee is the second largest funding source for the District. The generation fee for the District is \$5.00 per ton.

Historically, the revenue from the generation fee has been fairly stable, with a slight dip in 2015 and 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 \$48,391 annually over the past five years in generation fees. To forecast, the residential, commercial and industrial landfill disposal tonnages projected as found in Appendix D are the base for

generation fee revenues. Revenue is calculated by multiplying those tonnages by the \$5 per ton generation fee and assuming 95% to account for accounting collections. Using this methodology, the average revenue generation for the planning period (2022-2036) anticipates approximately \$49,859 per year.

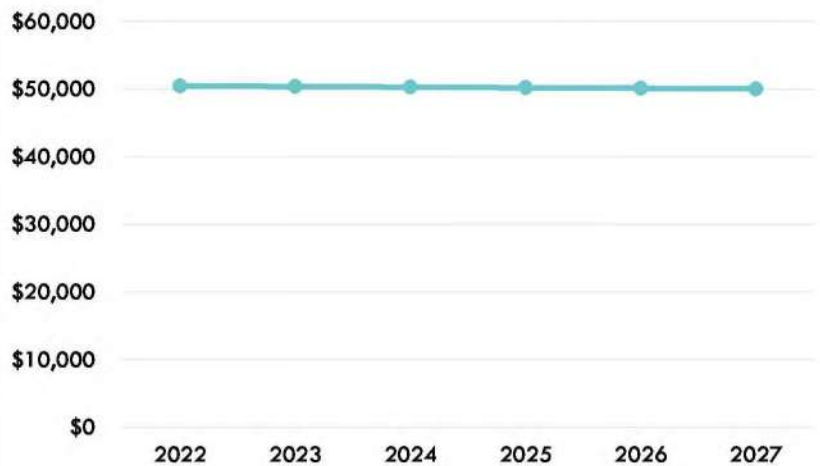


Figure 6-2 Projected Generation Fee Revenue

3. Fees collected via Designation Agreements

The District does not receive revenues from designation fees.

4. Other Funding Mechanisms Reimbursements

The District receives revenues from: rates and charges, donations, grants, recycling revenue, reimbursements, advance from county, and worker compensation.

- a. **County Contributions:** The District has historically received funding support from the County. Supplemental District funding will come from the landfill closure fund, if possible. If not, the county general fund will be used as it has in the past to specifically supplement areas of the recycling program. Occasionally there will be times when the county general fund will be needed. The County is a reliable funding source for the District. This funding is used when needed for any shortfalls in revenue. Funding from the County varies depending upon the fiscal health of the District and when the District may require an influx of cash. This may happen during special initiatives the District undertakes when District funds are unavailable. The District and County work very closely with the Commissioners and the Administrator to keep the District solvent.
- b. **Rates and Charges:** Rates and charges levied on improved parcels in the county to support landfill post-closure costs and is placed in the landfill closure fund. Rates and charges generate revenue of approximately \$220,000 each year. If a portion is left from the expenses of landfill processes and procedures (post-closure care), it is directed as supplement to fund the District's recycling efforts.
- c. **Donations:** From Recycle Day Event are projected at \$4,000 annually through the planning period.
- d. **Grants:** Grant monies were received in 2014, 2018 and 2019. Grants are not a reliable source of income and are not projected in the planning period.

- e. **Recycling Revenue:** The decline in revenue seen in 2018 and 2019 is due to an overall decline in market value of commingled recyclable commodities on a nationwide scale. From 2014 to 2018 the average annual revenue from recycling markets was approximately \$38,700. The recycling revenue in 2020 dipped to unhistorical lows as a result of lower volumes of materials processed. Due to the COVID 19 pandemic the Recycling Center and drop-offs were temporarily suspended. Due to the instability of recycling markets, the District projects \$30,000 annually from the sale of recyclable commodities..
- f. **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.
- g. **Adv/Cap Cr/Worker Compensation:** The District received an advance in worker compensation which was corrected in 2015. No revenue is projected in the planning period.

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

Table 6-1 Summary of Revenue

Year	Generation Fees	Other Revenue						Total Revenue
		County Contributions	Rates and Charges	Donations	Reimbursements	Grants	Recycling Revenue	
2018	\$53,076	\$109,536	\$0	\$8,620	\$468	\$100,000	\$46,855	\$318,555
2022	\$50,492	\$150,000	\$220,000	\$4,000	\$0	\$0	\$30,000	\$454,492
2023	\$50,401	\$50,000	\$220,000	\$4,000	\$0	\$0	\$30,000	\$354,401
2024	\$50,310	\$50,000	\$220,000	\$4,000	\$0	\$0	\$30,000	\$354,310
2025	\$50,219	\$50,000	\$220,000	\$4,000	\$0	\$0	\$30,000	\$354,219
2026	\$50,128	\$50,000	\$220,000	\$4,000	\$0	\$0	\$30,000	\$354,128
2027	\$50,038	\$50,000	\$220,000	\$4,000	\$0	\$0	\$30,000	\$354,038

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	\$5,000	\$0	\$0	\$0	\$0	\$0
Administration	\$109,866	\$137,451	\$142,086	\$146,886	\$151,856	\$157,004	\$162,335
Other Expenses	\$0	\$500	\$500	\$500	\$500	\$500	\$500
Recycling Center	\$91,924	\$68,292	\$69,387	\$70,525	\$71,706	\$72,933	\$74,208
Drop-off	\$600	\$0	\$0	\$0	\$0	\$0	\$0
Landfill Post Closure Care	\$0	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Total Expenses	\$202,390	\$361,243	\$361,973	\$367,910	\$374,062	\$380,436	\$387,043

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	\$318,555	\$202,390	\$116,165	\$200,979
Planning Period				
2022	\$454,492	\$361,243	\$93,249	\$104,788
2023	\$354,401	\$361,973	(\$7,573)	\$97,216
2024	\$354,310	\$367,910	(\$13,600)	\$83,615

2025	\$354,219	\$374,062	(\$19,843)	\$63,772
2026	\$354,128	\$380,436	(\$26,308)	\$37,464
2027	\$354,038	\$387,043	(\$33,005)	\$4,459

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

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 2: The SWMD shall reduce and recycle at least 25% 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.

None.

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

Financial data presented in this 2022 Plan Update differs from the fee reports as shown in the following table. Ohio EPA made an adjustment to the beginning balance in year 2017 to reconcile the quarterly fee reports to the SWMD's auditor reports.

	2015	2016		2017	2018	2019
Ohio EPA's FSR Beginning Balance	\$48,885.25	\$129,521.36	↙	\$61,222.81	\$84,814.21	\$200,978.82
Ohio EPA's FSR Revenues	\$237,167.03	\$155,069.88		\$219,562.80	\$318,554.70	\$317,434.50
Ohio EPA's FSR Expense	\$156,530.72	\$124,639.68		\$195,971.40	\$202,390.09	\$403,226.13
Ohio EPA's FSR Ending Balance	\$129,521.56	\$159,951.56		\$84,814.21	\$200,978.82	\$115,187.19
2017 beginning balance was an ADJUSTMENT YEAR with OHIO EPA						

E. Material Change in Circumstances/Contingencies

Ohio law, ORC Section 3734.56 (D), requires district plans to be updated when the District Board of Directors determine that circumstances are materially changed from those addressed in the approved plan. If a plan update is required due to a material change in circumstances, the plan update must address those portions of the plan that need to be modified due to change.

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

1. **Determination Criteria:**

In determining when a material change has occurred, the Board of Commissioners will consider the following:

- a. **Waste Generation:** Including the addition or loss of industrial waste generation, commercial waste generation, and/or residential generation. The trigger for this may vary, but 50,000 tons difference in material recovery or 50% change in income are considered good indicators a change is needed. Generation fees may be raised.
- b. Change in the availability of capacity, causing a shortfall prior to the next planned five-year update to the District plan.
- c. Strategies for waste reduction and/or recycling, limiting the ability of the District to honor the reduction goals itemized in the State Plan.
- d. The availability of revenues for plan implementation. (Increased expenses such as wages, leachate treatment, and equipment building improvements/repairs. Other thing that would affect revenue are low commodity prices, generation fees, etc.) The County General Fund helps supplement the District as well as portion of the Landfill closure assessments. Raising generation fees may be a part of the solution if revenue is an issue.
- e. Changes in the procedures to be followed for plan implementation (e.g. outlet for clean MRF, recycling capacity, reopen landfill, more revenue generated than anticipated).
- f. Changes in the timetable for implementation of programs and/or activities.
- g. Any other factor that the Board considers relevant.
- h. The Putnam County Commissioners serve as the Putnam County Solid Waste Management District Board of Directors. (Board of Directors may change, and in turn, the focus of District may also be radically change.)

2. **Monitoring Procedures:**

The Determination Criteria will be evaluated on the basis of information obtained through the District Policy Committee's annual review of the approved plan, and/or District staff's monitoring programs. The staff monitoring program includes the following:

- a. Quarterly analysis of District revenues.
- b. Analysis of information acquired by District staff for preparation of the District's Annual Report for Ohio EPA.
- c. Information acquired by District staff through follow-up investigations of citizen complaints which indicate the existence of deviations from or noncompliance with the District plan.
- d. Analysis of information voluntarily provided to the District staff by state or local officials and employees, or owners and operators of solid waste collection, disposal, transfer, or recycling operations, which indicate the existence of deviations from and/or noncompliance with the District's Plan.

The Policy Committee or the District's staff will immediately notify the Board of Commissioners of any reliable information that is likely to establish that a significant or substantial change from the circumstances addressed in the District's approved plan has occurred.

3. **Timetable for Making the "Material" Change Determination**

Within 10 days from receipt of notification from the District staff under paragraph two, above, the Board of Directors shall request the District staff to prepare a report which discusses the effects that the changed circumstances identified in the District's staff notice to the Board of Directors may have on the criteria listed in Section C1 of this chapter.

This District staff shall prepare the report and submit it to the Board of Directors within thirty days of the Board's request. Within ten days after the receipt of the District staff's report, the Board shall decide whether additional information is necessary for the Board to determine whether a material change has occurred. If the Board determines that additional information is required, the District staff shall revise its report to include such additional information and submit its final report within twenty days from the Board's request for additional information.

Within 60 days after the Board's receipt of the District staff's final report, the Board shall make a determination of whether the changed circumstances are material pursuant to the criteria listed in paragraph one, above. During that time, the Board may obtain such information from sources other than the District staff as the Board deems necessary and proper to making its determination of whether a material change has occurred.

4. Notification Procedure after Making Determination:

Upon the Board's determination that a material change has occurred, the Board shall notify the District Policy Committee, in writing, within 10 days of the Board's determination. The Board's notice shall request the District Policy Committee to prepare a draft amended solid waste plan, pursuant to ORC 3734.56(D), that amends the District plan to address the direct and indirect effects of any such material change in circumstances. The Board of Directors will also notify Ohio EPA of its determination.

APPENDIX B RECYCLING INFRASTRUCTURE INVENTORY

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

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

1. Curbside Recycling Services

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

ID #	Name of Curbside Service	Service Provider	County	How Service is Provided	Collection Frequency	Materials Collected ⁽¹⁾	Type of Collection	PAYT (Y/N)	Weight of Materials Collected from SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
NCSI	Ottawa Village	Werlor	Putnam	Contract	Weekly	Cardboard, Paper, Glass bottles and Jars, Plastics Bottles #1 - #2, scrap aluminum, beverage cans, steel cans	Bins	Y	DNR	Y
Total									0	

¹Paper includes: Newspaper, Other Paper, Office Paper, Junk Mail.
Source: SWMD

At the present time, the only village in the District with a non-subscription residential curbside recycling program is the county seat and most populous village, Ottawa. The village provides weekly residential curbside collection to single and multi-family dwellings (up to about 4 units) through a contract with a private waste collection and recycling firm. Presently the contractor is Werlor.

Ottawa Village is responsible for the implementation of the Ottawa Village curbside recycling program. The program is funded through the collection of taxes by residents.

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)
SC1	Glandorf Village	Putnam	Republic	Weekly	Cardboard, Paper, Glass bottles and Jars, Plastics Bottles #1-#2, scrap aluminum, beverage cans, steel cans	Bins	N	Recyclables delivered to SWMD drop-off	Y
Total								0	

¹Paper includes: Newspaper, Other Paper, Office Paper, Junk Mail.
Source: SWMD

The Village of Glandorf offers curbside recycling on a subscription basis as residents want. The Village of Glandorf's program is paid by residents who request the service on a quarterly basis. The residents pay the provider of services directly.

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)	Service will Continue Throughout Planning Period (Y/N)
FTU1	none								
Total								0	

¹Paper includes: Newspaper, Cardboard, Other Paper, Office Paper, Junk Mail.

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

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ⁽¹⁾	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTU1	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	Ottawa Village, 24 Hour by Fairgrounds	County	Putnam	County	24 hours / 7 days a week	Cardboard, Paper, Glass bottles and Jars, Plastics Bottles #1-#2, scrap aluminum, beverage cans, steel cans	Y		Y
FTR2	Nelson Manufacturing	County	Putnam	County	24 hours / 7 days a week	Cardboard, Paper, Plastics Bottles #1-#2, scrap aluminum, beverage cans, steel cans	Y		Y
Total								0	

¹Paper includes: Newspaper, Cardboard, Other Paper, Office Paper, Junk Mail.
²Data is not tracked for each drop off location.

All materials at the Ottawa Village fairground location are collected source separated. Glass is only collected at the Ottawa Village location. Materials collected at the Nelson Manufacturing location are collected source separated. Recyclables are collected by District staff and taken to the Putnam County Solid Waste District Recycling Center.

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

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ⁽¹⁾	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons) ²	Service will Continue Throughout Planning Period (Y/N)
PTR1	Columbus Grove / Pleasant Township	County	Putnam	County		Cardboard, Paper, Plastics Bottles #1-#2, scrap aluminum, beverage cans, steel cans	Y		N
PTR2	Continental Village / Monroe Township	County	Putnam	County		Cardboard, Paper, Plastics Bottles #1-#2, scrap aluminum, beverage cans, steel cans	Y		N
PTR3	Fort Jennings Village / Jennings Township	County	Putnam	County		Cardboard, Paper, Plastics Bottles #1-#2, scrap aluminum,	Y		N

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ⁽¹⁾	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons) ²	Service will Continue Throughout Planning Period (Y/N)
						beverage cans, steel cans			
PTR4	Kalida Village / Union Township	County	Putnam	County		Cardboard, Paper, Plastics Bottles #1-#2, scrap aluminum, beverage cans, steel cans	Y		N
PTR5	Leipsic / Liberty and Van Buren Townships	County	Putnam	County		Cardboard, Paper, Plastics Bottles #1-#2, scrap aluminum, beverage cans, steel cans	Y		N
PTR6	Ottoville Village / Monterey Township	County	Putnam	County		Cardboard, Paper, Plastics Bottles #1-#2, scrap aluminum, beverage cans, steel cans	Y		N
Total								0	

¹Paper includes: Newspaper, Cardboard, Other Paper, Office Paper, Junk Mail.

²Data is not tracked for each drop off location.

Materials collected are collected source separated. Recyclables are collected by District staff and taken to the Putnam County Solid Waste District Recycling Center.

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. Putnam County 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
Heartland Disposal	Putnam, Henry	N	X	X	X	X	X	X
H&S Refuse	Putnam	N	X					
Laubenthal Refuse	Putnam	N	X	X	X			
Meyer Refuse Co	Putnam	N	X	X				
M&M Hauling	Putnam	N	X					
Northwest Ohio Recycling	Putnam	N	X	X	X		X	X
Republic	Putnam	N	X	X	X	X	X	X
S&S Sanitation	Putnam	N	X	X	X			
Waste Management	Putnam	N	X	X	X		X	X
Werlor, Inc	Putnam	Y	X			X		

Source: Approved solid waste management Plan, Google, and Phone book.
Notes: Werlor began hauling residential recycling in 2020.

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
Village of Leipsic Composting Facility	Class IV	N	Putnam County	0	134	134
Village of Columbus Grove	Class IV	N	Putnam County	0	5,841	5,841
Ottawa Composting Facility	Class IV	N	Putnam County	0	1,662	1,662
Glandorf Composting Facility	Class IV	N	Putnam County	0	105	105
Total				0	7,742	7,742

Source: 2014, 2015, 2016, 2017 and 2018 data Ohio EPA Compost Facility Planning Analytical Report

There are four registered composting facilities in Putnam County.

Village of Leipsic – Accepts grass clippings, sticks and other yard waste from Village residents. Mulch is available for free to Village residents if self-load.

Village of Columbus Grove – Accepts grass clippings, sticks and other yard waste from Village residents. Mulch is available for free to Village residents if self-load. The Village also collects leaves in the fall.

Ottawa – Accepts grass clippings, sticks and other yard waste from Village residents. Mulch is available for free to Village residents if self-load or \$5 per truck-bed full if Village employees load it.

Glandorf – The Village collects leaves in the fall. No public access for drop-off of yard waste is permitted at the compost facility.

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	n/a	n/a	66	0
Total			66	5

Source: 2014, 2015, 2016, 2017 and 2018 data Ohio EPA Compost Facility Planning Analytical 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)
Putnam County Solid Waste District Recycling Center	Putnam	Ohio	MRF	862
Total				862

APPENDIX C POPULATION DATA

A. Reference Year Population

Table C-1 a: Reference Year Population Adjustments

	Putnam County
Before Adjustment	33,780
Additions	
Subtractions	
After Adjustment	33,780

Table C-1 b: Total Reference Year Population

Unadjusted Population	Adjusted Population
33,780	33,780

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

B. Population Projections

Table C-2: Population Projections

Year	Putnam	Total District Population
2018	33,780	33,780
2019	33,861	33,861
2020	33,851	33,851
2021	33,841	33,841
2022	33,831	33,831
2023	33,820	33,820
2024	33,810	33,810
2025	33,800	33,800
2026	33,790	33,790
2027	33,780	33,780
2028	33,770	33,770
2029	33,760	33,760
2030	33,749	33,749
2031	33,739	33,739
2032	33,729	33,729
2033	33,719	33,719
2034	33,709	33,709
2035	33,699	33,699
2036	33,689	33,689

Source:

2018 Population and annual percent change taken from Office of Research, Ohio Development Services Agency, "2018 Population Estimates by County, City, Villages and Townships", May 2019.

2019 Population taken from US Census Bureau QuickFacts: Putnam County, Ohio, www.census.gov/quickfacts/putnamcountyohio

Sample Calculations:

2020 population = 2019 population * (0.003/10) + 2019 population

33,851 = 33,861 * (0.003/10) + 33,861

To obtain the reference year population several sources were researched. Office of Research, Ohio Development Services Agency estimated the 2018 population and the 2019 population estimate at 33,780 and 33,861, respectively. Population estimates are produced by the U.S. Census Bureau and reflect population reported for the said year and adjustments to prior years. As reported from the methodology for the US population estimates:

"Populations can change in three ways: people may be born (births), they may die (deaths), or they may move (domestic and international migration). The U.S. Census Bureau's Population Estimates Program measures this change and adds it to the last decennial census to produce updated population estimates every year.

We estimate the resident population for each year since the most recent decennial census by using measures of population change.

With each annual release of population estimates, the Population Estimates Program revises and updates the entire time series of estimates from April 1, 2010 to July 1 of the current year, which we refer to as the vintage year. We use the term "vintage" to denote an entire time series created with a consistent population starting point and methodology. The release of a new vintage of estimates supersedes any previous series and incorporates the most up-to-date input data and methodological improvements."⁶

Since the 2019 population is already estimated, the District is basing population estimates for 2020 and through the planning period from the 2019 population of 33,861.

Ohio Development Services Agency calculated the annualized percent change from 2010 (census data) to 2019. Each year the County is declining population at rate of 0.20%. Beginning in year 2020 the annualized population rate of change was applied to determine estimated population through the planning period. From 2022 (year one of the planning period) to 2036 (year fifteen of the planning period), the County is projecting population decline approximately 930 persons.

⁶ United States Census Bureau. Methodology For The United States Population Estimates: Vintage 2019 Nation, States, Counties, and Puerto Rico – April 1, 2010 to July 1, 2019.

APPENDIX D DISPOSAL DATA

A. Reference Year Waste Disposed

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

Facility Name	Location		Waste Accepted from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Celina Sanitary Landfill	Mercer	OH	19	0	2	21
County Environmental of Wyandot	Wyandot	OH	806	255	51	1,112
Wood County Landfill	Wood	OH	191	0	6	198
Evergreen Recycling & Disposal	Wood	OH	18*	8	2	28
Hancock County Sanitary Landfill	Hancock	OH	3,664	468	1,396	5,529
Defiance County Sanitary Landfill	Defiance	OH	3,693	364	899	4,955
Crawford County Sanitary Landfill	Crawford	OH	0	0	2	2
National Serv All		IN	0	1,060	0	1,060
Treatment Facilities		IN	0	419	0	419
Total			8,391	2,574	2,358	13,323

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, spent non-toxic foundry sand and material from mining, construction, or demolition operations.

Source:

Ohio EPA. "2018 Ohio Facility Data Report Tables". October 29, 2019.

Ohio EPA. "Annual District Review Form for 2018." December 16, 2019.

*Includes 18 tons of asbestos waste disposed at Evergreen – reported by Ohio EPA.

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, spent non-toxic foundry sand and material from mining, construction, or demolition operations.

Public, private haulers or self-haul provide waste collection service in the SWMD. Waste flows to landfills either by direct haul or through a transfer facility. Direct hauled waste is disposed in in-state and out-of-state landfill facilities.

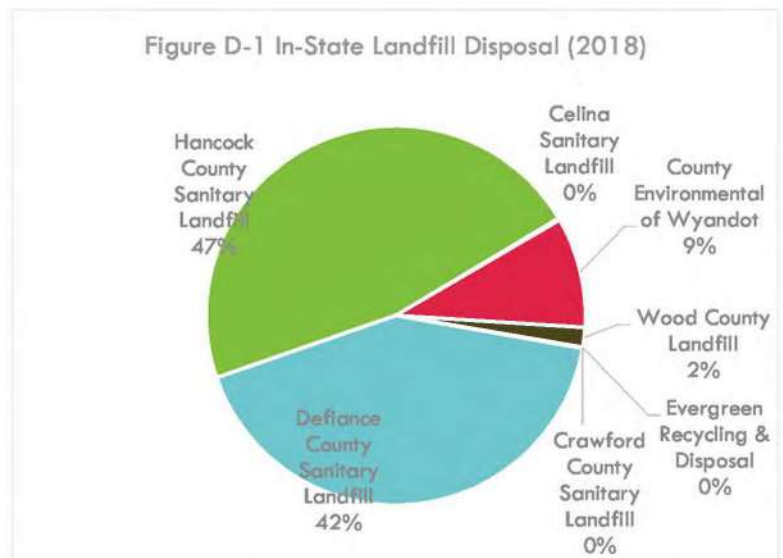


Table D-1a depicts the landfills used for waste disposal in the reference year waste. As depicted in Figure D-1, Hancock County and Defiance County received almost equal shares of the SWMD's waste disposed in 2018.

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

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

Ohio EPA. "2018 Ohio Facility Data Report Tables". October 29, 2019.

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
8,391	2,574	2,358	13,323

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 Transferred¹

Facility Name	Location		Waste Received from the SWMD			
	County	State	Residential/Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Waste Management of Ohio - Lima	Allen	OH	1,241	3	0	1,244
Total			1,241	3	0	1,244

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

Source:

Ohio EPA. "2018 Ohio Facility Data Report Tables". October 29, 2019.

Ohio EPA. "Annual District Review Form for 2018." December 16, 2019.

Transfer facilities are conveniently located where solid waste, delivered by collection companies and residents, is consolidated, temporarily stored and loaded into semi-trailers for transport. 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, the Waste Management of Ohio Lima Transfer facility identified using the out of state disposal facilities.

Table D-3 Waste Incinerated/Burned for Energy Recovery in Reference Year¹

Facility Name	Facility Type	Location		Waste Accepted from the SWMD			
		County	State	Residential/Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
None.							0
Total				0	0	0	0

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).
Ohio EPA. "2018 Ohio Facility Data Report Tables". October 29, 2019.

No waste to energy facilities were used as a management method.

Table D-4 Incinerated and Excluded Waste Percentages of Total Waste Disposed

	Residential/Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)	% of Total Waste Disposed
Direct Hauled	8,391	2,574	2,358	13,323	91%
Transferred	1,241	3	0	1,244	9%
Incinerated	0	0	0	0	0%
Total	9,632	2,577	2,358	14,567	100%

Percent of Total	66%	18%	16%	100%
------------------	-----	-----	-----	------

Source(s) of Information: Ohio EPA. "Annual District Review Form for 2018." December 16, 2019.

Sample Calculations:

% of Total Waste Disposed = Total Direct Hauled / Total Disposed * 100%

= 8,391 / 13,323 * 100%

= 91% 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 SWMD's are not required to account for excluded waste in the solid waste management plan. For Putnam County SWMD, excluded waste accounts for 16% of total disposal in 2018, and therefore is included.

Approximately 91% 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. About 9% of 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

Year	Population	Residential/ Commercial Solid Waste		Industrial Solid Waste	Excluded Waste	Total Waste
		Rate (ppd)	Weight	Weight	Weight	Weight
			(tons)	(tons) ²	(tons) ³	(tons) ⁴
2014	34,171	1.37	8,542	1,042	2,425	12,009
2015	34,499	1.23	7,755	1,147	1,982	10,884
2016	34,499	1.30	8,160	1,063	1,230	10,453
2017	34,499	1.47	9,271	1,734	1,848	12,853
2018	33,780	1.56	9,632	2,577	2,358	14,567

Source:

Ohio EPA ADR Review Forms for 2014, 2015, 2016, 2017 and 2018 for population and waste disposal data. Population data for 2018 was taken from Table C-1.

Sample Calculation:

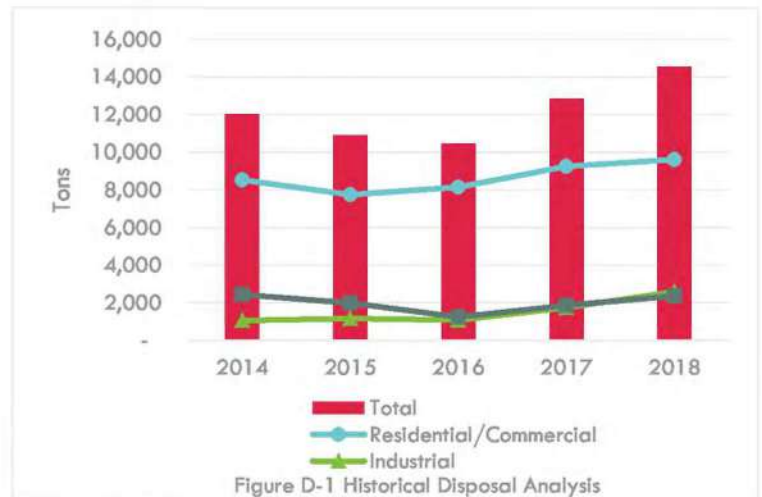
Residential/Commercial + Industrial + Excluded = Total Waste

8,542 + 1,042 + 2,425 = 12,009 tons disposed in 2014

$((\text{Residential/Commercial tons} * 2,000 \text{ pounds per ton}) / 365 \text{ days}) / \text{Population} = \text{Residential/Commercial disposal rate}$

$(8,542 \text{ tons} * 2,000 \text{ pounds per ton}) / 365 \text{ days} / 34,171 \text{ persons} = 1.37 \text{ pound per person per day}$

The County was following a declining trend until year 2017 when the disposal increased 2,400 tons, a 23% annual increase, as shown in Figure D-1. Another large increase was also recorded in year 2018 at 1,714 tons, a 13% annual increase. These two large increases are abnormally high for Putnam County's total waste disposal. The analysis below attempts to separate the waste disposal sectors to determine if there is any correlation to the increasing trend of waste disposal in the County.



1. Residential/Commercial

Residential/commercial waste disposal dipped slightly in 2015 then trends a relatively slow increase in waste disposal from 2016 to 2018. The County documented a large increase of 14% in 2017. The County researched historical waste disposal and discovered the waste disposed in 2014, 2015 and 2016 was lower for the County. These three years appear to be an anomaly.

Based on 2018 waste disposal the resident throws away on average about 1.30 pounds per person per day.

The approved 2016 Plan estimated waste disposal to be 11,053 tons. Compared to actual disposal the estimation is about 1,400 tons more. Actual 2018 disposal is 9,632 tons. The 2016 Plan estimated an increase in waste disposal through the planning period when actual waste disposal tracked relatively flat.

2. Industrial Waste

Industrial waste disposal jumped a steep 63% increase in 2017 which was followed by a 49% increase in 2018. Researching manufacturing trends, the number of establishments has remained about

the same, but employment has grown almost 30% between 2011 and 2017⁷. The County is not aware of manufacturing changes to increase the disposal. There has been some re-investment and/or expansion of a few manufacturers. Waste disposal may have increased with the construction and or renovations. It is also possible the manufacturing production waste may be growing.

The County noticed a trend of increased industrial waste being sent to out-of-state disposal facilities. The chart below documents the increasing trend.

Year	Industrial Out of State Waste Disposal
2014	10
2015	0
2016	376
2017	779
2018	1,479

Since generation fees are the predominant funding source, Putnam County plans to monitor this trend. Generation fees are levied on waste generated within its borders regardless of where in Ohio the waste is disposed. Fees are not received on waste disposal outside the state of Ohio.

C. Disposal Projections

Projecting waste disposal for the planning period is complex. The County explored the following three methodologies.

Methodology #1:

- Residential/Commercial projections based on 2014 to 2018 average annual per capita disposal calculated at 1.39 pounds per person per day.

The 5-year average includes slightly lower than normal disposal tonnages documented in years 2014, 2015 and 2016. This skews the data calculating a lower annual 1.39 per capita rate. Additionally, population projections are declining. Using this method for projections demonstrates a decreasing waste disposal each year over the planning period that is not historically exhibited.

- Industrial projections based on 2014 to 2018 average annual percent change calculated at 28.62%.

The 5-year average inflates the projection through the planning period to 293,138 tons of waste disposal. This is beyond what is expected for the manufacturing industry in the County.

- Excluded projections based on 2014 to 2018 average annual percent change calculated at 5.41%.

The 5-year average inflates the projection through the planning period to 6,093 tons of waste disposal. This is beyond historical disposal and what is expected in the County.

Methodology #2

- Residential/Commercial projections based on 2014 to 2018 average annual percent change calculated at 3.38%.

The 5-year average annual percentage applied through the planning period inflates the projections to

⁷ Ohio Development Services Agency. Ohio County Indicators, Table 22: Manufacturing Employment, 2011-2017. August 2019.

17,516 tons of waste in year 2036. These tonnages are beyond disposal tonnages exhibited historically. Historically (2012 to 2018) waste disposal fluctuates between 8,000 and 10,000 tons.

- Industrial projections based on 2014 to 2018 average annual percent change calculated at 28.62%.

The 5-year average inflates the projection through the planning period to 293,138 tons of waste disposal. This is beyond what is expected for the manufacturing industry in the County.

- Excluded projections based on 2014 to 2018 average annual percent change calculated at 5.41%.

The 5-year average inflates the projection through the planning period to 6,093 tons of waste disposal. This is beyond historical disposal and what is expected in the County.

Methodology #3

- Residential/Commercial projections based on 2018 annual per capita disposal calculated at 1.56 pounds per person per day.

The per capita rate of 1.56 pounds per person per day is more representative of the typical per person disposal historically exhibited. Applying the 1.56 pounds per person per day to the declining population over the planning period averages a waste disposal of 9,500 tons which falls between the 8,000- and 10,000-ton fluctuation exhibited for the County.

- Industrial projections based on 2014 to 2018 average annual percent change calculated at 28.62%.

Historical data shows it is not unusual for industrial sector disposal to rise and fall. Of recent years some growth has occurred which could lead to the industrial rise. If this is due to construction projects, then the waste disposal is expected to fall. For planning purposes, the County projected industrial waste disposal flat holding at 2018 disposal tonnages. This holds industrial waste between historical fluctuations. When 2019, disposal tonnage data is received adjustments may be needed to tweak this projection.

- Excluded projections based on 2014 to 2018 average annual percent change calculated at 5.41%.

Historically almost 100% of excluded waste is categorized as construction and demolition waste. The County documented a peak in 2012 over 5,000 tons and then averaged about 2,150 tons for the next 6-years. County redevelopment or major construction projects are not anticipated for the next 5-years. The County feels projecting a constant disposal for this stream at the 2018 disposal tonnage is the better projection. This method does not plan for the rise and fall but does provide a constant average for planning purposes.

Methodology #3 was selected for determining waste disposal projections for the planning period.

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) Weight (tons)
	Weight	Weight	Weight	Weight	
	(tons)	(tons)	(tons)	(tons)	
2018	9,632	2,577	2,358	14,567	1,244
2019	10,739	1,033	3,977	15,749	1,345
2020	9,635	1,033	1,969	12,637	1,079
2021	9,616	1,033	1,969	12,618	1,078
2022	9,597	1,033	1,969	12,599	1,076

Year	Residential/ Commercial Solid Waste	Industrial Solid Waste	Excluded Waste	Total Waste
	Weight	Weight	Weight	Weight
	(tons)	(tons)	(tons)	(tons)
2023	9,578	1,033	1,969	12,579
2024	9,559	1,033	1,969	12,560
2025	9,539	1,033	1,969	12,541
2026	9,520	1,033	1,969	12,522
2027	9,501	1,033	1,969	12,503
2028	9,482	1,033	1,969	12,484
2029	9,463	1,033	1,969	12,465
2030	9,444	1,033	1,969	12,446
2031	9,425	1,033	1,969	12,427
2032	9,407	1,033	1,969	12,408
2033	9,388	1,033	1,969	12,390
2034	9,369	1,033	1,969	12,371
2035	9,350	1,033	1,969	12,352
2036	9,332	1,033	1,969	12,333

Waste Transferred (as part of Total Disposal)
Weight
(tons)
1,074
1,073
1,071
1,070
1,068
1,066
1,065
1,063
1,061
1,060
1,058
1,057
1,055
1,053

Source:

Ohio EPA ADR review for 2018.

Sample Calculation: Residential/Commercial Solid Waste = $(365 * \text{population} * 1.56 \text{ lbs/person/day}) / 2000 \text{ pounds/ton}$

Industrial Solid Waste = hold constant

Excluded Solid Waste = hold constant

Total Waste = Residential/Commercial Solid Waste + Industrial Solid Waste

Waste Transferred = $9\% * \text{Total Waste}$

APPENDIX E RESIDENTIAL/COMMERCIAL RECOVERY DATA

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	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	Used Motor Oil	Scrap Tires	
42			11			9	27	58	1	1		1				7	49	
44																		
45								72	15		120	3						
48																		
49																		
51									1									
52																		
53																		
54																		
55																		
56																		
61								17	3									
62																		
71			1															
72																		
81						10	8											
92																		
Other:																		
Unadjusted Total	0	0	12	0	0	19	36	147	20	1	120	4	0	0	0	7	49	415
Adjustments																	49	-49
Adjusted Total	0	0	12	0	0	19	36	147	20	1	120	4	0	0	0	7	0	366

Source(s): District surveys conducted in 2019 for 2018 data.
 Sample Calculation:
 Unadjusted Total – Adjustments = Adjusted Total

Table E-1 is reserved for commercial data obtained from Putnam County survey efforts. Data was aggregated from 17 businesses that responded to the survey, across 6 industries categorized by North American Industry Classification System (NAICS) code. Scrap tire tonnage was adjusted for and excluded from the final adjusted total because the tonnage was also reported to the Ohio EPA in a Scrap Tire specific report.

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																	
All Shred Services									43								
Scrap Yards																	
None																	
Brokers																	
None																	
Processors/ MRF's																	
Dayton Glass Plant					171												
Northwest Ohio Recycling			5			1,663	94										
Enviro Tire Recycling																26	
R & R Tire Disposal																324	
Unadjusted Totals	0	0	5	0	171	1,663	94	0	43	0	0	0	0	0	0	350	2,326
Adjustments					171											350	-521
Adjusted Totals	0	0	5	0	0	1,663	94	0	43	0	0	0	0	0	0	0	1,805

Source(s): Ohio EPA. "2018 Material Recovery Facility and Commercial Recycling Data." 2019.
 District commercial surveys conducted in 2019 for 2018 data.

Quantities reported in Table E-2 were obtained from the district's commercial surveys and Ohio EPA's reports on processors. Processors capture recyclables and prepare them so they are ready to be recycled. These types of operations typically include buybacks, scrap yards, brokers, and processors and MRFs. Adjustments exclude double counting and non-creditable materials such as construction and demolition debris and vehicle salvage operations. Adjustments made here were to exclude scrap tires which were reported in a separate Ohio EPA report and glass which was also reported in the County's drop-off data. The district operates a small single stream MRF, the Putnam County Solid Waste District Recycling Center. The center's material comes directly from the material dropped off at the facility and therefore the tonnage is reported later in Table E-4.

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		24		367	2	0						10	
Dollar General Corporation				104	1								
United States Postal Service		1		2	35								
Unadjusted Total	0	25	0	473	38	0	0	0	0	0	0	10	546
Adjustments													0
Adjusted Total	0	25	0	473	38	0	0	0	0	0	0	10	546

Sources(s): Ohio EPA, "2018 Material Recovery Facility and Commercial Recycling Data," 2019.

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

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	Yard Waste	Mixed Metals	Household Goods	Unadjusted Total	Adjustments	Adjusted Total
Curbside Recycling Services																						0		0
Putnam County Solid Waste District Recycling Center								171				277	256	117					7,742	40		862		862
Composting Facilities																						7,742		7,742
Ohio EPA Food Hauler/Grocer Data								66														66		66
Ohio EPA Scrap Tire Data					399																	399		399
Recycle Day	3	2	1	2																		9		9
Unadjusted Total	3	2	1	2	399	0	0	66	171	0	0	277	256	117	0	0	0	0	7,742	40	0	9,078	0	9,078
Adjustments																								
Adjusted Total	3	2	1	2	399	0	0	66	171	0	0	277	256	117	0	0	0	0	7,742	40	0	9,078	0	9,078

Source(s): Ohio EPA, District recorded program data.

Other sources and/or programs for diverting waste are included in Table E-4. The data from the Putnam County Solid Waste District Recycling Center represents all of the county's drop-off material tonnage. Glass previously excluded from Table E-2 is represented here under the County's Recycling Center data. The composting facilities data is from the Ohio EPA's report, Hauler / Grocer data is recorded from Ohio EPA's Compost Facility Reports. Scrap tires collected were recorded from the Ohio EPA's Scrap Tire reports. Recycle Day data is from the district's annual household clean-up event.

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

Material	Quantity (tons)
Appliances/ "White Goods"	3
Household Hazardous Waste	2
Used Motor Oil	8
Electronics	2
Scrap Tires	399
Dry Cell Batteries	0
Lead-Acid Batteries	17
Food	66
Glass	171
Ferrous Metals	1,682
Non-Ferrous Metals	130
Corrugated Cardboard	898
All Other Paper	357
Plastics	142
Textiles	120
Wood	4
Rubber	0
Commingled Recyclables (Mixed)	0
Yard Waste	7,742
Other (Aggregated)	50
Total	11,795

The District diverted 11,795 tons of material from the residential/commercial sector. Table E-5 reports the quantities of materials diverted. Yard waste and ferrous metal are the two largest material categories recycled for the reference year.

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

Table E-6 Quantities Recovered by Program/Source

Program/Source of Residential/Commercial Recycling Data	Quantities (Tons)
Commercial Survey	366
Data from Other Recycling Facilities	1,805
Ohio EPA Commercial Retail Data	546
Curbside Recycling Services	0
Putnam County Solid Waste District Recycling Center	862
Composting Facilities	7,742
Other Food and Yard Waste Management Activities	66
Ohio EPA Scrap Tire Data	399
Recycle Day	9
Total	11,794

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

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

B. Historical Recovery

The data analysis in Tables E-7 through E-7a6 show residential and commercial programmatic recycling data from 2014 to 2018. Putnam County diverts 9,899 tons of material per year, or on average 1.58 pounds per person per day, after adjusting for outlier data from 2014.⁸

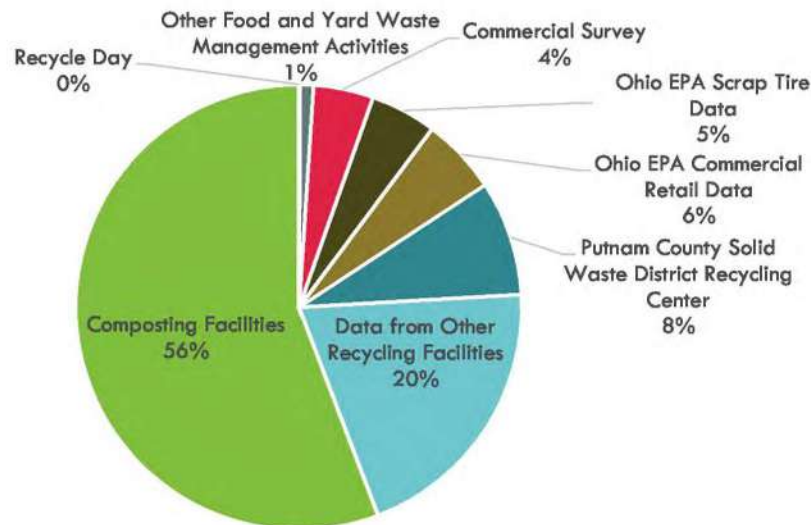


Figure E-1 Average Recycling by Source 2014-2018

Source(s): Tables E-7a6

Adjustments: Outlier data from 2014 'Data from Other Recycling Facilities' was removed from the averages.

By weight, two programs made up the majority of the recycling (see Figure E-1), composting facilities (56%) and data from buybacks, scrap yards, broker and processors / MRFs (20%).

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	Putnam County Solid Waste District Recycling Center	Composting Facilities	Other Food and Yard Waste Management Activities	Ohio EPA Scrap Tire Data	Recycle Day	Totals
2014	519	42,502	514	0	709	6,222	178	434	0	51,079
2015	623	2,859	537	0	817	4,456	109	375	14	9,791
2016	225	1,410	539	0	872	4,226	61	697	6	8,036
2017	423	1,395	607	0	868	4,957	66	471	7	8,795
2018	366	1,805	546	0	862	7,742	66	399	9	11,795

Year 2014 total recycling is roughly 80% higher than subsequent year totals. In 2014, one recycler reported a large quantity of ferrous metal data. This data is considered an outlier and was excluded from the historical recovery analysis in tables E-7a1 through E-7a6 (approximately 40,000 tons, of data from 2014).

⁸ In 2014, one recycling company reported 40,000 tons of metals diverted, categorized under the 'Data from Other Recycling Facilities'. The company did not appear any surveys from subsequent years. The unadjusted average tons is nearly twice that of the adjusted average.

Table E-7a1 Annual Percentage Change in Tons Recovered

2014										
2015	20%	14%	4%	-	15%	-28%	-39%	-14%	-	-12%
2016	-64%	-51%	0%	-	7%	-5%	-44%	86%	-55%	-18%
2017	88%	-1%	13%	-	0%	17%	8%	-32%	14%	9%
2018	-13%	29%	-10%	-	-1%	56%	0%	-15%	25%	34%

Table E-7a2 Average Percentage Change in Tons Recovered

8%	-2%	2%	-	5%	10%	-19%	6%	-4%	3%
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Table E-7a3 Annual Change in Tons Recovered

2014										
2015	104	-357	23	0	108	-1,767	-69	-59	14	-1,288
2016	-398	-1,449	1	0	55	-229	-48	321	-8	-1,755
2017	198	-15	69	0	-4	731	5	-226	1	759
2018	-57	410	-61	0	-6	2,785	0	-72	2	2,999

Table E-7a4 Annual Per Capita Recovery Rate (pounds/person/day)

Population											
34,171	2014	0.08	0.40	0.08	0.00	0.11	1.00	0.03	0.07	0.00	1.78
34,499	2015	0.10	0.45	0.09	0.00	0.13	0.71	0.02	0.06	0.00	1.56
34,499	2016	0.04	0.22	0.09	0.00	0.14	0.67	0.01	0.11	0.00	1.28
34,499	2017	0.07	0.22	0.10	0.00	0.14	0.79	0.01	0.07	0.00	1.40
33,780	2018	0.06	0.29	0.09	0.00	0.14	1.26	0.01	0.06	0.00	1.91

Table E-7a5 Average Per Capita Recovery Rate

0.07	0.32	0.09	0.00	0.13	0.88	0.02	0.08	0.00	1.58
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Table E-7a6 Average Tons of Material Recovered

431	1,994	549	0	826	5,521	96	475	7	9,899
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The quantities in each program / service and third-party source fluctuate yearly.

Commercial Survey data fluctuates yearly. To capture this data the District surveys commercial sector. The survey is voluntary, and data fluctuates based on survey responses. As seen, responses are not consistent from year to year. The trend calculated in Tables E-7a1 through E-7a6 shows an increase of 8% over the 5-years with an average of 431 tons reported.

Data from Other Recycling Facilities demonstrates a 5-year average percent decrease. Data from other recycling facilities aggregates data from several sources. Buybacks are facilities that buy post-consumer secondary materials which can be brokers and processors. Processors capture the recyclables and process them to get them ready to be recycled. Scrap Yards purchase or receive scrap metal for the purpose of sorting, grading and shipping metals for direct or indirect melting into new products.

The District is served by several scrap yards in Putnam County. In addition to the scrap yards located in the District, residents, commercial businesses and industries are served by out-of-district recyclers. In many instances data collected from buybacks, scrap yards and processors can be challenging to track the source and to exclude non-creditable materials. To capture this data the District surveys these businesses. The survey is voluntary, and data fluctuates based on survey responses. The processors listed in Table E-2 are scrap tire transporters that report

directly to Ohio EPA.

Material recovery facilities (MRFs) included in this category report data directly to Ohio EPA.

The trend calculated in Tables E-7a1 through E-7a6 shows a decrease of 2% over the 5-years with an average of 1,994 tons reported.

Ohio EPA Commercial Retail Data is data collected by Ohio EPA from big box store commercial retailers. In 2017, reported volumes increased higher than the trend as a result of businesses reporting additional volumes of diversion. Also, in 2017, Ohio EPA added another retailer to the database. The 5-year average is 549 tons reported.

Curbside Recycling Services is data reported from curbside recycling programs. The two villages with curbside recycling programs are responsible for their services. When surveyed the villages did not provide recycling data.

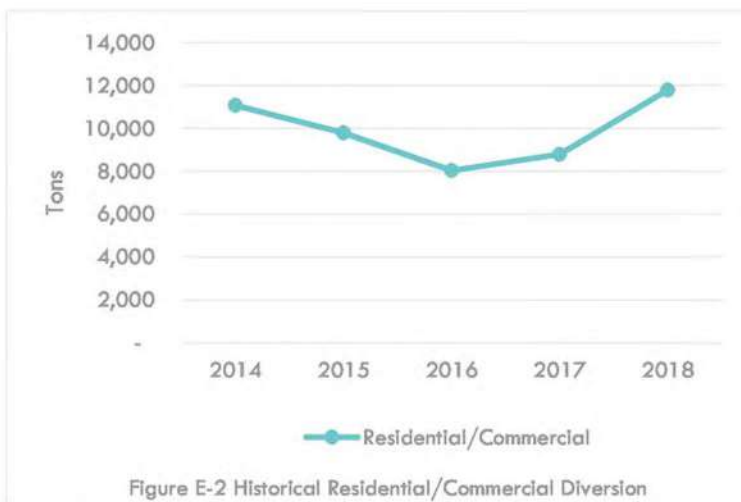
Putnam County Solid Waste District Recycling Center could either be included in Table E-7 or Table E-2. Because it represents diversion of the District's programs, the District felt it better to include in Table E-7 for analysis. The trend calculated in Tables E-7a1 through E-7a6 shows an increase of 5% over the 5-years with an average of 826 tons reported.

Composting Facilities is data reported to Ohio EPA from registered compost facilities. Recovery is dependent on uncontrollable factors and fluctuates inconsistently from year to year. Weather, storms, etc. in certain years may lead to more yard waste than in other years. Years 2014 and 2018 recorded higher diversion tons than in other years. Overall, on average a little under a pound per person per day of yard waste (0.88 lbs) is diverted in the county.

Ohio EPA Food Hauler/Grocer data recorded over 40% decrease from 2014 to 2015 and then again from 2015 to 2016 before leveling.

Ohio EPA Scrap Tire Data is data reported to Ohio EPA from registered scrap tire transporters. On average 475 tons of tires are collected annually. Years with low volumes of tires diverted are generally followed by higher diversion years the next.

Recycle Day averages 7 tons annually diverted.



Historical residential/commercial diversion shows a slight dip in 2016 (2014 data adjusted for the outlier data). Limitations to collecting data (voluntary reporting) and fluctuations from uncontrollable factors impact diversion data. Thus, yearly fluctuations are expected.

Figure E-1 shows sources of data and their weight in contributing to the diversion reporting. Data limitations and fluctuations in Composting Facilities and Data from Other Facilities demonstrate greater impacts in total recycling since they are the main contributing data sources. As shown in Figure E-2, less composting was reported as well as a reported decrease from the scrap yards and buybacks contributed to the dip recorded in 2016.

Source(s): Tables E-7
Adjustments: Outlier data from 2014 'Data from Other Recycling Facilities' was removed from the averages.

C. Residential/Commercial Recovery Projections

There are many factors that come into play for when considering projections for residential/commercial recovery in this planning period. Considerations regarding the District’s projections include:

Evolving Ton

The “evolving ton” is a term being used to describe the shift in the overall composition of the recyclable material stream over the past 20 years. One of the trends responsible for this evolution has been the light weighting of packaging, especially through the use of materials like plastics and aluminum that have displaced materials like glass and steel. More recently, even rigid plastic packaging formats have started to be displaced by rapidly growing formats in flexible packaging. Plastics are not alone in driving the waste shift: electronic media have played a major role in changing the composition of our recyclable stream by reducing the quantity of newspaper and office paper. In addition, there has been an increase in corrugated cardboard from the residential sector caused by an increase in online purchases that is shipped in boxes (“Amazon Effect”).

It’s also critical to understand that while more types of plastics are getting collected, complexity has increased even within the resin types the recycling system has traditionally handled. In response to growing pressure to recycle more, many companies are shifting to “recyclable” materials, often defining them as those accepted in community recycling programs. One of the best examples of this trend has been Polyethylene Terephthalate (PET) replacing Polyvinyl Chloride (PVC) or Polystyrene (PS) thermoforms and heavier jar and container material like glass. The unforeseen consequence of this well-intentioned transition is the recent diversification of PET in the recycling stream, a phenomenon that has lowered the yield of usable materials (the PET used in plastic clamshell packages (ex: Strawberry container), blister packs (ex: over-the-counter medicine) and ketchup bottles is not the same as that used in a soda bottle).

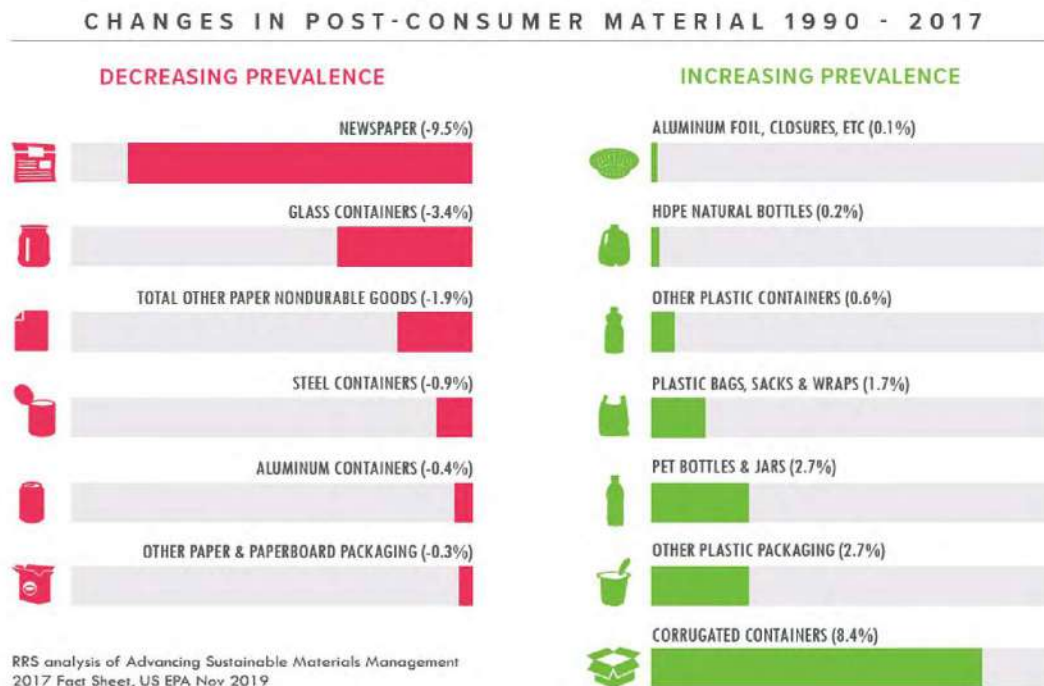
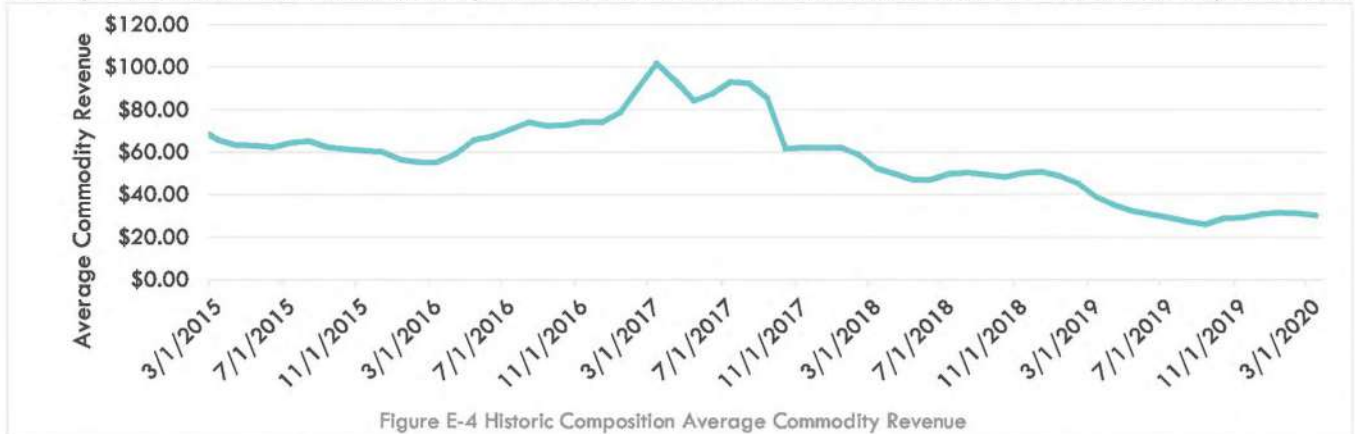


Figure E-3 The Evolving Ton

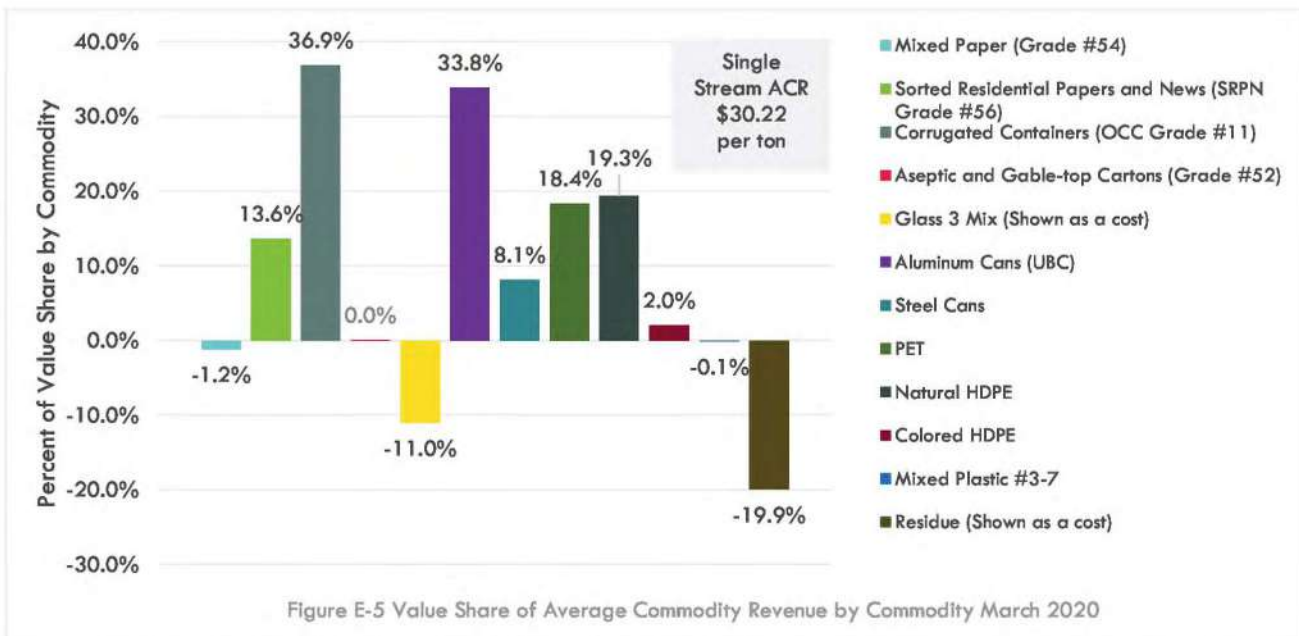
Recycling Market Trends

The orderly supply chain for the previously healthy recycling commodities market has experienced an overall price decline, as indicated in the Average Commodity Revenue (ACR) shown in Figure E-4. Freight and shipping costs have spiked as new markets are developed that do not have the advantages related to the Chinese export market



(demand, infrastructure, freight backhaul). In March 2020, the ACR was \$30.22 per ton, less than half of what it was five years ago at \$65.64 per ton in March of 2015. Each commodity plays a role in setting the ACR as shown in Figure E-5.

The overriding story for recycled commodity markets has been the complete imposition of Chinese inspections and enforcement initiatives under the branded “National Sword” and “Blue Sky 2018” campaigns, and the Chinese World Trade Organization (WTO) ban on unsorted mixed recovered materials and all “human consumed” packaging and post-consumer plastic grades. Heavy rejections of all imported materials, especially bales from MRFs, along with lower import quotas given to Chinese mills, have even curtailed old corrugated container and aluminum scrap shipments to China. The Chinese ban has resulted in an oversupply of paper that has caused prices to plummet for all bulk paper grades by over 50 percent through March 2018, compared to 2017 prices. Additionally, the July 2018-announced WTO ban forced sellers to scramble for new homes. These conditions especially target and limit markets for post-consumer MRF materials.



Further, the United States, through current administration and court actions, has imposed a series of tariffs and

trade sanctions affecting newsprint, aluminum, and steel. In addition, regulations that limit truck driver productivity has created shipping constraints that impact the supply chain. Together these conditions are increasing costs and availability for reliable freight to move recovered materials. The short-term effect of these conditions is to price marginal markets out of both domestic and export opportunities.

These factors directly affect pricing for North American recovered materials and have caused unexpected market movement and profit changes. For instance, recovered paper producer costs have sharply risen with the need for more sorting and the higher freight; while, conversely, metal prices have spiked to record highs for all domestic scrap grades. The recycling commodities market is in a very volatile state. Dramatic price changes are the norm in this fractal space right now, and price conditions can quickly change. World demand and the world economy are still growing for consumer goods and recovered paper, yet prices are languishing under the above pressures.

COVID 19 Pandemic

The COVID-19 pandemic has had numerous impacts on municipal solid waste systems. Changes in consumption and waste disposal patterns and behaviors during the lockdown period have produced new challenges for solid waste management and diversion activities. SWANA's Executive Director, David Biderman, reported residential waste increased by 20-25% with some local governments suspending curbside programs (recycling and bulky) due to trash volume collection needs. As of September 2020, about half of the local governments restored their programs as resident volume decreased. Mr. Biderman also reported commercial waste went down 20-25%. The shutdown of businesses and stores eliminated the major source of recovered paper. Paper mills in US need material and the value of corrugated cardboard (OCC) doubled and peaked at about \$110 per ton⁹.

The fluctuations and changes over the past 3 years (2018, 2019 and 2020) in waste management add challenges to projecting future generation, disposal and recovery. The final full year data is not yet available to show the extent of the COVID-19 pandemic impacts to waste and recycling. The percentage fluctuation between commercial and residential waste is roughly equal presuming impacts may be neutralized. Which may be case for the waste landfilled, but reports from mills and material recovery facilities ascertain limited supply and a demand need.

Projections

Commercial Survey – Reference year and 2019 data are reported quantities. To project change in recovery between 2019 and the first year of the planning period (2022), the average per capita recovery rate was applied. Through the first six-years of the planning period (2022-2027) recovery projections are held constant at the projected 424 tons through the planning period. The data collection program to obtain commercial data is mature.

Data from Other Recycling Facilities - Reference year and 2019 data are reported quantities. To project change in recovery between 2019 and the first year of the planning period (2022), was held at the fifth-year (2014 through 2018) average. Through the planning period (2022-2036) recovery projections are held constant at 1,994 tons through the planning period. Third party/non-program sources are dependent on factors out of the District's control.

Ohio EPA Commercial Retail Data - Reference year and 2019 data are reported quantities. To project change in recovery between the 2019 and the first year of the planning period (2022), the average percentage change in tons recovered was applied. Beginning in the first year of the planning period (2022), recovery projections are held constant with the expectation that COVID-19 impacts will keep recovery flat in the commercial sector.

Curbside Recycling Services – No projections applied.

⁹ Biderman, David. Ohio Buckeye Chapter Annual Meeting, September 16, 2020, 10am ET, Virtual Zoom Meeting. "Impact of COVID-19 on the Waste Industry".

Putnam County Solid Waste District Recycling Center - The District saw an increase when the drop-offs from Fort Jennings and Ottoville processing moved to the District's Recycling Center. Then the trend flattened. Reference year and 2019 data are reported quantities. To project change in recovery between the 2019 and the first year of the planning period (2022), the District excluded 2014 and 2015 data. An average ton of material recovered was determined from years 2016-2019. This average of 826 tons aligns with historical tonnages processed at the District Recycling. In 2020 with program shutdown and virtual online schools' tonnages processed declined to 618 tons. Predicting volumes will take time to come back projections are held flat at 2020 volumes and then increase in 2025 to 826 tons.

If the District receives an Ohio EPA Community Development Grant in 2022 modifications will be made to re-locate the Ottawa residential drop-off on the other side of the property where the District Recycling Center building is located. With the expected operation improvements at the District Recycling Center the District is anticipating adding school paper drop-off service and returning satellite sites to the seven drop-off locations that were removed in 2020. Adding these will increase the volume of material greater than projected in Table E-8. The table below is the expected growth that would be seen if a grant is received, and these changes are implemented. The increased tonnages are not included in Table E-8 because grants are competitive and thus uncertain.

	2023	2024	2025	2026	2027	2028	2029	2030
Glass	116	139	153	157	162	167	172	177
Metals	15	18	20	20	21	21	22	23
Corrugated Cardboard	243	291	320	330	340	350	361	371
All Other Paper	197	236	260	268	276	284	292	301
Plastics	83	100	110	113	116	120	123	127
TOTAL	653	784	862	888	914	942	970	999

Composting Facilities - Reference year and 2019 data are reported quantities. To project change in recovery between 2019 and the first year of the planning period (2022), the 2019 reported quantity was flatlined. Through the remaining planning period recovery projections are held constant.

Ohio EPA Food Hauler/Grocer - Reference year and 2019 data are reported quantities. More recent data from 2017 to 2019, shows a declining trend. It is uncertain why the declining trend. It could be possible that waste is diverted but not being reported to capture for data. Without sufficient support, projections are based on the 2017 to 2019, 3-year average per capita recovery rate of 0.01 pound per person per year.

Ohio EPA Scrap Tire Data - Reference year and 2019 data are reported quantities. To project change in recovery between the reference year (2018) and the first year of the planning period (2022), the average percentage change in tons recovered was applied. Through the remaining planning period, recovery projections are held constant at the 2021 projected tonnage of 477 tons

Recycle Day- Reference year and 2019 data are reported quantities. To project change in recovery the reference year (2018) recovery, 9 tons, was held constant.

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	Putnam County Solid Waste District Recycling Center	Composting Facilities	Ohio EPA Food Hauler/Grocer Data	Ohio EPA Scrap Tire Data	Recycle Day	Totals
2018	366	1,805	546	0	862	7,742	66	399	9	11,795
2019	183	2,005	777	0	885	6,983	65	523	8	11,429
2020	425	1,994	791	0	618	6,983	63	554	9	11,438
2021	424	1,994	806	0	618	6,983	63	588	9	11,486
2022	424	1,994	820	0	618	6,983	63	588	9	11,500
2023	424	1,994	836	0	618	6,983	63	588	9	11,515
2024	424	1,994	851	0	618	6,983	63	588	9	11,530
2025	424	1,994	867	0	826	6,983	63	588	9	11,754
2026	424	1,994	882	0	826	6,983	63	588	9	11,769
2027	424	1,994	899	0	826	6,983	63	588	9	11,785
2028	424	1,994	899	0	826	6,983	62	588	9	11,785
2029	424	1,994	899	0	826	6,983	62	588	9	11,785
2030	424	1,994	899	0	826	6,983	62	588	9	11,785
2031	424	1,994	899	0	826	6,983	62	588	9	11,785
2032	424	1,994	899	0	826	6,983	62	588	9	11,785
2033	424	1,994	899	0	826	6,983	62	588	9	11,785
2034	424	1,994	899	0	826	6,983	62	588	9	11,785
2035	424	1,994	899	0	826	6,983	62	588	9	11,784
2036	424	1,994	899	0	826	6,983	61	588	9	11,784

Sample Calculations

2020 Commercial Survey = population * average per capita recovery rate * 365 / 2000

2020 Ohio EPA Commercial Retail Data = 2019 data * (1 + average percentage change in tons recovered)

2020 Composting Facilities = population * average per capita recovery rate * 365 / 2000

2020 Ohio EPA Food Hauler / Grocer Data = population * average per capita recovery rate * 365 / 2000

2020 Ohio EPA Scrap Tire Data = 2019 data * (1 + average percentage change in tons recovered)

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

Table F-1 Industrial Survey Results

NAICS	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Ash	Non-Excluded Foundry Sand	Flue Gas Desulfurization	
22															
31	3,270		46		11	45	206		167						
32				70	40				1						
33			165,088	33,328	6,426	15	34		21						
Other: 11			469		9										
Unadjusted Total	3,270	0	165,602	33,398	6,485	60	241	0	188	0	0	0	0	0	209,244
Adjustments															0
Adjusted Total	3,270	0	165,602	33,398	6,485	60	241	0	188	0	0	0	0	0	209,244

Source(s): District Industrial survey results.

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

Data in Table F-1 is organized by North American Industry Classification System (NAICS) codes. Utilities are classified under sector 22, manufacturing industries are classified under sectors 31-33 and agriculture, forestry, fishing and hunting industries are classified under sector 11. Table F-1 aggregates the quantities from all returned surveys for each NAICS code sector. The data is based of 20 responses across three different sectors. Sector 33 businesses, which includes metal manufacturers, diverted the largest amount of material, nearly 98% of all of the industrial material diverted. The largest two categories of material diverted were ferrous metal (79% of total) and non-ferrous metal (16%).

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	Ash	Non-Excluded Foundry Sand	Flue-Gas Desulfurization
Buybacks														
None														
Scrap Yards														
None														
Brokers														
None														
Processors/ MRF's														
None														
Unadjusted Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjustments														0
Adjusted Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source(s): District industrial survey results and Ohio EPA. "2018 Material Recovery Facility and Commercial Recycling Data." 2019.

Table F-2 data is obtained from the district's industrial surveys and Ohio EPA's reports on processors. There are no industrial buybacks, scrap yard, brokers or processors/MRFs in the district that reported data for the reference year.

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	Ash	Non-Excluded Foundry Sand	Flue-Gas Desulfurization
None														
Unadjusted Total	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

Source(s): Ohio EPA. District recorded program data.

Other recycling programs or sources of recycling data are reported in Table F-3 for industrial material. No other sources of industrial data were found for the District.

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

Material	Quantity (tons)
Food	3,270
Glass	0
Ferrous Metals	165,602
Non-Ferrous Metals	33,398
Corrugated Cardboard	6,485
All Other Paper	60
Plastics	241
Textiles	0
Wood	188
Rubber	0
Commingled Recyclables (Mixed)	0
Ash	0
Non-Excluded Foundry Sand	0
Flue Gas Desulfurization	0
Other (Aggregated)	0
Total	209,244

The District diverted 209,244 tons from the industrial sector. Table F-4 reports the quantities of each material diverted.

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

Table F-5 Quantities Recovered by Program/Source

Program/Source of Industrial Recycling Data	Quantities (Tons)
Industrial Survey	209,244
Data from Other Recycling Facilities	0
Total	209,244

Table F-5 reports the total tons diverted for each program/source. The only source of industrial data for the District is from the industrial surveys.

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

B. Historical Recovery

Excluding the dip in 2015, the tonnage recovered follows a consistent increasing trend. The number of businesses responding to the survey averages about 18. The majority of those responding are repeat responders that submit a survey annually. The other industrial businesses are not as consistent. Data for 2018 and 2019, captures responses from businesses that historically didn't report, and their data was not previously captured. Which industries responded and the number of industries responding to survey requests, can have a huge impact on the recycling tonnages. For example, if a large industrial recycler reports intermittently, reported recycling tonnages may swing up and down. The District cannot control these factors.

Table F-6 Historical Industrial Recovery by Program/Source

Year	Industrial Survey	Data from Other Recycling Facilities	Totals
2014	146,853	0	146,853
2015	131,512	0	131,512
2016	156,209	0	156,209
2017	170,325	0	170,325
2018	209,244	0	209,244

Table F-6a1 Annual Percentage Change in Tons Recovered

2014	-	-	-
2015	-10%	-	-10%
2016	19%	-	19%
2017	9%	-	9%
2018	23%	-	23%

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

10%	-	10%
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Table F-6a3 Tonnage Change/Year

2014	-	0	-
2015	-15,341	0	-15,341
2016	24,697	0	24,697
2017	14,116	0	14,116
2018	38,919	0	38,919

Table F-6a4 Average Tonnage Change/Year

15,598	0	15,598
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Table F-6a5 Average Tons of Material Over 5 Years

162,829	0	162,829
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Source(s): Annual District Reports for 2014- 2018

The 2015 Approved Plan projected industrial recovery at 121,212 tons in 2018 which is considerably less than actual reported in 2018. Data reporting and responding industries impact recovery data. As seen in Tables F-6 through F-6a5, recovery increased at an average annual percentage change of 10%. Putnam County has roughly 51 industries and through the years received additional reporting and along with that captured more recovery data. In 2018, about 40% of the industries reported data to the District.

C. Industrial Recovery Projections

Projections

Industrial Survey –Over the past 5 years industrial reporting followed an increasing trend, jumping recovering by

23% in 2018. In 2018, 70% of responding industries were repeat responders, meaning they had reported in previous years. The remaining 30% were new responders. Industries new to respond, increased the recovery data over these past 5 years. The District completed the 2019 data surveys, so 2019 tonnages shown in Table F-7 is actual survey data. Data reported in 2019 was slightly lower than reported in 2020, as result of missing data from a past responder.

The District does not expect the increase in reporting and data recovery to continue to grow at the 10% annual percent change seen over the past 5 years. The District assumes more recovery data will be captured but at a slower rate. 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. To project change in recovery between 2019 and the first year of the planning period (2022), a 2% annual percentage rate was applied. Through the first six-years of the planning period (2022-2027) recovery projections increase at the 2% annual rate and then hold constant at the projected 223,521 tons through the remainder of the planning period.

Table F-7 Industrial Recovery Projections by Program/Source

Year	Industrial survey	Totals
2018	209,244	209,244
2019	190,773	190,773
2020	194,589	194,589
2021	198,481	198,481
2022	202,450	202,450
2023	206,499	206,499
2024	210,629	210,629
2025	214,842	214,842
2026	219,139	219,139
2027	223,521	223,521
2028	223,521	223,521
2029	223,521	223,521
2030	223,521	223,521
2031	223,521	223,521
2032	223,521	223,521
2033	223,521	223,521
2034	223,521	223,521
2035	223,521	223,521
2036	223,521	223,521

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	34,171	8,542	11,079	19,621	3.15	1,042	146,853	147,895	2,425	169,941
2015	34,499	7,755	9,791	17,546	2.79	1,147	131,512	132,659	1,982	152,187
2016	34,499	8,160	8,036	16,196	2.57	1,063	156,209	157,272	1,230	174,698
2017	34,499	9,271	8,795	18,066	2.87	1,734	170,325	172,059	1,848	191,973
2018	33,780	9,632	11,795	21,427	3.48	2,577	209,244	211,821	2,358	235,606

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

Year	Annual % Change (tons)		
	Residential/ Commercial	Industrial	Excluded
2014	-		
2015	-11%	-10%	-18%
2016	-8%	19%	-38%
2017	12%	9%	50%
2018	19%	23%	28%

Waste generation is calculated by adding the quantities of waste disposed (from Appendix D) and the quantities of recycled (from Appendices E and F). The purpose of reviewing the SWMD's generation data is to ensure it makes sense in the context of other available information. Residential/commercial waste generated dipped in 2016 before increasing. Recycling followed the same trend while waste disposed followed an increasing trendline.

Residential/Commercial

Compared to national and State of Ohio averages, both the District and Ohio per capita generation rate followed an increasing trend line. Overall the District's per capita generation rate trends lower and is the second lowest generation rate in the state.

The 2015 Plan Update projected 3.95 pounds per

person per day generation in 2018. Actual per capita generation is slightly less at 3.48 pounds per person per day. The projected tonnage in the 2015 Plan Update predicted more waste disposal than actually recorded. Lower per capita generation aligns and reinforces the District reducing the amount of waste sent to landfills. Shifting away from generating more waste to increased waste prevention.

Year	Pounds/person/day		
	State of Ohio	National	Putnam County
2016	6.30	4.53	2.57
2017	6.64	4.51	2.87
2018	6.85	Data not reported	3.48

Industrial

Industrial generation followed an increasing trend. Increasing recovery data captures responses from businesses

that historically didn't report, and their data was not previously captured. Which industries responded and the number of industries responding to survey requests, can have a huge impact on the recycling tonnages.

The 2015 Plan Update projected 123,485 tons of industrial generation in 2018. Actual generation is significantly more at 211,821 tons pounds per person per day. The actual generation variation is a result of more recycled quantities captured. Manufacturing employment declined by over 3% in 2015 and 1% in 2016. Modest growth was seen in 2017¹⁰. The District captured an additional 30% first time responders in survey efforts in 2018 adding to the increase in recovery data.

Excluded

Historically almost 100% of excluded waste is categorized as construction and demolition waste. The County documented a peak in 2012 over 5,000 tons and dipped in 2016 before increasing, averaging about 2,150 tons for the next 6-years. The County feels projecting a constant disposal for this stream at the 2018 disposal tonnage is the better projection. This method does not plan for the rise and fall but does provide a constant average for planning purposes.

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	33,780	9,632	11,795	21,426	3.48	2,577	209,244	211,821	2,358	235,606
2019	33,861	10,739	11,429	22,168	3.59	1,033	190,773	191,806	3,977	217,951
2020	33,793	9,635	11,438	21,073	3.42	1,033	194,589	195,622	1,969	218,664
2021	33,726	9,616	11,486	21,102	3.43	1,033	198,481	199,514	1,969	222,584
2022	33,658	9,597	11,500	21,097	3.43	1,033	202,450	203,483	1,969	226,549
2023	33,591	9,578	11,515	21,093	3.44	1,033	206,499	207,532	1,969	230,594
2024	33,524	9,559	11,530	21,089	3.45	1,033	210,629	211,662	1,969	234,720
2025	33,457	9,539	11,754	21,293	3.49	1,033	214,842	215,875	1,969	239,136
2026	33,390	9,520	11,769	21,290	3.49	1,033	219,139	220,172	1,969	243,430
2027	33,323	9,501	11,785	21,287	3.50	1,033	223,521	224,554	1,969	247,810
2028	33,256	9,482	11,785	21,268	3.50	1,033	223,521	224,554	1,969	247,791
2029	33,190	9,463	11,785	21,248	3.51	1,033	223,521	224,554	1,969	247,772
2030	33,123	9,444	11,785	21,229	3.51	1,033	223,521	224,554	1,969	247,753
2031	33,057	9,425	11,785	21,210	3.52	1,033	223,521	224,554	1,969	247,734
2032	32,991	9,407	11,785	21,191	3.52	1,033	223,521	224,554	1,969	247,715
2033	32,925	9,388	11,785	21,172	3.52	1,033	223,521	224,554	1,969	247,696
2034	32,859	9,369	11,785	21,154	3.53	1,033	223,521	224,554	1,969	247,677
2035	32,794	9,350	11,784	21,135	3.53	1,033	223,521	224,554	1,969	247,658
2036	32,728	9,332	11,784	21,116	3.54	1,033	223,521	224,554	1,969	247,639

¹⁰ Ohio Department of Job and Family Services Office of Workforce Development, "Ohio Economic Profile Putnam County", July 2019.

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

Residential/commercial recycling is not projected to increase greatly over the planning period. The main reason is that the District does not provide service for the majority of materials recycled. The District is dependent on a company to report information. With limited funding the District made conservative recycling projections and will continue to promote programs and waste prevention to maintain a lower per capita generation rate.

Industrial recycling increased due to more industries reporting data. The District conservatively estimated projections over the planning period as fluctuations due to responding industries is expected.

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 developed several programs to guide the SWMD towards the 2009 State Plan goals. Programs and strategies approved by Ohio EPA in the 2016 Plan are evaluated in this Appendix H. In this Appendix, the Policy Committee 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 banks. The SWMD's role instituting this network of available opportunities varies.

a. Evaluation

This analysis takes a macro look at the residential infrastructure to identify service gaps and then further evaluates the system parts to evaluate performance, service levels, and cost. The District's recycling infrastructure relies on drop-off sites for residential recycling and curbside programs in two villages.

CURBSIDE AND DROP-OFF

Curbside Analyses:

There are approximately 162 persons per square mile in Putnam County. Roughly 47% of the population reside in villages and the other 53% in townships. One of the major challenges for curbside recycling is the cost of service in rural areas with low population densities. As can be seen in Figure H-1, most townships are under 4,000 persons. The majority of the residents reside in single or two-unit family housing with only approximately 6% of the population in multi-family units of three or more units.

Two villages, Ottawa and Glandorf offer curbside recycling to their residents. Ottawa's program is non-subscription curbside with variable rate trash pricing. The Village contracts for the service providing single

family and multi-family up to four units with service. Based on the number of housing units in Ottawa, approximately 90% of the housing units have access to curbside recycling. The District was unable to track down the tonnage of recyclables diverted through this program. Service is automated and picked up bi-weekly.

Glandorf's program is subscription curbside. The residents are able to subscribe to service with a private service provider. The District was unable to track down the tonnage of recyclables diverted through this program.

Curbside programs offer greater convenience and generally demonstrate higher recovery as reported in a 2016 study. According to The Recycling Partnership's (TRP) 2016 study, on average, Americans recycle 143-pounds per person per year via curbside recycling¹¹. 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 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.

Without curbside recovery metrics the District cannot benchmark to other communities to assess the programs.

Drop-off Analyses:

The prevailing method for residential recycling collection in the SWMD is a system of mobile, multi-material drop-offs which began in 1996. In the reference year there were 7 locations.

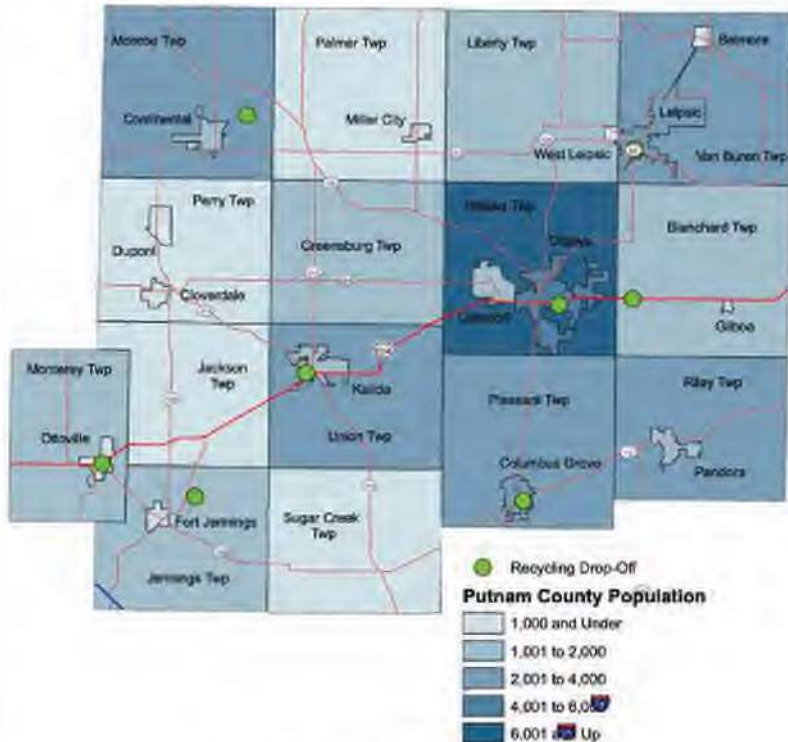


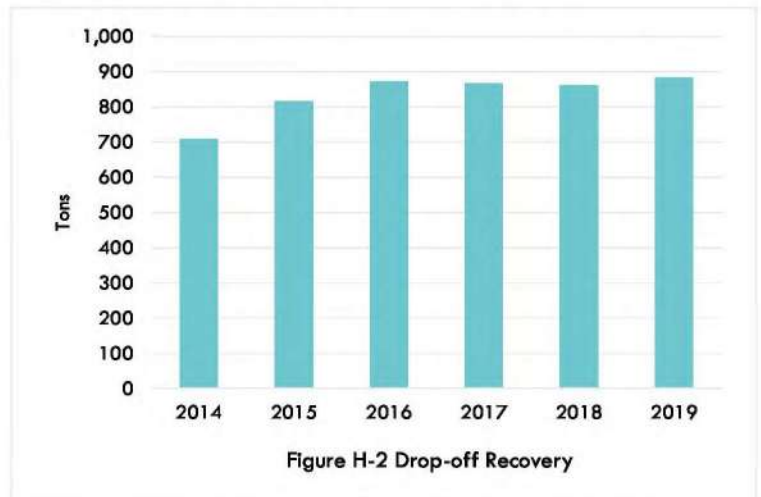
Figure H-1 Drop-off Locations (2018)

¹¹ The 2016 State of Curbside Report by The Recycling Partnership: <https://recyclingpartnership.org/wp-content/uploads/2018/05/state-of-recycling-report-jan2017.pdf>

The District operates its own drop-off network and Recycling Center. Service includes provision of container, collection, and processing of drop-off recycling to 1 urban and 6 rural locations throughout the county. Each drop-off container is 28-yards. Only the Ottawa Village location is available 24-hours. The other 6 locations are available once a week at varied hours. The schedule is maintained on the District website.

All drop-off sites are located along transportation routes. The containers are marked with stickers/signs stating the acceptable materials to include in the containers.

The total recovery tonnage measures fairly consistent as shown in Figure H-2. Assuming the entire county population, the average pounds per capita recovered through the drop-off program is approximately 50 pounds per person per year in 2018.



Benchmarking costs and program recovery, the District was compared to two other solid waste management districts as shown in Table H-1. Logan County and Jefferson Belmont Regional Solid Waste Authority (JBRSWA) directly provides drop-off containers and collection service. Both collect dual stream but unlike the District, both benchmarked districts' drop-off programs are available 24/7. Considering the majority of the SWMD's drop-off are part-time, the SWMD's program is performing well in tons recovered.

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. One challenging factor is 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 which are included in their drop-off program costs of service. All three operate school collections. Also, JBRSWA pays a tipping fee for processing that is included in their cost of service. Both Putnam and Logan operate their own material recovery facilities (Costs are not included in Table H-1).

Table H-1 Benchmarked Drop-off Program

SWMD	Cost per Ton	Ton Per Location	Per capita Recycling (Pounds per Person per Year)
Putnam County SWMD	\$107	123	50
Logan County SWMD	\$48	167	103
Jefferson Belmont Regional Solid Waste Authority	\$363	89	61

Source:
 Logan County SWMD Quarterly fee reports and Annual District Reports for calendar year 2017.
 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. This is a common issue other SWMD's across the state are experiencing. Jefferson Belmont Regional Solid Waste Authority like other SWMD's the District has spoken to have had to remove and relocate sites. Getting the word out by sharing photos of open dumping on social media and other channels did not help alleviate the dumping for the District's sites. For the District, site location is ideal in the more populated townships along main transportation corridors where they are highly visible. Thus, relocating within the townships is not a best practice option. Higher contamination and problems processing materials that are contaminated at the Recycling Center led the District to try placing site monitors at the sites during the hours of availability. The District visibly noticed a decrease of contamination at the sites that were monitored.

Another challenge with the mobile drop-off operations is maintaining staffing to rotate the containers to their locations for the set times. If site monitors are used then staffing time increases. Staffing shortage has been extremely challenging in late 2020 and into 2021.

Planning for the future of this program the District has considered closing all the drop-off locations, offering a few monitored locations, or improving one location with gates, fencing, cameras and issuing key card access to residents wanting to recycle right. In 2020, COVID-19 pandemic disrupted the state with stay-at-home orders and social distancing protocols thus, the District took this as an opportunity to re-set the program. All site locations were closed for about a month, and then only the Ottawa Village location opened with restricted hours and site monitors. The intent is to provide one-on-one education to residents using the drop-off. Providing residents with information on acceptable materials is a best practice to teach residents. The hope is that less access restrictions will be needed with outreach to each resident.

In 2021 the District began tracking at the Ottawa location where residents using the site are from. Data from June 28 through August 13, 2021, a 7-week time period, shows more than 5,000 users visited the Ottawa drop-off site. As seen in Figure H-3 the users that visited

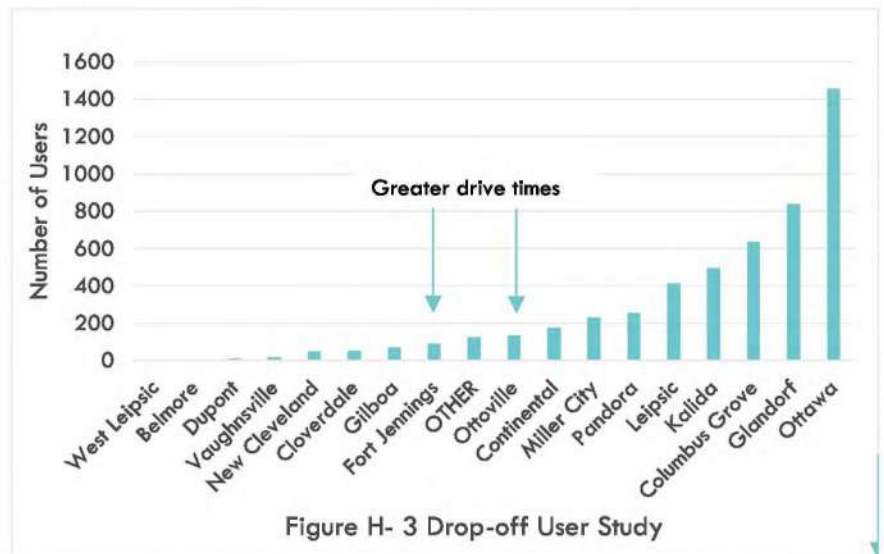


Figure H- 3 Drop-off User Study

more frequently were recorded from Ottawa, followed by Glandorf and then Columbus Grove. These communities are the largest population centric communities. Interestingly, both the Village of Ottawa and the Village of Glandorf communities have curbside recycling programs. It could be overflow materials that don't fit in the bin/cart. However, it is more likely residents are from Ottawa Township where curbside service is not available.

This study conducted recorded the community from which the resident user indicated they were from and as such may represent repeat users. This study did not ascertain unique users during the 7-week period. During the study time, the data shows the two communities with the greater drive times to reach the Ottawa location, Fort Jennings and Ottoville, are using the 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. There are several scrap yards in the County and surrounding counties. 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.

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-4, 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-4 U.S EPA's Food Recovery Hierarchy

b. Conclusions/Findings

- (1) One of the major and primary challenges for curbside recycling is the cost of service. 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. To support communities, the District provides education/outreach and technical assistance to calculate benefits of curbside programs.
- (2) Another challenge is capturing curbside recycling data to add to the overall Putnam County diversion rate as well as be able to benchmark to other community curbside programs.
- (3) The key challenge with the drop-off program is contamination.
- (4) Another drop-off challenge is staffing levels for collection.
- (5) Take-back retailers, reuse centers, food donation and food banks need little support from the SWMD in their program operations. The District 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

Putnam County is rural with no major interstates passing through the County. The main transportation

connections through the County are U.S. Route 224 and State Routes 65, 15, 115, and 613. Additionally, the County has two freight railroads that cross through including the CSXT line and the NS line. Both rail lines connect Putnam County to other major Ohio cities including Toledo, Columbus, and Cincinnati along with major national regional cities such as Chicago and Pittsburg. There are 3 commercial airports in Putnam County.

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.

87% of land use in Putnam County is cultivated crops, by far the largest share of land use in the County. Following cultivated crops is lower intensity development (6.69%), forest (2.48%), and wetlands (1.64%).

Figure H-5 Land Use



Source: Putnam County 2018 Ohio County Profile Prepared by Office of Research

The remaining land uses represent approximately 1.77% of all land use in the County. The neighboring counties to Putnam main land use are also dominated by cultivated crops.

There are seven villages in the County with populations greater than 1,000, the largest being Ottawa Village.

LABOR FORCE

The largest industry sectors by employment are manufacturing, trade, transportation, and utilities, local government, and education and health services¹². Surrounding counties Van Wert and Henry, two counties that have similar land use to Putnam County, also have similar labor force breakdowns. Manufacturing is also the largest industry sector for Henry and Van Wert, accounting for 32% and 27% of county employment respectively compared to Putnam County with 30% of manufacturing employment¹³.

¹² Ohio Economic Profile Putnam County. Ohio Department of Job & Family Services, Office of Workforce Development. July 2019.

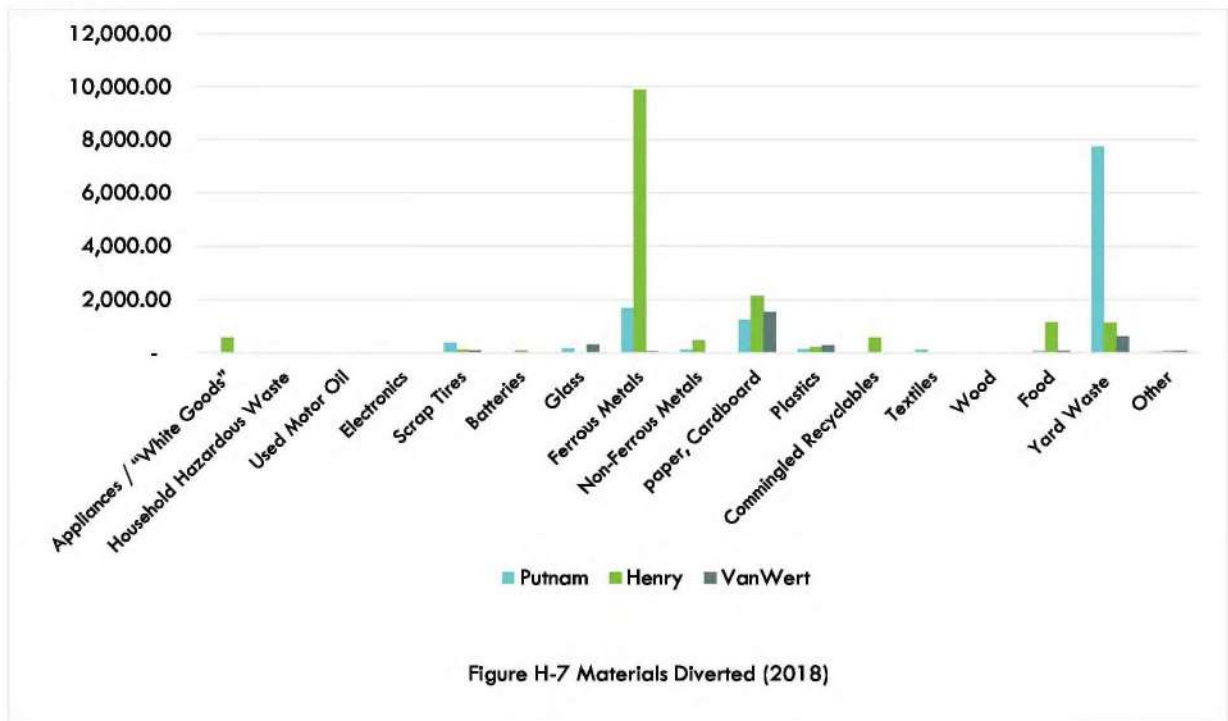
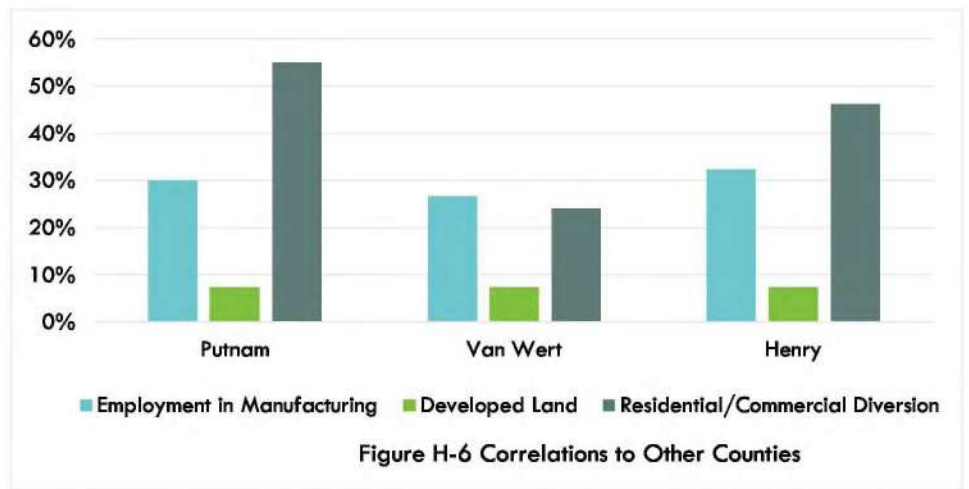
¹³ 2018 Ohio County Profiles for Putnam, Henry, and Van Wert Counties. Office of Research.

Compared to these same three counties, Putnam County has the highest residential/commercial diversion rate as shown in Figure H-6.

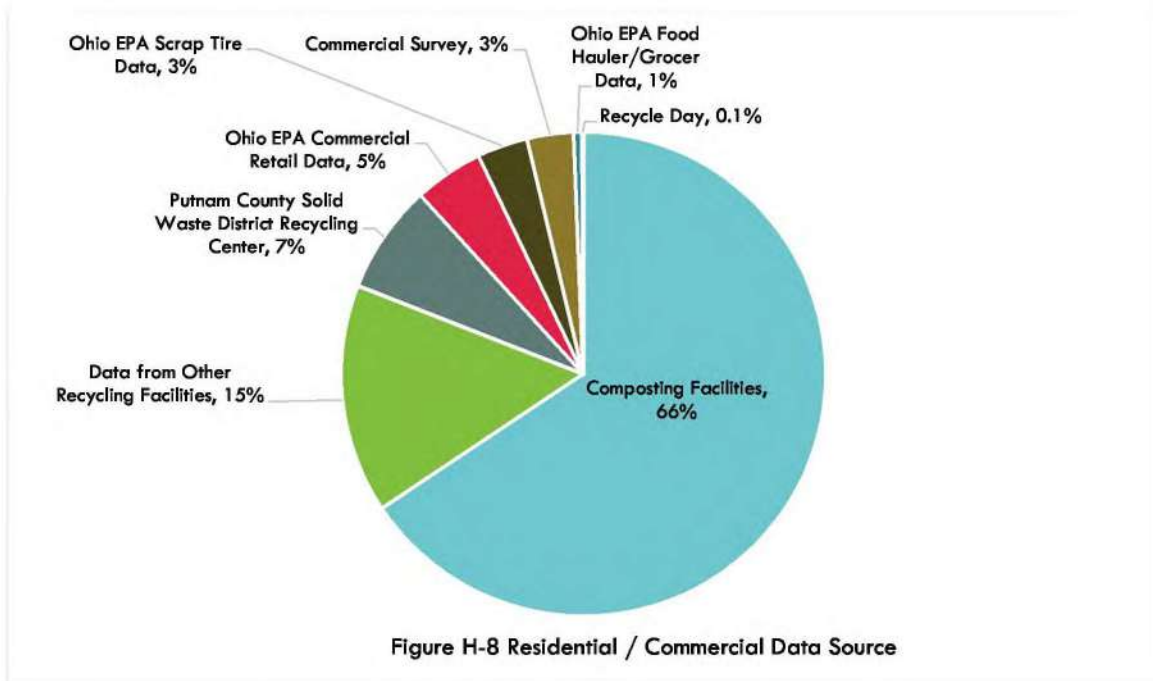
DIVERSION

Comparing commodities diverted in Henry County is reporting higher recovery of ferrous metals, food waste and paper and cardboard than Putnam.

Henry County has two larger buyback recycling businesses which could help explain the large ferrous reports. While, Putnam has more infrastructure to manage yard waste with a few Class IV composting facilities.



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 Figure H-8, demonstrates the majority of diversion is from composting activities and 34% is from other residential and commercial sources.



FUNCTIONALITY

Businesses are responsible for organizing their own recycling programs if desired and can request recycling service from local haulers and/or brokerage companies. 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 SWMD provides information on where to recycle materials.

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. The SWMD provides staff to promote waste reduction and recycling information for at least one public event per year such as the Putnam County Fair.

Commercial Businesses: The percentage of developed land in the County is low, and as mentioned, the commercial base is limited to the villages of the County. Businesses are financially responsible for implementing their own recycling programs. Commercial businesses have the opportunity to contract with local haulers for recycling dumpster service. There are four waste haulers in Putnam County that offer commercial recycling. Businesses can also utilize drop-off opportunities such as scrap yards in the County.

Schools, Institutions: Schools and institutions each have their own challenges or barriers for recycling (there are no universities or colleges in Putnam County). The District targeted schools for recycling and at one point (2014) had 7 schools participating in a mobile program where the SWMD provided and serviced drop-off paper containers. While all schools were encouraged to recycle not all showed interest. It was assumed very little volume was being collected from school program so cost for collection services seemed unfeasible to continue. Stopping service in 2020 which was also during COVID 19 pandemic makes it difficult to directly correlate why there was a decrease in tonnage at the District Recycling Center. It's

worthwhile for higher diversion to contact each school and determine how best to get a diversion program that can meet their budget constraints. The only school program continuing with service is Leipsic School and Leipsic St Mary's. A bin is shared between the schools.

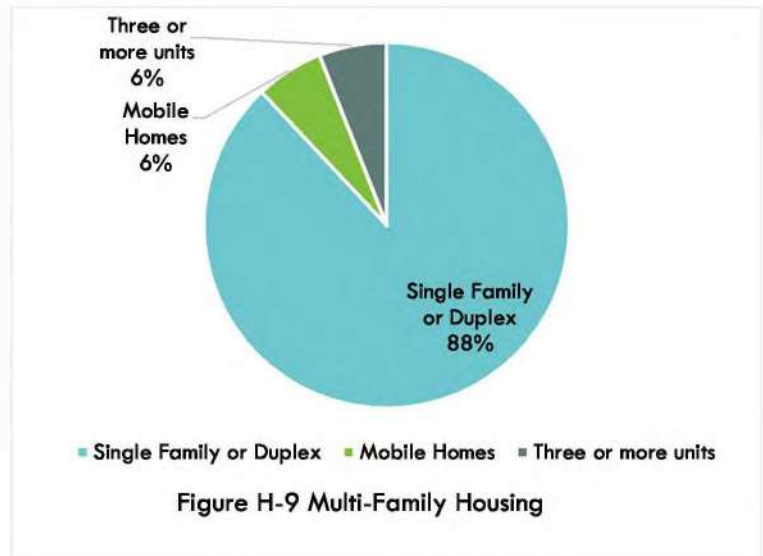
Table H-2 Schools, Enrollment, and Recycling Services

Schools	Average Enrollment	Subscribe to Recycling Service
Columbus Grove Local Schools	5146	
Columbus Grove Elementary School		
Columbus Grove High School		
Columbus Grove Middle School		
Continental Local Schools	3623	
Continental Local Elementary School		
Continental Local High School		
Jennings Local	1925	
Fort Jennings Elementary School		
Fort Jennings High School		
Kalida Local	3570	
Kalida Elementary School		
Kalida High School		
Leipsic Local	3621	X
Leipsic Elementary School		
Leipsic High School		
Miller City-New Cleveland Local Schools	1941	
Miller City Elementary School		
Miller City High School		
Miller City Middle School		
Ottawa-Glandorf Local Schools	8954	
Glandorf Elementary School		
Ottawa Elementary School		
Ottawa-Glandorf Complex Elementary School		
Ottawa-Glandorf High School		
Ottoville Local School District	2743	
Ottoville Elementary School		
Ottoville High School		
Pandora-Gilboa Local Schools	3427	
Pandora-Gilboa Elementary School		
Pandora-Gilboa High School		
Pandora-Gilboa Middle School		
Chartered Nonpublic School		
St Anthony Of Padua	350	
St Mary	1500	X
Sts Peter And Paul	260	

Source:
 Ohio Department of Development School Districts (2018)
 Ohio Department of Education (2018)
 Putnam County SWMD records

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. Government buildings could participate in recycling programs through private haulers. County staff collect recyclables in the Courthouse and drop-off at the Ottawa drop-of site. Businesses are financially responsible for implementing their own recycling programs. Additionally, all government agencies in Putnam County are encouraged to buy products made from recycled materials.

Multi-Family Housing: According to the U.S. Census Bureau, in 2019 approximately 6% of housing units in Putnam County consisted of 3 or more units per structure. Additionally, 6% of housing units are classified as mobile homes. The remaining 88% of housing structures are single family detached, single family attached, or duplexes. More than half of the multi-family housing units are located in Ottawa Village. Property managers may opt to establish recycling for tenants at multi-family properties through private haulers. If multi-family residents do not have access to on-site recycling services, they can utilize the SWMD drop-off recycling program.



b. Conclusions/Findings

- 1) The SWMD supports commercial recycling efforts by offering information resources to understand recycling options.
- 2) There is opportunity for businesses to recycle through private sector contracts and SWMD drop-offs.
- 3) The most significant barrier for businesses and institutions in establishing recycling programs is cost of service. Lack of recycling service provider competition in the County presents limited solutions.
- 4) In order to balance the operational costs for school recycling programs, fees or collection service charges need to be implemented.
- 5) The majority of housing units are single family or duplexes which present less challenges for curbside recycling services.
- 6) Drop-off locations are available for residents not serviced by a curbside program as well as businesses that do not subscribe to services with a private contractor.
- 7) Possible opportunities to expand commercial/institutional recycling include:
 - a. Targeting material such as paper and cardboard which are often generated in abundance in the commercial sector.
 - b. Explore private sector partnerships and funding.
 - c. 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 determine if additional programs are needed to support the industrial manufacturers in Putnam County.

a. Evaluation

According to the “Ohio Economic Profile Putnam County”¹⁴ manufacturing accounts for 30.6% of the annual employment in 2017. As shown in Figure H-10 manufacturing employment has generally risen from 2014 through 2018 while at the same time the number of establishments has varied between a low of 53 and a high of 56. While Putnam County has gained manufacturing jobs in the past several years, the 2026 Ohio Jobs Outlook estimates that Northwest Ohio, in which Putnam County is grouped, will lose 4.4% of manufacturing employment regionally.

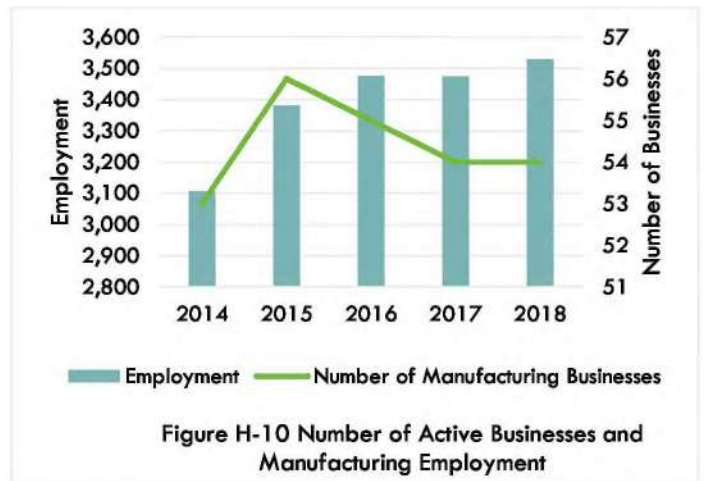


Figure H-10 Number of Active Businesses and Manufacturing Employment

Putnam County Board of Commissioners support advancing, encouraging, and promoting the industrial, economic, commercial, and research development of the county. In fact several manufacturing businesses have expanded operations in recent years. One manufacturer in 2018, in Pandora, Ohio, GreenLine Polymers received an Ohio EPA market development grant to purchase a system to melt HDPE plastics to produce a unified plastic pellet ready for manufacturing. This is one example of an in-district business helping to close the loop in recycling.

For comparison purposes, the District looked to neighboring VanWert and Henry Counties to compare manufacturing employment since both counties also share similar percentages in developed land. Putnam County’s manufacturing employment falls in between the two counties.

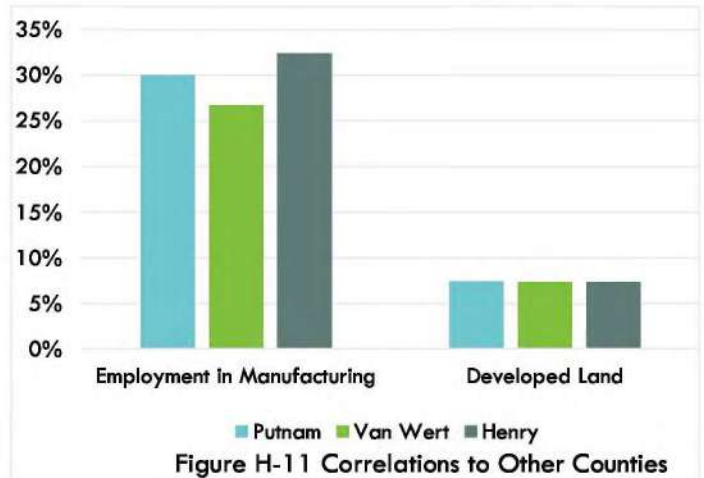


Figure H-11 Correlations to Other Counties

According to web-based research, the largest industries by employment in Putnam County include the following listed in Table H-3:

Table H-3 SWMD Largest Manufacturing Employers

Company
Unverferth Manufacturing
Progressive Stamping
Pro-Tec Coatings
Whirlpool Corporation
Iams Manufacturing
Production Products
Schnipke Engraving
Kalida Manufacturing
Silgan Plastics

Source: Web-based search

Some of the industries operating in Putnam County, particularly the national and multi-national corporations, have sustainability plans (corporate responsibility reports), environmental stewardship, or recycling activities in place. Industries are financially responsible for implementing their own recycling programs. The industrial survey provides some information on total recycling of the responding

¹⁴ Ohio Department of Job and Family Services Office of Workforce Development, “Ohio Economic Profile Putnam County”, July 2019.

manufacturers; however, little is known about waste disposed by these companies.

A 2018 study by JUST Capital analyzed 875 of the largest companies in the U.S. and found that only 136 of those companies disclosed the total amount of waste produced and recycled in a given year, and that the average recycling rate for the companies that did report was 54%¹⁵. These results show that many large companies have considerable work to do regarding waste transparency and reporting and recycling efforts.

While some information on recycling is known through the voluntary survey effort, there are challenges with area industries disclosing recycled data and collecting responses from surveys. The SWMD conducts annual surveys, reaching out to a list of industrial businesses to gather recycling data. Over the past 6 years, response rates have hovered between approximately 45% to 55% of all surveyed industries in Putnam County. While that response rate is reasonable, the vast majority of responses come from repeat responders (70%) so that the County does not have any insight into potential recycling activity of companies that have not historically responded to the survey.

Most of the recycling programs implemented by the industrial sector were spearheaded by those entities with no intervention from the SWMD. The District is available as a resource for industrial generators in the County. 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.

Technical assistance is made available to the industrial sector. The SWMD assists industries when they reach out to the SWMD for help with special waste streams and/or grant assistance. Outreach to industries has not actively been pursued by the SWMD to offer technical assistance. In the past, it was found that most industries employed staff to develop their own programs or were already implementing recycling programs. Outreach efforts were not fruitful and the part because of the challenges.

A program resource for the industrial sector is the "Do-It-Yourself" Audit tool which was slated to begin in 2016. The audit tool was unable to be developed and made available. This tool will be valuable for businesses to learn about waste their operation is generating. It would be valuable not only for those starting a new recycling program but also for those with recycling programs in place.

To meet the 2020 State Plan requirements, the SWMD is required to make at least three programs, activities, or services available to the industrial generators. In addition, to developing the "Do-It-Yourself" Audit tool the SWMD will need to offer one additional industrial program.

b. Conclusions/Findings

- 1) Resources are available to this sector and are distributed when requested.
- 2) The SWMD has found the industrial sector outreach to be challenging.
- 3) Possible SWMD opportunities towards this sector include:
 - a. Promoting Ohio EPA's Material Marketplace, and
 - b. 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.

¹⁵ Forbes.com "These Five Companies Are Leading The Charge On Recycling." April 20, 2018. JUST Capital and Hernando Cortina.

4. Residential/Commercial Waste Composition Analysis

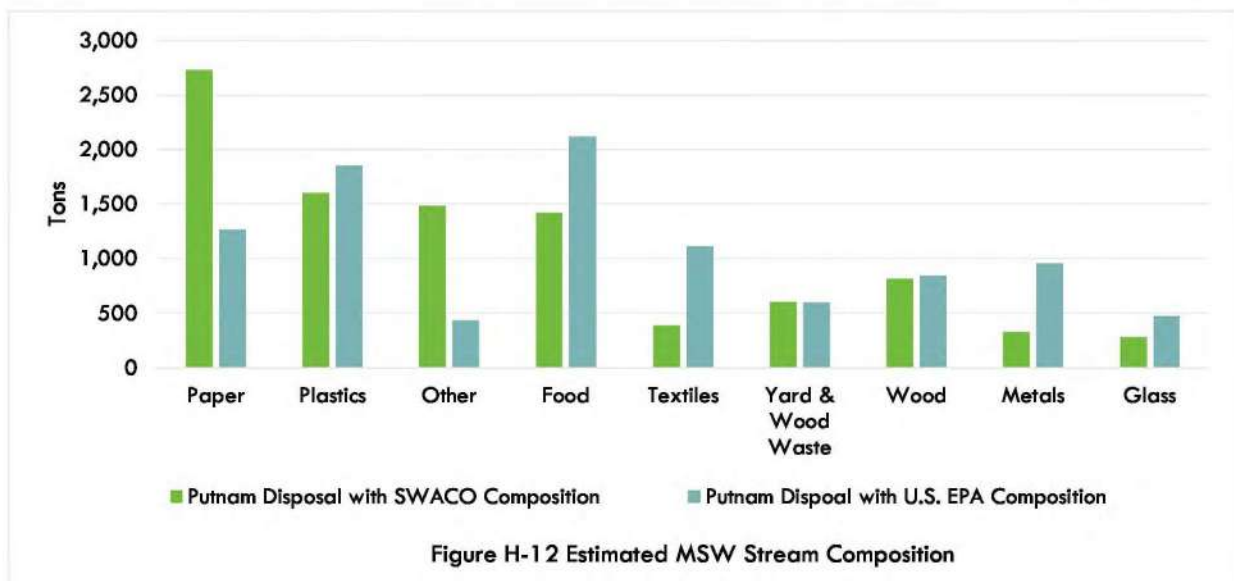
This evaluation of the SWMD's residential/commercial composition analysis describes and evaluates the wastes that make up the largest portions of the residential/commercial waste stream. The evaluation outlines what programs are in place to address these waste streams and what programs the SWMD should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

a. Evaluation

$$\text{Waste Generation} = \text{Wastes Disposed} + \text{Wastes Diverted}$$

$$21,427 \text{ tons} = 9,632 \text{ tons (disposed)} + 11,795 \text{ tons (diverted)}$$

Of the 21,427 tons generated in the SWMD in 2018, 45% 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 percentages¹⁶ were applied to the



SWMD's landfilled tonnage of 9,632 tons.

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 U.S. 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 U.S. EPA, 28% and 13% respectively. Additionally, the Other category is greater in the case of SWACO at 15% compared to 5% for the U.S. EPA. Food waste, textiles, and metals are three categories where the U.S. EPA's estimate is significantly greater than SWACO's estimates. Without specific waste composition data from Putnam 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.

¹⁶ SWACO 2019 Waste Characterization Study and U.S. EPA 2017 Facts and Figures

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-12, 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.

To fully understand the diversion potential in the waste stream, it is important to also consider what out of the waste stream is currently being recovered. The measure for current recovery is called capture rate, and it documents the proportion of a specific material that is recycled or captured from total generation of that material. For example, Putnam County is estimated to have generated between approximately 2,500 tons and 4,000 tons of fiber in 2018 of which 1,255 tons was recycled so that the fiber capture rate is between 32% and 50% respectively. The SWMD has high capture rates for yard waste, metals, glass, and paper indicating that the collection programs for these materials are working well, particularly for yard waste. Other materials have very low capture rates such as plastics, food waste, and yard waste indicating that there is a significant amount of these materials headed to disposal (Table H-4).

Table H-4 Material Capture Rates by Material Types

Material Type	Capture Rate (SWACO)	Capture Rate (U.S. EPA)
Paper	32%	50%
Plastics	8%	7%
Other	24%	52%
Food	4%	3%
Textiles	24%	10%
Yard & Pet Waste	93%	93%
Wood	1%	1%
Metals	85%	66%
Glass	38%	27%

Fiber (Paper Materials) Waste Stream:

As mentioned above the SWMD is diverting between 32% and 50% of all fiber generated in Putnam County, which is a strong recovery rate. However, fiber materials (cardboard and paper materials) have potential to be recovered in higher rates. In fact, American Forest and Paper Association stated the U.S. paper recovery rate in 2018 is approximately 68.10%¹⁷.

All SWMD residents have access to fiber and cardboard recycling through the drop-off collection program.

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

¹⁷ ¹⁷ <https://www.paperrecycles.org/statistics/paper-paperboard-recovery>

and recycle their cardboard independently.

End markets and processing of fiber 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:

Putnam County successfully captures the vast majority of yard waste being generated (93%). Part of this success is due to the SWMD having 4 Class IV composting facilities within its borders: Village of Leipsic Composting Facility, Village of Columbus Grove Composting Facility, Ottawa Composting Facility, and Glandorf Composting Facility. While all of these facilities accept yard waste, none are currently accepting food waste. Based on the analysis presented above in Figure H-12, approximately 1,400 to 2,100 tons of food waste are being disposed at the landfill. Ohio EPA reports show 66 tons of food waste was diverted from the landfill in 2018 capturing about 4% 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. Putnam County ranks 3rd out of 88 counties for market value of agricultural crops sold in the state¹⁸. There may be opportunities to explore food waste composting within the County, however expanding organics processing capacity in the county to include food waste may require a significant financial investment and programs/strategies to ensure feedstock and market demand for the finished product.

Plastic Waste Stream:

¹⁸

https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Ohio/cp39137.pdf. 2017.

Residential/commercial estimated waste composition identifies plastics as one of the larger percentages of waste streams being landfilled, and only 7% to 8% of all plastics generated in Putnam County are currently captured for recycling.

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 technically recyclable, there is not a strong market for them in the central Ohio region. As a result, the Putnam County Solid Waste District Recycling Center focuses on accepting #1 and #2. (Note, this is largely due to sorting at the District Recycling Facility).

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-5.

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

Figure H-13 Plastic Resin Codes

Table H-5 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 H-5 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

Putnam County has shown success in diverting yard waste, metals, glass, and paper. There are also opportunities to grow diversion for the SWMD, particularly for food and wood waste and plastics.

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 U.S. EPA'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 U.S. EPA's food hierarchy.
- Share and promote U.S. 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.
- 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 are offered to influence behavior. Typical economic incentives include rebates, rewards, grants, volume-based fee structures, etc. The majority of SWMDs offering economic incentives in Ohio either tie the amount recycled to some sort of financial compensation or reduce the cost of recycling. There are other Districts offering grants or rebates to incentivize diversion and showing reasonably good success. The biggest limitation for implementing such program in the District is funding.

The SWMD benchmarked other rural solid waste management districts economic incentive programs. Jefferson Belmont Regional Solid Waste Authority (JBRSWA) economic incentives are a combination of grants and incentive-based rebates. They were designed to address gaps in litter, closing the loop, developing markets, and recycling collection. JBRSWA had varied success with the incentives. Clinton County's economic incentives are issued in the form of grants and were designed to address targeted audiences. 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 but one of the major restrictions is the amount of grant funding available which may be limiting audience attraction. Another similar sized county, Logan County, has implemented PAYT drop-off systems that drive higher diversion rates and provide a stable funding source. Logan SWMD has drop-off locations that include trash roll-offs and recycling dumpsters and are fenced with lights and cameras. 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 distribution.

The 2016 Plan Update identified two programs as related to economic incentive programs. Each of these programs are discussed here.

Assistance with PAYT: The SWMD offers assistance to local municipalities who wish to institute or promote volume-based collection services. Technical assistance to help communities prepare bids and contracts to implement pay-as-you-throw. The District has found some communities are hesitant to switch from a flat fee trash service to unit based pricing. The Village of Ottawa operates a variable rate trash and recycling service. Bi-weekly recycling service, weekly trash at a base rate of \$14.90 which gives a resident a 60-gallon trash container or 2 bags plus a cart for recyclables. The next level is a 96-gallon trash container at \$15.70 for 4 bags. Additional trash stickers can be purchased for \$2.25.

"Buy Recycled" Messaging: The SWMD also focuses on incorporating a "Buy Recycled" message into programs and activities. The SWMD makes presentations to the public and provides information at the Putnam County Fair.

b. Conclusions/Findings

The technical assistance may help communities establish PAYT programs but if the communities are not taking the District up on the offer, the effectiveness of the program is limited. One potential way to improve this program could be to post more information about volume-based or PAYT systems on the County website and highlight the District's assistance. The District could highlight how the program works in Village of Ottawa as a case study. Or conduct a public opinion survey in communities interested to shed light on public attitudes. Another way to increase uptake of PAYT programs by communities could be to offer the help directly to those communities with recycling drop-offs.

The "Buy Recycled" messaging is important for residents to understand more about end markets and the

need to 'close the loop' on recycling but is more of an education and outreach program. There is no financial mechanism to drive people to buy products with more recycled content. The program should be listed as an educational program.

An alternative program that would be considered an economic incentive program is for the District to offer grants or rebates to residents, businesses or communities to activate recycling behaviors. The grants could be relatively small in dollar amount and be used for things like buying new recycling bins and signage at offices or for homes or for communities hosting zero waste events, activities that encourage recycling.

6. Restricted and Difficult to Manage Waste Streams Analysis

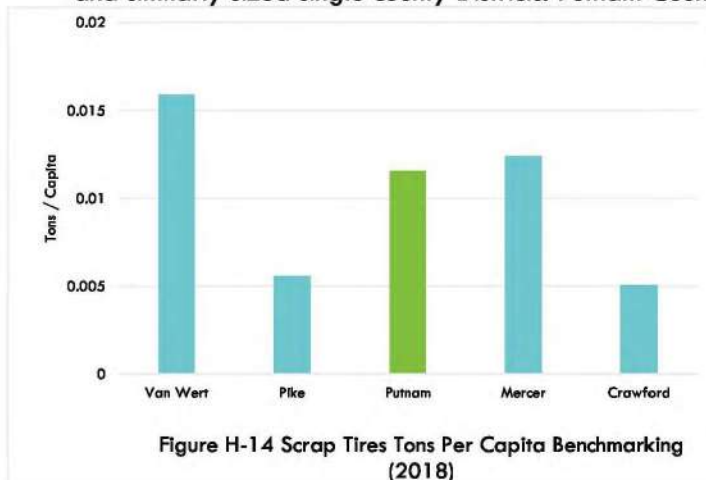
Goal 6 of the 2020 State Plan requires SWMD's to provide strategies for managing scrap tires, yard waste, lead-acid batteries, household hazardous waste and obsolete/end-of-life electronic devices. This analysis evaluates the SWMD strategies and considers other materials and programs for difficult to manage waste. Per Format 4.0 other wastes not required "appliances, pharmaceuticals, household & rechargeable batteries, bulky items such (furniture, carpet, mattresses)".

a. Evaluation

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 can be challenging for SWMDs to manage consistently.

The District does not currently manage and collect scrap tires, but the Putnam County Soil and Water Conservation has held a special tire collection event in the past. In 2012, the event collected 2 tons of tires for recycling. An event was held in 2015 and 2018.

The District mainly relies on four scrap tire haulers/processors to collect and properly recycle or dispose of residential/commercial scrap tires. In 2018, these haulers collected and recycled 399 tons of scrap tires. Figure H-14 compares the per capita collection of tires through these types of haulers for Putnam County and similarly sized single county Districts. Putnam County's haulers are collecting a similar per capita to Mercer County but less than Van Wert County, putting Putnam County in the middle of the group.



The District maintains a list of tire dealers, hauler or other programs and facilities that accept tires from the public for recycling or proper disposal.

Yard Waste:

The SWMD successfully captures and processes the vast majority, over 90%, of the yard waste estimated to be generated in the District. The District has four Class IV composting facilities: Village of Leipsic Composting Facility, Village of Columbus Grove Composting Facility, Ottawa Composting Facility, and Glandorf Composting

Facility. Three of the four facilities accept grass clippings, sticks/branches and other yard waste, Glandorf Village facility collects leaves in the fall. In 2018, the District composted over 7,700 tons of yard waste, accounting for 65% of the District's total residential/commercial recycling tonnage.

The collection sites are in the middle and east of the county, in the large population centers. The District could consider analyzing whether having a site on the western side of the County would make

environmental and economic sense to further increase yard waste diversion.

The District provides residents educational materials/brochures on yard waste composting to boost participation in backyard composting.

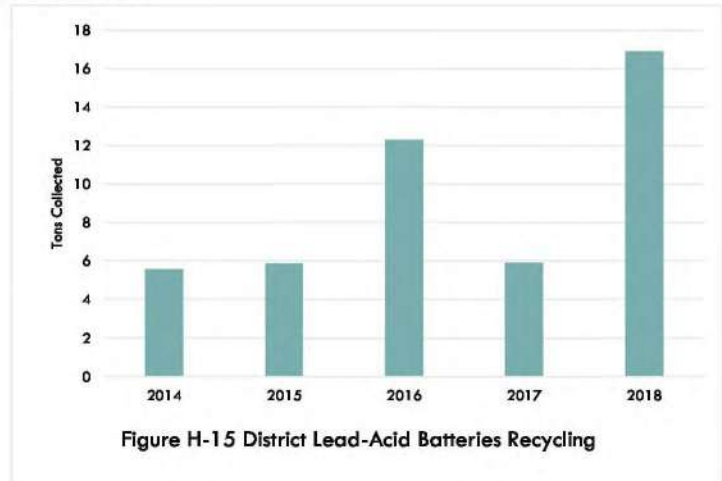
Lead-Acid Batteries:

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. The District relies on private businesses to collect batteries. Virtually all the automotive supply stores and repair shops accept old batteries when new ones are purchased. The retailers charge a substantial deposit when a new battery is purchased which highly incentivizes individuals to bring back the old batteries.

The District maintains a list of locations where lead-acid batteries can be recycled. However, when the District website was re-designed the list of locations was left off the site. For example, a few retailers that take back lead-acid batteries in the District include:

- Advance Auto Parts, 225 Meadow Glen Drive, Ottawa, OH 45875
- CarQuest Auto Parts, 1407 E Main St, Ottawa, OH 45875
- O'Reilly Auto Parts, 830 North Locust, Ottawa, OH, 45875

During the five year period from 2014 to 2018, an average of 9.3 tons of lead acid batteries were reported as recycled annually, with a five year high in 2018 with 16.9 tons (see Figure H-15). While it is difficult to determine how many lead-acid batteries are being generated, and disposed vs. recycled, the District should continue to monitor how many tons of batteries are being collected annually to evaluate whether the retailer take-back program is remaining successful.



Household Hazardous Waste:

Household hazardous waste are materials that may be generated in the home and if handled improperly may cause pollution and safety risks.

HHW includes used oil, gasoline, diesel and heating oil, kerosene, household batteries, lead-acid batteries, pesticides, paint and paint thinners, mercury containing devices, lights/light bulbs, and electronics.

The SWMD manages HHW by organizing a Recycle Day. The event in 2018 collected 9 tons of material in one day including electronics, batteries, medication, lights, paint, metal, mercury containing products and household goods. The program allows residents to properly dispose of/recycle materials in one place. However, the cost to host these events is very high and the District is reliant on donations to host this event. Costs to the District are indirect staffing costs to organize and assist in the Recycle Days.

The webpage is a powerful source of information that is underutilized. The District could look to add more resources and outlets for these materials on the District's webpage. The District should list outlets for other difficult to manage waste such as: appliances, batteries, tires, medications, used motor oil, mercury containing devices, cell phones and electronics. The webpage could also host resources on more environmentally friendly purchasing practices and HHW prevention strategies.

To compare Putnam's HHW collection strategy with other Districts, Table H-6 was compiled by collecting data from other rural 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.

- **Preble County:** 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:** 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.
- **Logan County:** Logan County also has monthly collection events at its Center for Hard to Recycle Materials (CHARM). One Wednesday, 4:00 to 7:00 PM, and one Saturday from 9:00 AM to 12:00 PM every month, the District provides opportunities for residents to dispose of HHW. The facility accepts HHW, electronics, batteries, scrap tires, used paints and oils, and mercury containing devices.
- **Adam-Clermont SWMD:** 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-6 shows that HHW collection is high on a cost per ton basis. At the same time though, the cost per ton for SWMDs varies greatly along with the services each provide to their residents.

Table H-6 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
Logan	Center for Hard-to-Recycle Materials	\$37,688	45,672	\$0.83	37.8	\$997.04
Adams-Clermont	Provides technical advice on proper disposal to residents and vouchers to residents for free HHW disposal/recycling	\$5,000	229,977	\$0.02	NA	NA
Putnam	One day event per year	\$12,150	13,327	\$0.91	9	\$1,349

Source: Solid Waste Management District Approved Plans

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. Putnam County takes back electronics including computers, cell phones, TVs and other electronics during Recycle Day collection events.

The District also tracks electronics recycling efforts through commercial surveys. The District should consider posting any other retailers or opportunities for residents to recycle electronics on the District's webpage.

b. Conclusions/Findings

Another strategy the District is using to manage restricted waste is relying on the private sector, like tire haulers and retailers taking back lead-acid batteries. 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 a single

day event. 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.

By providing resources to residents on retailers and locations that will take hard to recycle waste the District can help increase diversion of these products with lower costs than collection events. The website could also include more education on why to dispose of these products properly and methods to avoid purchasing them in the first place. This is a more passive strategy so it might be hard to capture how many residents would take advantage of these outlets.

A longer-term strategy could be to look for a regional partnership. HHW and restricted waste is a challenge regionally and other neighboring Districts have similar challenges with the high costs of collection events. The District could seek to form a stakeholder group for the region and develop strategies to share resources, and overcome challenges of transportation, low volume, processing and expense.

Opportunities available to manage the restricted waste stream include:

- Add the list of tire and electronic recycling and disposal outlets on the website.
- Monitor how many tons of batteries are being collected annually to evaluate whether the retailer take-back program is remaining successful.
- Add more resources on why to dispose of Hard to Recycle materials properly and methods to avoid purchasing them in the first place on the District's webpage.
- Look for regional partnership solutions and strategies to share resources, and overcome challenges of transportation, low volume, processing and expense

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-16 shows the diversion achieved over the past five years in comparison to Ohio EPA Goal #2. As shown, the SWMD exceeded the 25% residential/commercial waste diversion goal. On average, Putnam County's diversion rate is above 50%, and has remained relatively stable over the past 5 years.

The SWMD collects data from several sources to track diversion as shown in Figure H-17. A major factor in the diversion rate is composting facilities the SWMD, accounting for approximately two-thirds of Putnam County's diversion rate. Other important data sources include data from Other Recycling Facilities such as the Dayton Glass Plant and tire recycling facilities (15%), the Putnam County Solid Waste District Recycling Center (7%), and Ohio EPA commercial retail data (5%). Diverted tonnage reported in the commercial survey accounted for 3% of the SWMD's reported diversion rate. Data from the commercial survey has varied significantly from year to year. In 2015 for example, the District recorded 623 tons of commercial recycling via the commercial

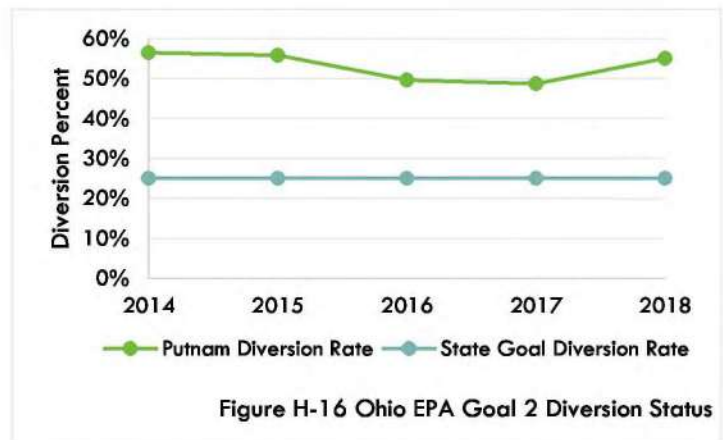


Figure H-16 Ohio EPA Goal 2 Diversion Status

survey. The following year this same metric dropped to 225 tons. 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.

Figure H-18 compares the tons diverted from three sources: commercial survey data, Ohio EPA commercial retail data and Ohio EPA scrap tire data. Tons diverted from each program tends to average between 400 to 600 tons per year. The tons diverted from the commercial retail businesses as reported to the Ohio EPA has been fairly consistent through the analyzed time period, whereas commercial survey and Ohio EPA scrap tire data has fluctuated more. Although the scrap tire tons diverted peaked in 2016, the tons recycled in 2014, 2015, 2017 and 2018 were relatively consistent. The tons diverted as reported by the commercial survey declined 30% from the first two years of the time period to the final two years of the period. This decrease could be due to declines in survey response or declines in business activities.

The Putnam County Solid Waste District Recycling Center has seen about a 20% increase in tons recycled at the facility from 2014 tons to 2018 (see Figure H-19). The increase in tonnage from 2014 and the consistency of tons diverted for the time period analyzed bodes well for the county as the recycling center is the primary way residents can recycled.

The program in the SWMD that diverts the most amount of material by weight is the county's composting facilities. Figure H-20 shows the historic tons diverted from composting facilities. Overall the tons diverted have increased from 2014 to 2018 due to having a peak year in 2018. From 2015 to 2017, the tons diverted remained relatively consistent at around 4,500 tons but jumped to over 7,700 tons diverted in 2018.

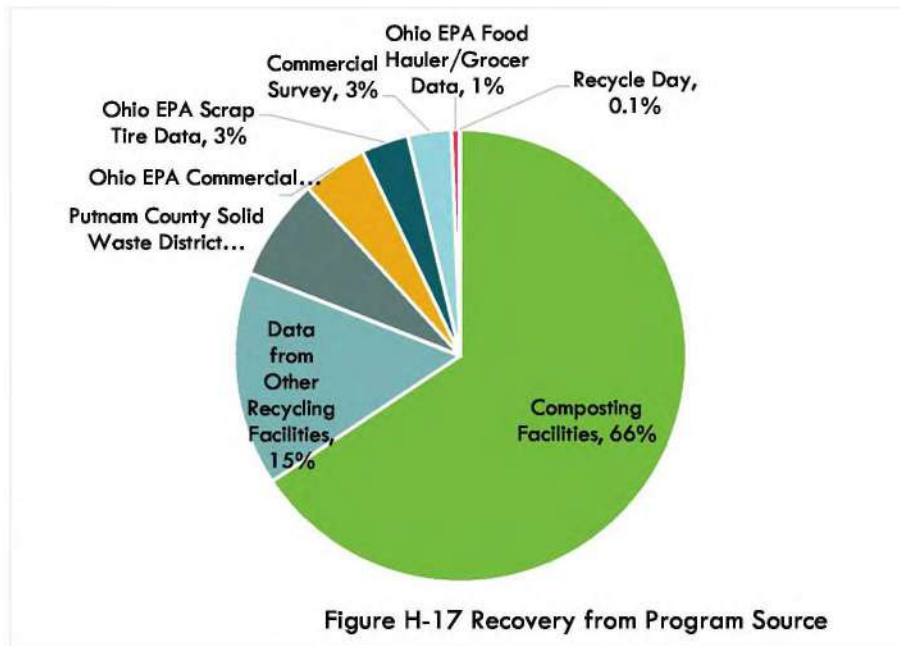


Figure H-17 Recovery from Program Source

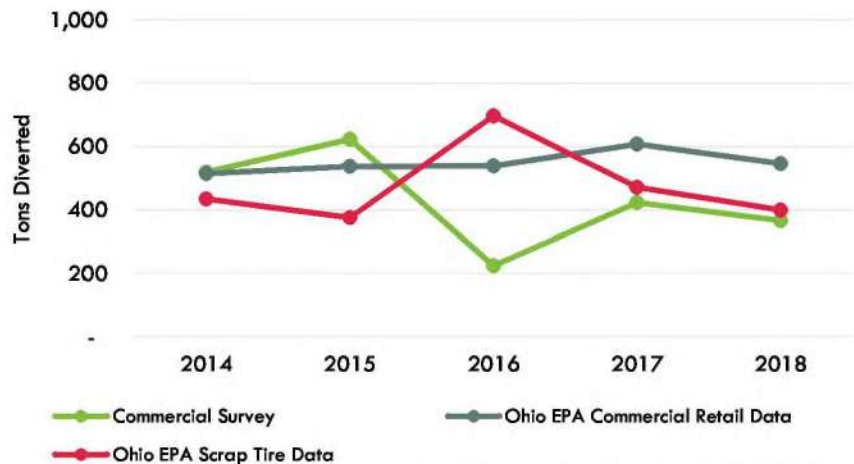


Figure H-18 Commercial Data from Survey, Ohio EPA & Scrap Tires

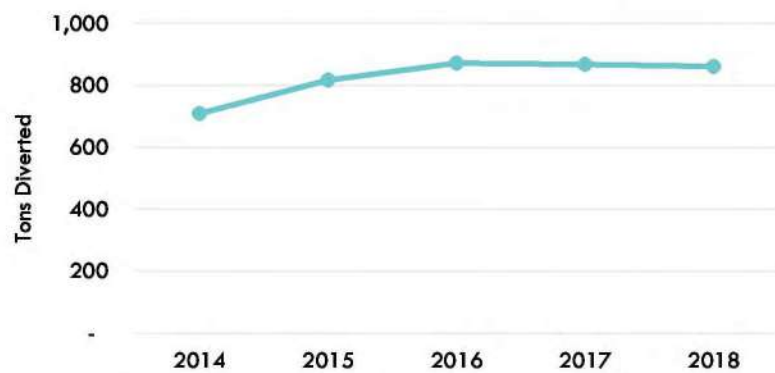


Figure H-19 Putnam County Solid Waste District Recycling Center

The other recycling facilities in the SWMD include buybacks, scrap yards, brokers and processors / MRFs. The tons diverted from these facilities have varied significantly during the analyzed time period (see Figure H-21). In 2014, Diller Metals reported diverting 40,000 tons of ferrous metals causing an outlier year in 2014. The company did not report any diversion for any of the subsequent years. With removing this tonnage from Diller Metals, the county has seen an average of 2,000 tons diverted from the other recycling facilities per year.

Figure H-22 compares the SWMD's 2018 diversion rate to similar population sized Ohio solid waste management districts. When compared, Putnam County's diversion rate at 55% is the highest of these under 42,000 population districts in the state.

Comparing Putnam County to regional solid waste districts (Henry, Van Wert, DFPW, and Hancock), Putnam County's diversion rate is the highest. Its worth noting regionally the northwest solid waste districts average diversion rate is 38%, exceeding Ohio EPA's residential/commercial 25% diversion goal.

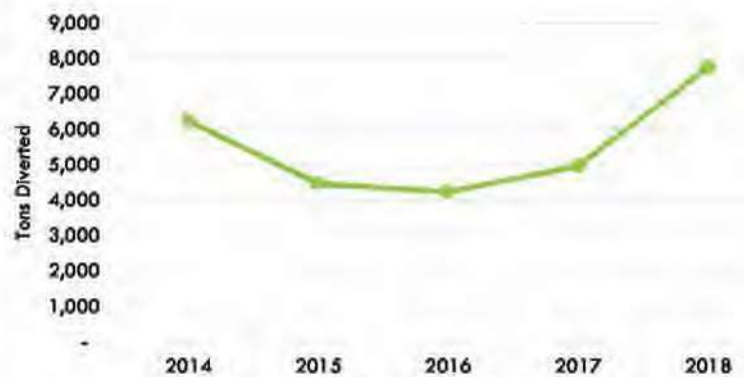


Figure H-20 Composting Facilities

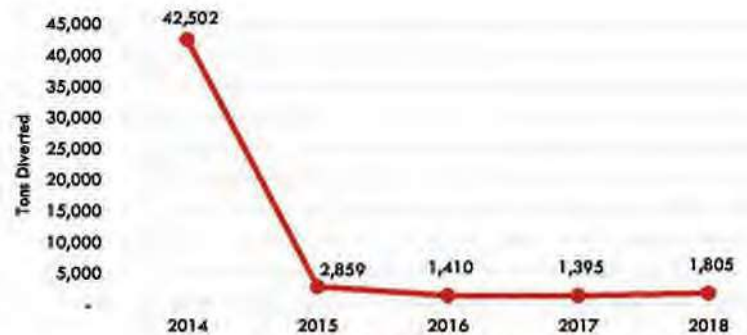


Figure H-21 Data from Other Recycling Facilities

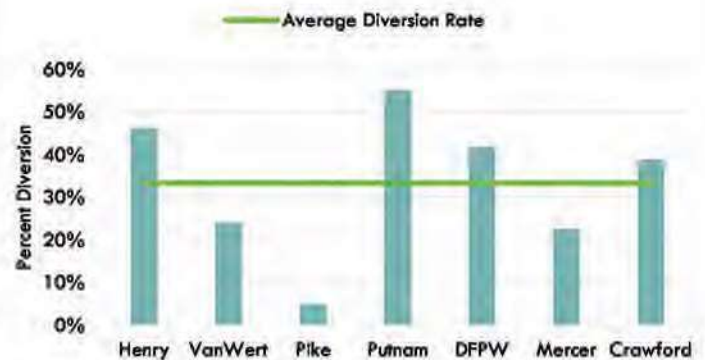
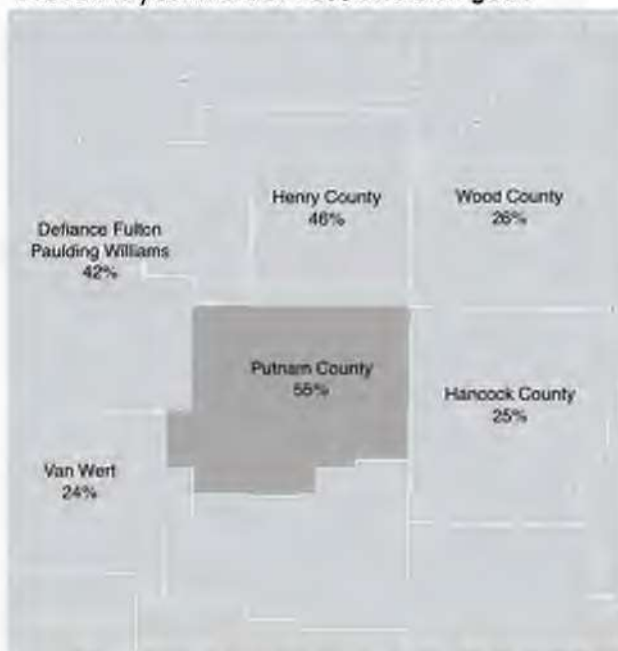


Figure H-22 Residential/Commercial Diversion

The SWMD compiled Table H-7 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 motivated 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

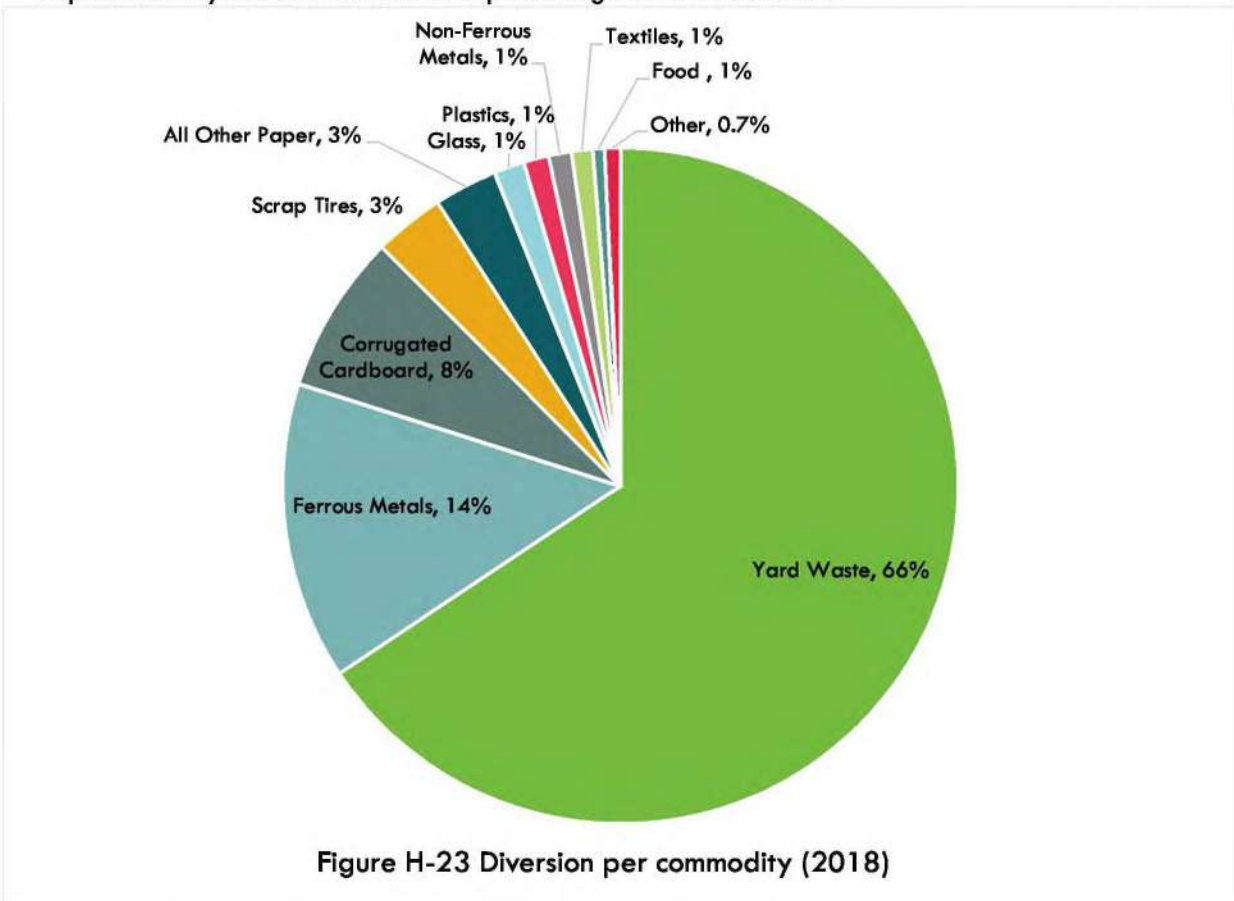
convenience of services is a contributing factor to higher diversion in both of these counties.

Table H-7 Benchmarked County Programs

SWMD	Putnam	Lucas	Logan
Total Diversion Rate (2018)	55.1%	56.2%	50.7%
Curbside Programs	Yes	Yes	Yes, these are PAYT
Drop-off Programs	Yes	Yes	Yes, these are PAYT
SWMD provided cardboard and paper collection routes to businesses	No	Provided to Schools	Yes
Annual Survey of Commercial Businesses	Yes	Yes	Yes
In-District Compost Processing	Yes	Yes	No
Percentage composting contributes to total material diversion	~34% of material diverted	~80% of material diverted	~8% of material diverted

Source: Solid Waste Management Plans

As discussed in Appendix E, yard waste, ferrous metals, and cardboard are the three largest material categories recycled in the reference year, accounting for 88% of the County's diversion. Figure H-23 depicts the recycled commodities as a percentage of total diversion.



Note: A small proportion of lead-acid batteries, used motor oil, wood, Appliances, household hazardous waste, and electronics were also recovered and are not depicted in the chart above. Taken together these items account for 0.7% of recovery.

b. Conclusions/Findings

The SWMD's diversion rate is consistently over 50% and benchmarks as one of the better rates in the state. Local infrastructure serves the district well in being able to demonstrate higher diversion rates. Additionally, the survey data reporting from local businesses is a best practice.

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.

a. Evaluation

The District provides funding to pay for post-closure care of the county landfill.

The present landfill is closed but needs maintenance through 2032. Since 1990 the landfill has absorbed the majority of the District's resources. This involves costs for engineering, leachate collection, water testing, well monitoring, new wells dug, leachate treatment, gas well monitoring, reporting procedures and costs related to the Putnam County Department of Health. This program is implemented by the District. The District's landfill continues to be of great financial concern. The \$15.00 fee per developed parcel assessed to Putnam County residents has thus far been adequate to meet the needs of this closed facility.

Additionally, this analysis evaluates whether the District needs to fund or provide any other programs to address local needs. Potential allowable uses to consider include:

- Cleaning up solid waste and scrap tire dumps (particularly if the SWMD has a large number of open dumps).
- Health department support [pursuant to ORC Section 3734.57(G)(3) and (G)(7)]. [**NOTE:** SWMDs can provide financial support to only those health departments that have been approved by Ohio EPA to enforce the solid waste laws and rules.]
- Enforcement agency support [pursuant to ORC Section 3734.57(G)(7)].
- Financial assistance for counties for the costs of hosting a solid waste facility [pursuant to ORC Section 3734.57(G)(4)].
- Paying the costs incurred by a board of health for collecting and analyzing samples from public or private water wells on lands adjacent to solid waste facilities [pursuant to ORC Section 3734.57(G)(5)].
- A program for inspecting solid wastes generated outside of Ohio and disposed of at solid waste facilities located within the SWMD [pursuant to ORC Section 3734.57(G)(6)].
- Financial assistance to municipal corporations and townships for the costs of hosting a composting, energy or resource recovery, incineration, or recycling facility [pursuant to ORC Section 3734.57(G)(9)].

Putnam County does not provide funding to law enforcement offices 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, however some solid waste management districts do provide this funding. Figure H-24 shows funding provided to litter collection/education by Ohio solid waste management districts in 2018. Twenty-two out of the fifty-two solid waste management districts or 42% provide funding specifically for litter collection/education. Montgomery and Mahoning Solid Waste Districts expended the most in 2018.

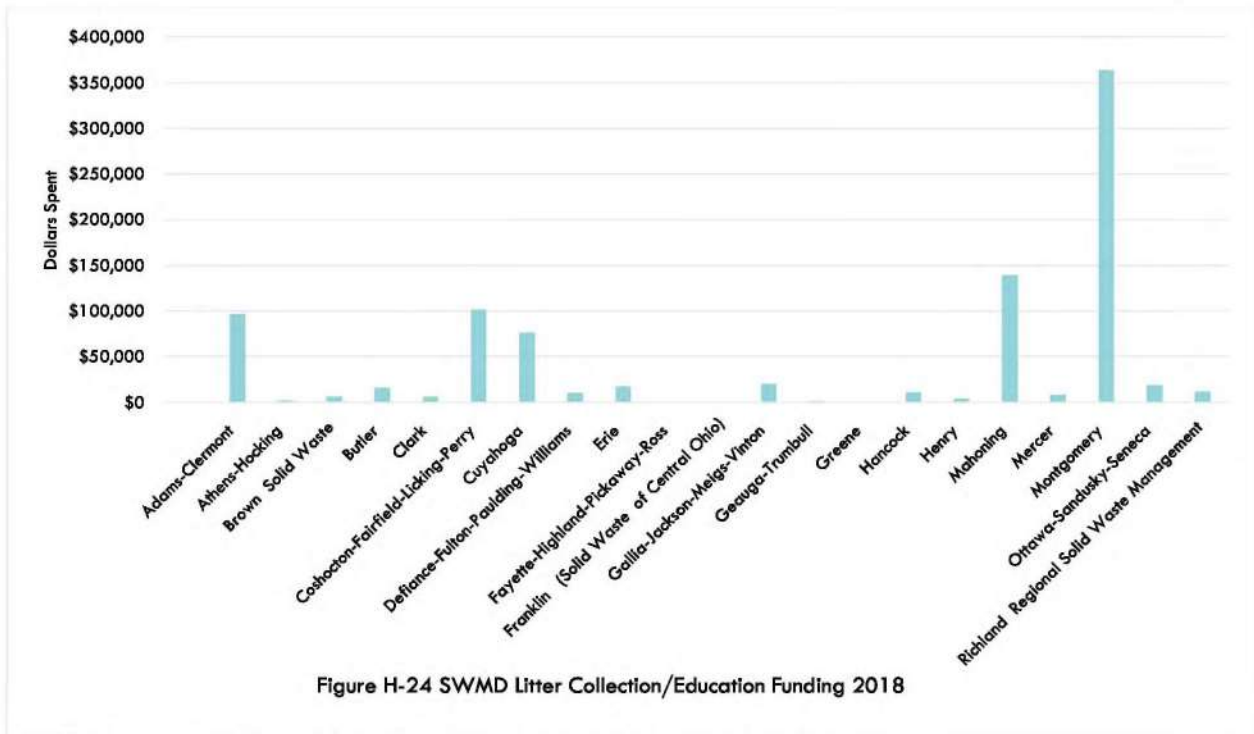


Figure H-24 SWMD Litter Collection/Education Funding 2018

Source: Ohio EPA Quarterly Fee Reports 2018, expense line item 2.m Litter Collection/Education

Figure H-25 shows funding provided to local law enforcement by Ohio solid waste management districts in 2018. Eleven out of the fifty-two solid waste management districts or 21% provide funding specifically for law enforcement. Stark-Tuscarawas-Wayne (STW), SWACO, and Coshocton-Fairfield-Licking-Perry (CFLP) Solid Waste Districts expended the most in 2018.

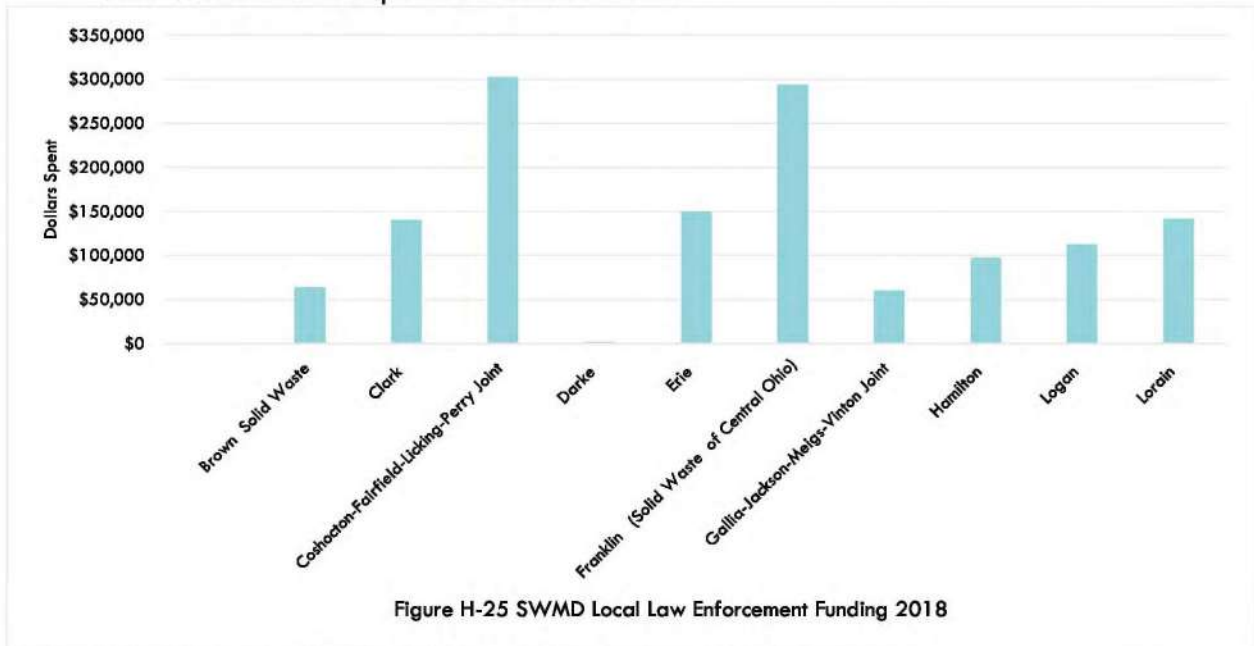


Figure H-25 SWMD Local Law Enforcement Funding 2018

Source: Ohio EPA Quarterly Fee Reports 2018, expense line item 7.b Local Law Enforcement

b. Conclusions/Findings

The District will fund the post-closure landfill care through 2032. At this time, the District is not supporting

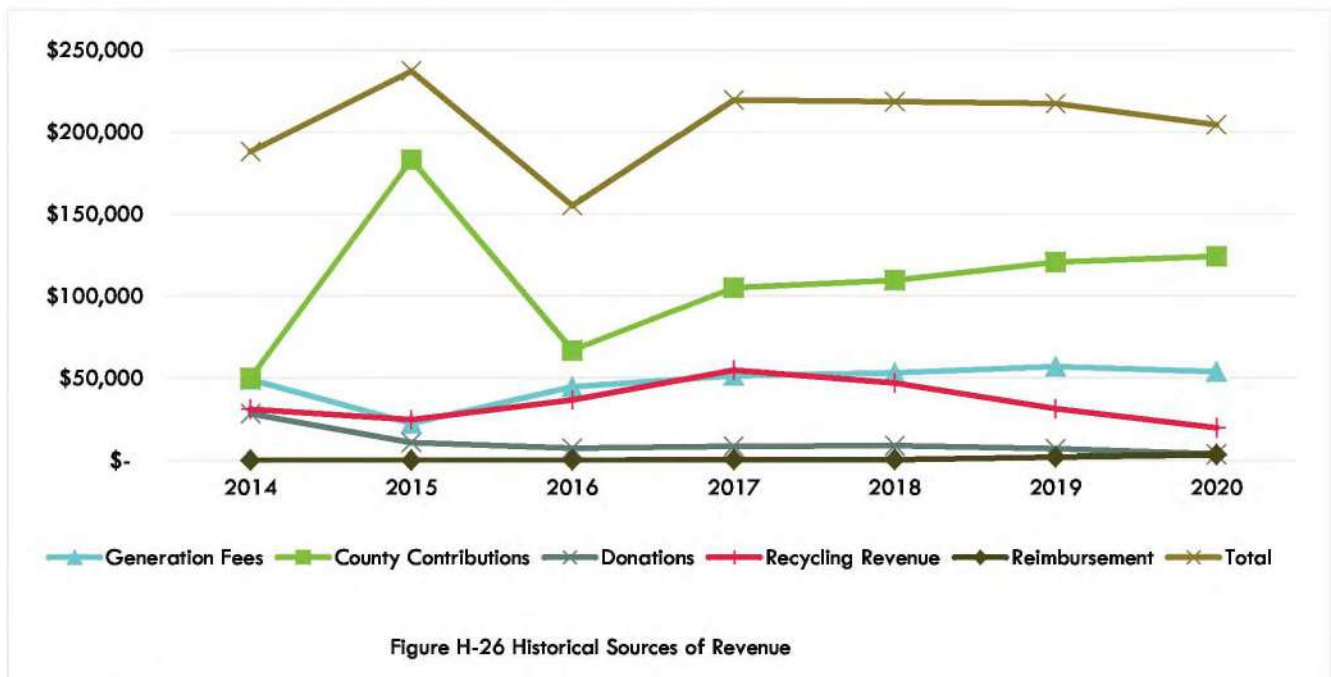
other programs.

9. Financial Analysis

The purpose of this analysis is to examine the District's current financial position and assess the financial requirements and revenue sources throughout the next planning period. The District is currently funded through three main revenue sources: generation fee, county contributions, and sale of recyclables.

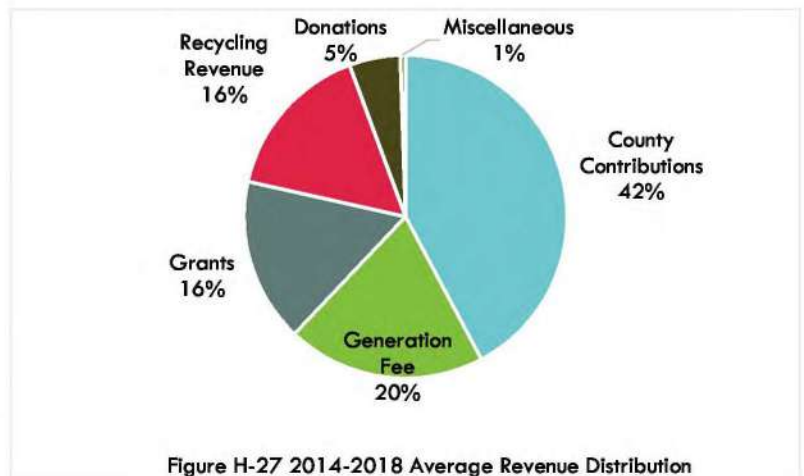
a. Evaluation

Historical revenues are shown in Figure H-26. From 2014 to 2020, revenue averages roughly \$244,000 annually, ranging from a low of \$155,070 in 2016 to a high of \$237,167 in 2015.



Note: Figure H-24 excludes pass-through grant funds received.

The primary source of revenue for the SWMD is county contributions, which contributes roughly 42% of the District's revenue on average over the past 5 years. The County Commissioners charge rates and charges on improved parcels for landfill post closure care. Rates and charges are the only funding mechanism not linked to the disposal of solid waste. This presents a very stable funding source for the District. The primary use of rates and charges is for the closed landfill post-closure care (required for land disposal that leave waste in place upon closure for monitoring and maintaining). Funds left over from post closure care activities are disbursed to the solid waste management district for management and implementation of programs.



The generation fee is the second largest source of revenue for the District, accounting for on average 20% of the District's total revenue source from 2014 to 2018. This funding mechanism fluctuates with changes in the amount of solid waste disposed. Historically, the revenue from the generation fee has been fairly stable, with a slight dip in 2015 and 2016 that corresponds to a drop in residential and commercial disposal. (Note: It is not clear why this decrease in disposal occurred.) The SWMD receives \$5.00 per ton for municipal solid waste and industrial waste generated in the SWMD.

The third largest source of revenue is revenue from the sale of recyclables. Recycling revenue is also a steady income stream and increased significantly when the baler at the Recycling Center was purchased, installed and operating. Average annual revenue from 2014 to 2018 is roughly \$39,000.

Grants do not support operations of the District however, are important for capital purchases to assist the District in its operations.

As an exercise, the District compared the actual revenues to the 2016 Plan projections and prepared Table H-8 to show total and individual funding mechanisms generated. As shown, excluding the pass-through grant, the 2016 Plan's projected revenue was higher than 2018 actual waste receipts. Generation fee revenue was 9% greater and revenue from the sale of recyclables more than double the expected projections. The main contributing factor to why actual revenues were lower is that a lesser amount of county contributions were allocated.

Table H-8 Actual vs Projected Revenues

Year	Generation Fees	Recycling Revenue	County Contributions	Miscellaneous	Total Revenue (\$)
2018 – 2015 Plan projections	\$48,790	\$20,500	\$220,000	\$10,000	\$299,290
2018 - Actual	\$53,076	\$46,855	\$109,536	\$9,088	\$218,555

Note: Figure H-18 excludes pass-through grant funds received in 2018.

Compared to surrounding solid waste management districts, Putnam County Solid Waste District per capita income measures one of the lowest in the region.

Table H-9 Benchmarked District Revenues (2018)

District	Type of Revenue	Fee	Revenue	Population	Per Capita Revenue
Henry	Contract Fee	\$5 / ton	\$123,262	27,185	\$4.53
Putnam	Generation Fee Rates and Charges	\$5 / ton \$15.46/HH/year	\$218,555 ¹	34,499	\$6.34
Hancock	Tier Disposal Fee Generation Fee	\$1.50/\$3/\$1.50 \$1.50 / ton	\$606,597	73,432	\$9.30
DFPW ²	Tier Disposal Fee Generation Fee	\$1/\$2/\$1 \$1 out of state \$2 in-district	\$545,670	38,165	\$14.30
VanWert	Contract Fee Rates and Charges	\$5.30 / ton \$6.00 rural and \$34.40 curbside parcels /HH/year	\$771,684	28,086	\$27.48

¹Excludes the \$100,000 pass-through grant

²DFPW stands for Defiance Fulton Paulding and Williams Solid Waste Management District

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

Note: Only reflect major funding mechanisms listed in Type of Revenue.

Neighboring solid waste districts use various funding mechanisms. Two of the districts, Hancock and DFPW, have in-

district landfills and levy tiered disposal fees. The remaining districts utilize contract fees, generation fees and rates and charges. Only Henry County relies solely on one funding mechanism, all the other districts are diversified. In the rural neighboring solid waste management districts there is no noticeable correlation among the Districts population and per capita revenues.

Historically, over the past 5 years as expenditures fluctuate the County contributes revenues to respond keeping the District solvent. Roughly 39% of budget is allocated to the Recycling Center operations which includes the Recycling Days, advertisements, and drop-off recycling operations, and capital purchases (Figure H-29). All staffing for District and Recycling Center operations is roughly 36% of budget allocations.

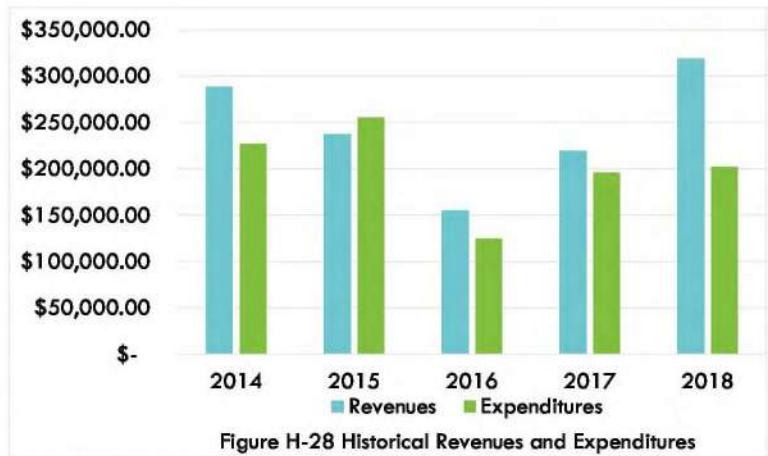


Figure H-28 Historical Revenues and Expenditures

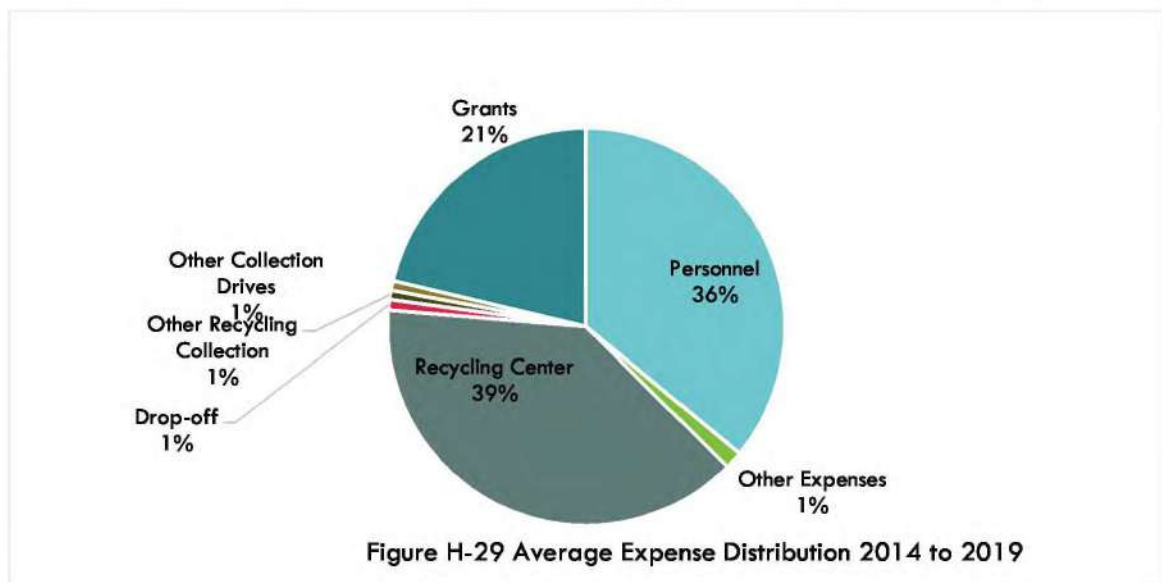


Figure H-29 Average Expense Distribution 2014 to 2019

Analyzing the historical trends, the District made a larger capital purchase about every three years. The Recycling Center was established in 2012 and equipment purchases were expected to bring the center online. In planning ahead, it's a good idea for the District to set aside an annual budget for equipment replacement and new purchases. Skid steers, forklifts, etc. are estimated at a 7-year life expectancy and the sort line and baler about 10-years. After these initial purchases for capital expenses, the Recycling Center operational costs are expected to level. Setting aside annual budget for future purchases will help. Personnel costs have grown due to added staffing as well as health care increases.

As shown in Table H-10, the actual expenses were less than forecasted in the 2016 Plan. However, the actual expenses do not reflect the landfill post closure costs which are included in the 2016 Plan projected expenses.

Table H-10 Actual vs Projected Expenses

Year	Total Expenditures (\$)
2018 - Actual	\$202,390
2018 projected from 2016 Plan	\$308,000

Comparison of neighboring solid waste management district program expenses is found in Table H-11. The SWMD spends roughly \$5.87 on per person in the County per year. VanWert County has the highest per capita spending at \$29.73 per person, while Henry County has the lowest at \$3.13 per person.

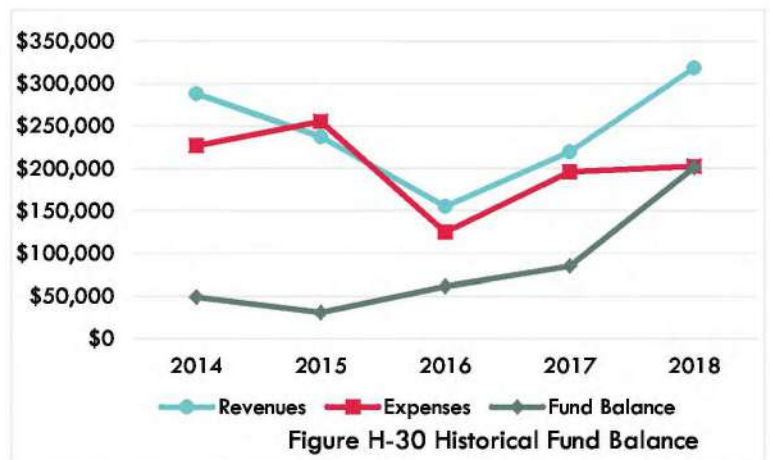
Table H-11 Benchmarked District Expenditures

District	Expenditures	Per Capita Expenses
Henry	\$85,062	\$3.13
Putnam County	\$202,390	\$5.87
Hancock County	\$606,597	\$8.26
DFPW	\$422,739	\$11.08
VanWert	\$835,065	\$29.73

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

There is quite a bit of variance in expenses for the neighboring solid waste management districts with varying expenses vary from as low as \$85,000 per year to as high as \$840,000. The level of service and programs offered greatly impacts overall expenses. VanWert is the highest in the region which is a result of direct service operations of curbside, drop-off and recycling center.

Figure H-30 shows the historical revenues, expenses and fund balance. Contributions are added as needed which when charted displays as peaks and valleys. A steady revenue of about \$300,000 annually would level the peaks and valleys, but that would also contribute to a growing fund balance.



The generation fee revenue contributes roughly \$50,000 annually. Including District expenses plus landfill post-closure care, the District is estimating an annual expense of roughly \$380,000 in the first 6 planning years. Assuming \$30,000 annually in recycling revenue and \$50,000 in generation fee equates to a need of \$300,000 annually. The District explored three options for generating additional revenue which include:

- a. Additional funding could be generated by increasing the generation fee. Since the generation fee is at \$5.00 per ton, an increase in the generation fee must be ratified by a combination of municipal corporations and townships with a combined population within the borders of the district comprising at least seventy-five percent.
- b. Another funding option is a contract or designation fee. With contract fees, the ratification process would not apply for any contract fee increases. The District could switch to a contract fee or choose both generation and contract fees. Ohio law gives each District the ability to control where waste generated from within the District can be taken. Such control is generally referred to as flow control. In Ohio, District's establish flow control by designating facilities. Districts can designate any type of solid waste facility, including recycling, transfer, and landfill facilities.

The Board of Directors would need to adopt designation. As part of Designation contracts are made

with solid waste facilities accepting District waste to remit a per ton contract fee to the District. The designation fee is collected at the first point of disposal by the designated facilities, including landfills, transfer stations, incinerators, and material recovery facilities and remitted back to the District. Only solid waste facilities designated will be authorized to receive waste generated within the District.

- c. Increasing rates and charges would provide additional revenues.

OPTION A: Adding a Designation Fee	
Generation Fee	\$5.00
Designation Fee	\$3.00
Rates and Charges	\$15.46

Planning Year	Generation Fee	Designation Fee	Rates and Charges	TOTAL REVENUES
2022	\$50,491.85	\$31,889.59	\$222,314.80	\$304,696.24
2023	\$50,400.68	\$31,832.01	\$222,314.80	\$304,547.49
2024	\$50,309.69	\$31,774.54	\$222,314.80	\$304,399.03
2025	\$50,218.89	\$31,717.19	\$222,314.80	\$304,250.88
2026	\$50,128.26	\$31,659.95	\$222,314.80	\$304,103.02
2027	\$50,037.82	\$31,602.83	\$222,314.80	\$303,955.45
2028	\$49,947.56	\$31,545.82	\$222,314.80	\$303,808.18

Normalizing the costs on a per person basis Option A would cost each person \$9.47 a year.

OPTION B: Increasing Rate and Charges by \$2	
Generation Fee	\$5.00
Designation Fee	\$0.00
Rates and Charges	\$17.46

Planning Year	Generation Fee	Designation Fee	Rates and Charges	TOTAL REVENUES
2022	\$50,491.85	\$0.00	\$251,074.80	\$301,566.65
2023	\$50,400.68	\$0.00	\$251,074.80	\$301,475.48
2024	\$50,309.69	\$0.00	\$251,074.80	\$301,384.49
2025	\$50,218.89	\$0.00	\$251,074.80	\$301,293.69
2026	\$50,128.26	\$0.00	\$251,074.80	\$301,203.06
2027	\$50,037.82	\$0.00	\$251,074.80	\$301,112.62
2028	\$49,947.56	\$0.00	\$251,074.80	\$301,022.36

Normalizing the costs on a per person basis Option B would cost each person \$9.24 a year.

OPTION C: Increasing Generation Fee by \$3	
Generation Fee	\$8.00
Designation Fee	\$0.00
Rates and Charges	\$15.46

	Generation Fee	Designation Fee	Rates and Charges	TOTAL REVENUES
2022	\$80,786.96	\$0.00	\$222,314.80	\$303,101.76
2023	\$80,641.09	\$0.00	\$222,314.80	\$302,955.89
2024	\$80,495.51	\$0.00	\$222,314.80	\$302,810.31
2025	\$80,350.22	\$0.00	\$222,314.80	\$302,665.02
2026	\$80,205.22	\$0.00	\$222,314.80	\$302,520.02
2027	\$80,060.51	\$0.00	\$222,314.80	\$302,375.31
2028	\$79,916.09	\$0.00	\$222,314.80	\$302,230.89

Normalizing the costs on a per person basis Option C is the same per person cost as Option A \$9.47 a year.

Current funding at cost per person basis is \$8.39 per person a year. If the District increased fees using one of these options, increasing fees would cost either \$0.85 or \$1.08 per person per year more.

d. Conclusions/Finding

Funding sources are stable. About a third of the budget is expended on the Recycling Center operations. Performing a MRF planning level cost assessment will help to determine some efficiencies of the Recycling Center. The District operates with lean budget working to decrease overhead and friction. Working in this manner provides guideposts to stay focused. The District is opting to supplement funding with county general fund and is documented in Appendix O. The options presented in this analysis represent supplemental funding which can be implemented at any time for additional funding should the Board of Directors need to decrease county contributions. A generation fee increase would be separately ratified if that option is selected. This 2022 Plan Update provides authorization for designation should a designation fee be the selected option.

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.

There are no operating landfills in Putnam County meaning the District is reliant on neighboring landfill facilities to export all of its waste. Of the 6 neighboring counties, four have landfills, two in Wood County, one in Hancock County, and one in Defiance County. Over 70% of Putnam County SWMD's waste is hauled directly to two of these landfills, the one in Defiance County and the other in Hancock County. Both landfills are within reasonable direct haul distance for District waste disposal and have over 30 years of capacity.

Almost 20% of the District's waste is disposed in Indiana facilities. This includes over 7% hauled to the National Serv All Landfill in Jay County, IN. Roughly 9% is transferred out of state via the Waste Management – Lima Transfer Facility. While not reported to Ohio EPA or the SWMD, it is assumed the

waste is landfilled in the Waste Management Jay County Landfill (located in Indiana). This landfill is approximately 70 miles from the Lima Transfer Facility. The landfill capacity for these out-of-state facilities is unknown. Figure H-31 highlights all of the landfills where Putnam County's waste is direct hauled to as well as the one transfer station used to consolidate and move the District's waste.

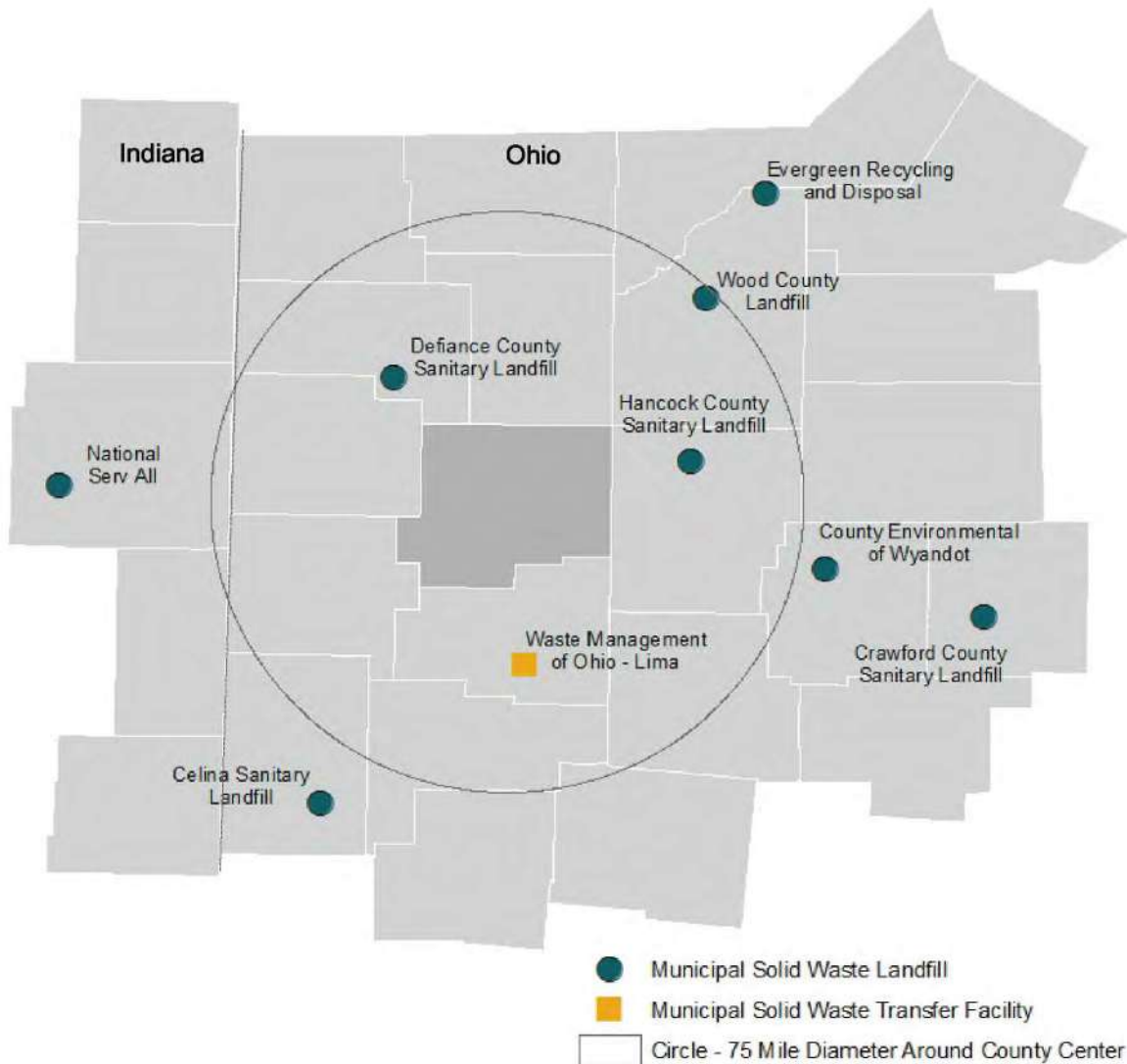


Figure H-31 SWMD 2018 Wasteshed (Facilities Used)

DIVERSION IMPACTS

There is a multi-stream Material Recovery Facility (MRF) in the SWMD. The Putnam County Solid Waste District Recycling Center takes in mixed metals, plastics, paper, cardboard and glass. In northwest Ohio the landscape for processing recyclables to market is decentralized. As shown in Figure H-29 there are six MRFs in the surrounding counties, four multi stream and two single stream MRFs. The single stream MRFs are north of the District in Defiance County and Wood County. In this region, the majority of the MRFs are publicly owned with the only privately owned MRF in Defiance County owned and operated by Werlor Recycling.

The District is a good example of a county where businesses and private sector haulers compete for

different subsets of the discard supply which encourages competition and helps to grow the local economy. It's no surprise this northwest region of rural counties operates in a decentralized system. The District has found having a MRF operating in the county provides convenience and infrastructure to address the gaps that exist in residential curbside and commercial recycling. With the number of MRFs in the region it could make sense to explore partnerships to reach economy of scale for materials and expand material products to include additional plastics or juice cartons.

The SWMD has not identified brokers (middle-man connecting commodities to other parties). Three private recyclers and buybacks located in the District accept a broad range of materials. There are also a few located outside of the County. Additionally other recyclers from outside the county service recyclables from commercial and industrial businesses that generate significant quantities.

There is one resin company in Pandora, Ohio that is recycling high volumes of post-industrial and post-consumer HDPE scrap materials. HDPE resin is then used as a raw material building block for the next generation of ADS corrugated piping products and water management solutions. This company is bringing jobs to Putnam County and closing the loop on recycling.

Diversion Infrastructure for scrap tires includes scrap tire transporters, recycling facilities, developing markets, and monofills and monocell landfills. Transporters are either associated with an Ohio or neighboring state scrap tire facility. There is one business located in Putnam County that is a registered scrap tire transporter. Other registered transporters (District Inventoried 4) provide diversion infrastructure. Regional transporters generally hold contracts with chains of tire dealers and collect tires across the state. Neighboring Henry County has a scrap tire recovery facility (Scrap Tire Recovery Facility Class II) providing recovery infrastructure.

In addition to infrastructure limitations, recycling markets been quite volatile. In the past 5 years, average commodity revenue price has fluctuated from highs in early 2017 to all time lows in 2019 with a more recent uptick 2020. Higher costs for recyclable processing and reduction in the types of accepted materials demonstrate the economic and business models challenges. A fundamental issue is the lack of domestic end markets to handle the oversupply of recycled materials that no longer have a home overseas, the effects of which are felt across the US including in Putnam County.

Figure H-32 shows the in-District compost facilities and surrounding area MRFs.

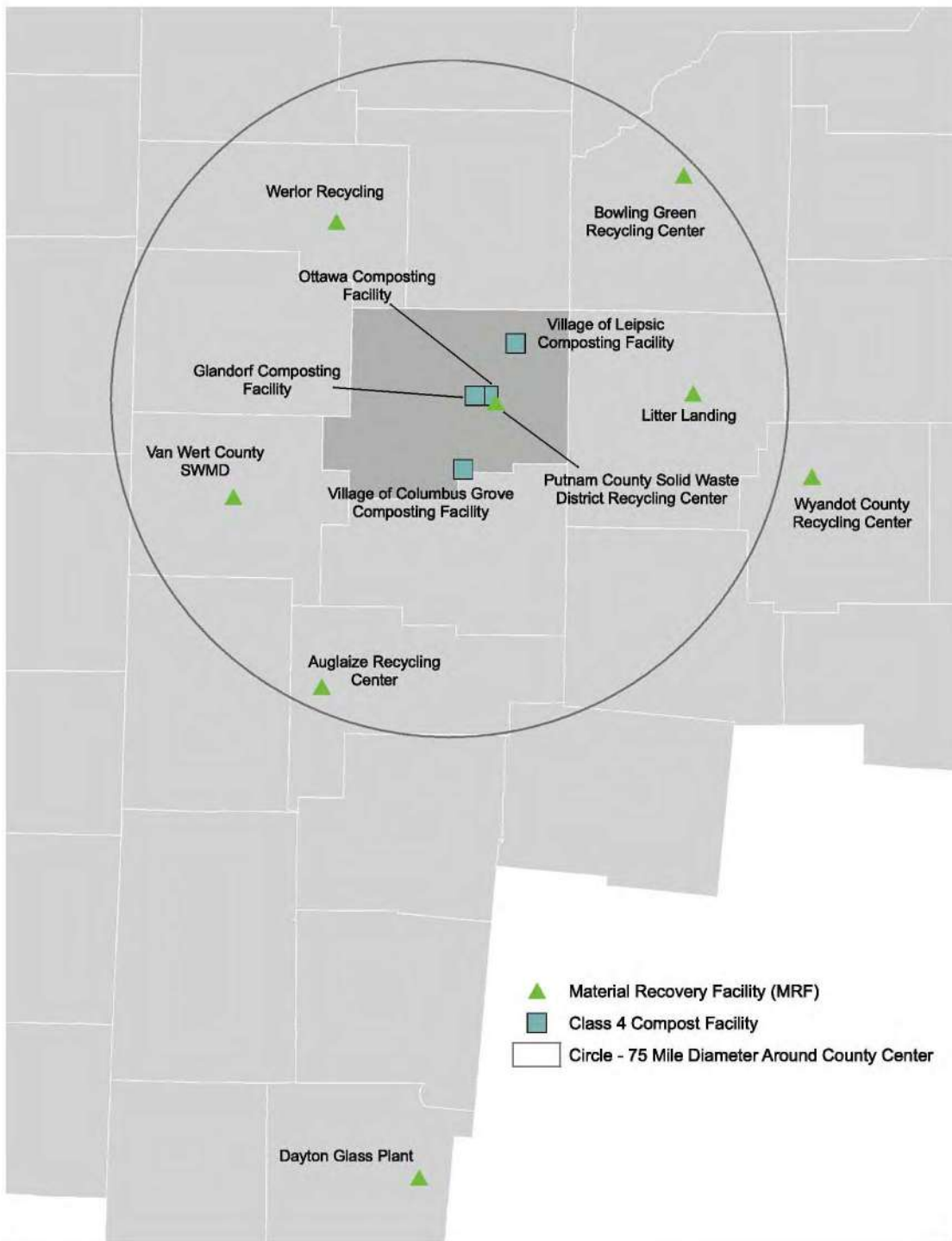


Figure H-32 Regional MRFs and Compost Facilities

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. Putnam County is successfully capturing and processing most of its yard waste within the District. The SWMD has four Class IV composting facilities within its borders: Village of Leipsic Composting Facility, Village of Columbus Grove Composting Facility, Ottawa Composting Facility and Glandorf Composting Facility. The county

composted an estimated 90%+ of the yard waste generated in County through these facilities.

All of the facilities accept yard waste however none accept food waste, an estimated 2,000 tons of food waste is being landfilled annually. Regionally the largest facilities composting food waste are the privately owned Hirzel Farms located in Hancock, Henry and Wood County. Each facility processes between 1,000 to 8,000 tons of food waste per year, however this material is likely entirely from their food manufacturing and not from outside sources. Regional food waste collection and processing would be beneficial but expensive. Collection economics is generally more than twice the processing cost on a per ton basis.

b. Conclusions/Findings

The region has adequate capacity and infrastructure for managing trash but has some noticeable gaps in the diversion infrastructure. As one of the rural solid waste management districts in the region, the SWMD may lack leverage for recycling contracts and hauling that larger districts have. But the District has positioned itself well with a decentralized system. Potential opportunities include:

- Food waste processing is a gap that could be explored with neighboring districts. A regional facility could lessen financial burdens and be financially attractive but additional feasibility studies would need to be explored.
- Additional data needs to be collected and analyzed to determine if costs of organics collection is preventing the expansion of organics composting.
- Focus strategies to promote source reduction as well as food rescue and on-site/backyard composting options.
- Another option is to develop a regional stakeholder group to explore and attract organic processors to the region. There are successful models for public private partnerships in organic management.

11. Population Analysis

The SWMD does not have a rapidly changing population. According to the SWMD ADRs, population has remained stable at around 35,000 residents from 2010 to 2018. Another source, the Putnam County Business and Economic Development Department, recorded an average annual population change from 2010 to 2018 of -0.2%. During this same time period, Ohio's population grew 1.3%.

Throughout the planning period (2022-2036), population is anticipated to decline steadily by 0.2% annually.

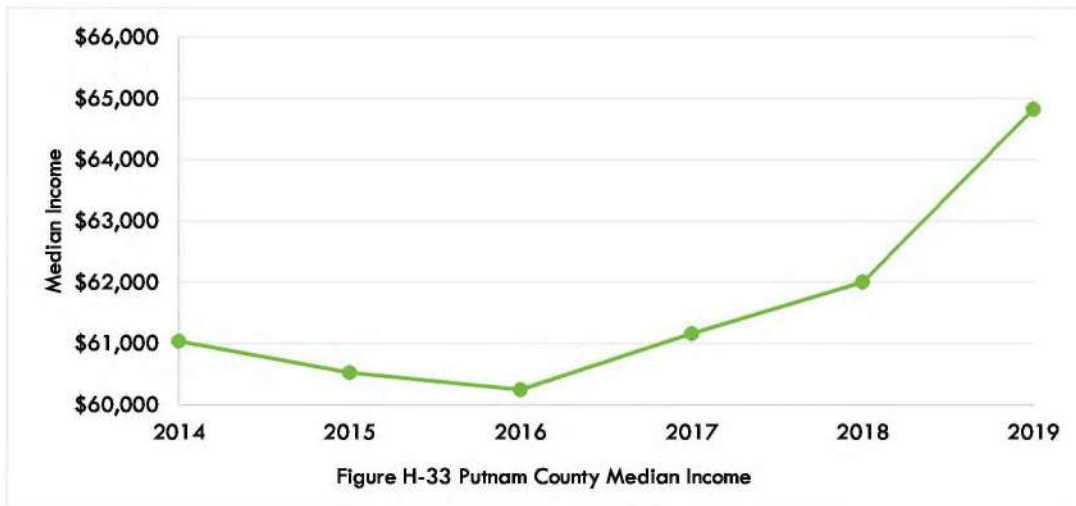
The SWMD has a very low population density of 68 people per square mile. Population density is significantly higher in the villages with an average of 797 people per square mile. Jackson Township has the lowest population density at 25 people per square mile, and Columbus Grove Village has the highest at 1,684 people per square mile.

According to the U.S. Census, the poverty rate in Putnam County remained stable at 6.7% from 2014 to 2018. In 2019, the U.S. Census estimated the poverty rate increased in Putnam County to 7.6%. Census data is not available on how COVID-19 may have impacted Putnam County's poverty rate during the planning period.

Approximately 80% of Putnam County residents live in owner occupied housing units, and 20% are renters. Renters can be a challenging demographic to get 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	\$62,001
Percent of Population Below the Poverty Line	6.7%
Percent of Population in Owner Occupied Homes	80%

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 55.0% 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 98.8% rate.

The SWMD devotes staff time to overseeing and participating in a comprehensive data collection effort.

a. Evaluation

Residential:

The SWMD gathers data from surveys of communities, private haulers, internal SWMD tracking of drop-off and special events 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 571 total employer establishments in 2017. Approximately 517 of those establishments are classified as commercial businesses with NAICS codes related to wholesale trade, retail trade, accommodation and food services, arts, entertainment, and recreation, etc., and 53 are classified as industrial manufacturing¹⁹. The SWMD has spent considerable effort, time and money in the past to survey each individual commercial entity resulting in meager responses.

In the last plan update, the District indicated participation in the commercial and industrial initiative sponsored by Ohio EPA. In this initiative, the District sent out a revamped survey that had the support of the Chamber of Commerce, Ohio Manufacturers Association and the Ohio Retailers Merchant, and was customized for Putnam County's commercial businesses and industries. 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.

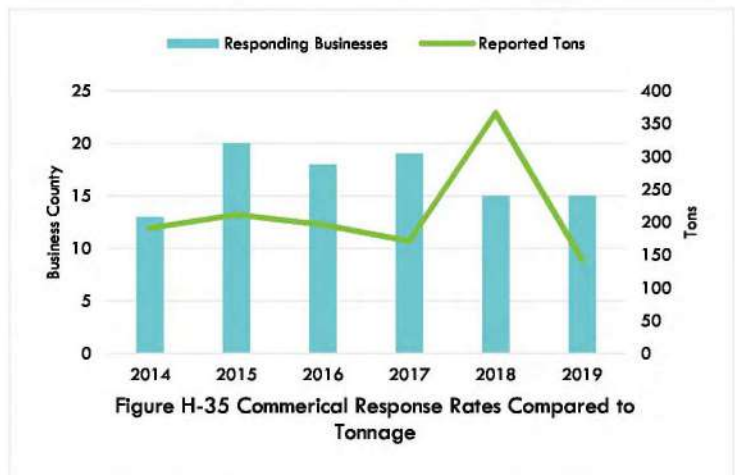
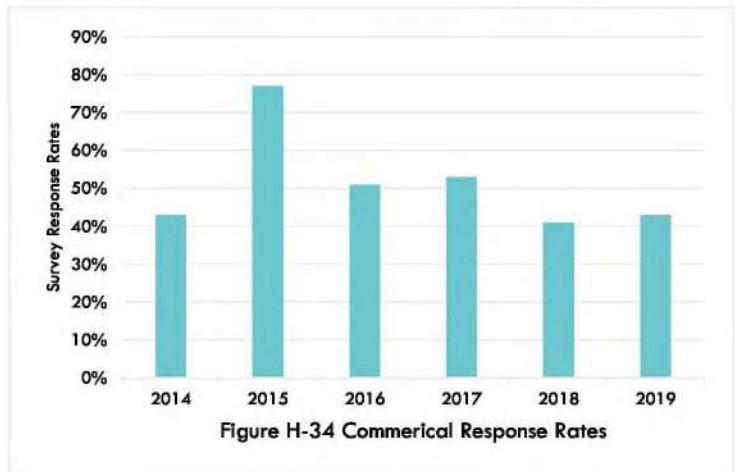
The SWMD surveys businesses annually. Figure H-34 represents total response rate. On average, Putnam County receives a response rate of 51%, however if 2015 is excluded where an anomalously high response rate occurred, the average response rate drops to 46%.

Interestingly, the tons reported in the commercial survey does not correlate strongly to the number of businesses responding. Some of this could be attributed to the inconsistency in reporting across the same businesses. Some businesses may report one year, but not the next two so that the tonnage report is inconsistent.

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-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.

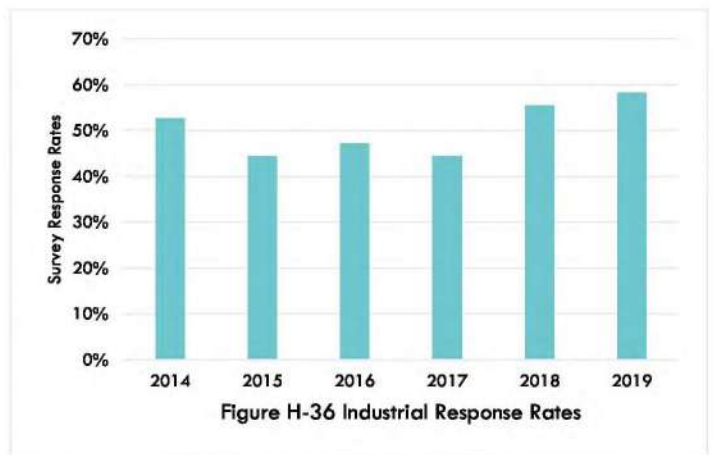
Industrial:



¹⁹ 2017 U.S. Economic Census data

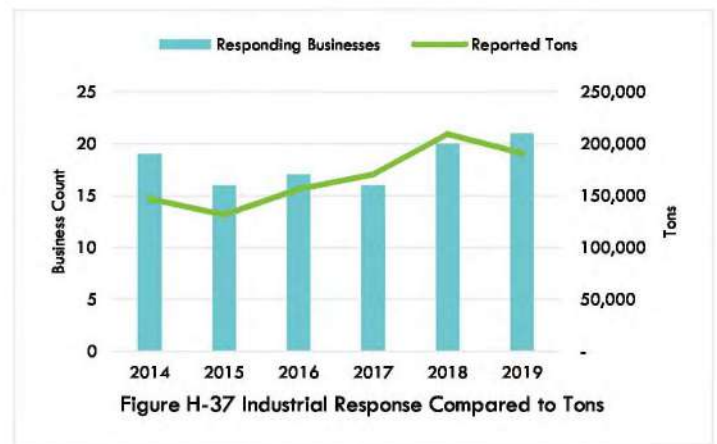
The SWMD gathers data by surveying the industrial sector businesses and Ohio EPA annual published data. The same survey procedure described for the commercial sector is also used for the industrial sector. Figure H-36 depicts the industrial response rates received.

The average industrial response rate for the industrial sector is 50%, similar to the commercial survey response rate. The reported tonnages are slightly more correlated to number of reporting industries than for the commercial survey, however tonnage does not track exactly with reporting industries.



b. Conclusions/Finding

Overall, data collection is vital to measuring the waste reduction and recycling rate. Phone follow-up efforts are needed to return survey responses. At approximately 50% response rates for both the commercial and industrial surveys, Putnam County’s response rate is higher than many solid waste management districts. 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/Outreach Analysis

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.

GOAL 3: MINIMUM REQUIREMENTS

District Website

The SWMD maintains a website at <https://putnamcountyrecycles.com>. The website is managed by Putnam County Solid Waste District (updated in 2020). 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.

Design unifies branding for site: Colors, fonts, and graphics/photos create a coherent visual to be carried across all communications. Bold color palettes, simple layouts, and impactful images will create a fresh and modern look and feel that will draw the attention of the audience.

Site structure: Sub-pages are kept to a minimum to ease navigability.

Content Suggestions:

- Add photos of acceptable materials in addition to the text.
- Add a list of community recycling opportunities.
- Add inventory of outlets for specific materials: HHW, scrap tire, electronics, etc.
- Add education and outreach resources.
- Add a Business Content page on the website with resources: "Do-It-Yourself" Audit, Steps to Better Business Recycling, Recycling business surveys, and third-party resource links (Ohio Materials Marketplace, Recycling and Litter Prevention grants, etc.)
- Add solid waste management plan.
- Add link to Facebook page.

Comprehensive Resource Guide

The website is a resource guide. The SWMD updates at least annually.

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

The SWMD Coordinator is available for speaking engagements.

Conclusions/Findings:

- A few additions to the website will make it a better education resource and comprehensive resource guide.

GOAL 4: OUTREACH AND EDUCATION

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. Three programs are specifically designed to target this sector:

- "Do-It-Yourself Audit" tool
- Industrial Technical Assistance
- Industrial Recycling Opportunities
- School Recycling (service program where one on one outreach is provided)
- Glass Recycling Program (service program where one on one outreach is provided)

The "Do-It-Yourself" Audit tool is a self-conducting waste audit that businesses can complete on their own. This is a great resource tool for businesses. Technical assistance is provided when requested. The District on average provides technical assistance to one industrial business about every other year. The District helps businesses pursue grants and serves as the pass-through. District educates schools to materials they can divert from the landfill. Schools reach out for supplemental service pickups. One school has a permanent container for paper and cardboard. The District established a permanent drop-off for glass and contacted restaurants and bars to explain the service offering.

Target Audience: Elected Officials

Outreach to elected officials is one-on-one and occurs organically. The SWMD connects one-on-one in discussions for drop-off site hosting and curbside recycling technical assistance. With this outreach most community elected officials are reached a year. The one-on-one outreach to this sector has been successful in building trust and establishing relationships.

Additionally the SWMD worked extensively with the Village of Ottawa to develop an outreach and marketing plan to encourage more participations and diversion in it's curbside program. This included press releases, establishing a community ambassador, and implementing a "Get Caught Recycling" reward program.

Target Audience: Schools

School age children are reached through two main programs: Conservation Days and HHW School Curriculum. These programs capitalize on partnerships to connect with this target audience. 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.

To benchmark, Putnam County looked to Clinton County and Wood County, two demographically similar counties. (Note: Wood County's population is almost four times Putnam's County's population). Clinton and Wood Counties conduct presentations for school-age children. Wood County conducts about 70 presentations a year, and Clinton County conducts about 90. To add to education, both County's offer tours of facilities. 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. Clinton County produces a *Recycling Educator* newsletter which is a publication describing presentations and contests available to school-age children. It's distributed at the beginning of the school-year to all teachers. It's also available on the webpage.

The SWMD also connects one-on-one with schools regarding recycling service. The major obstacle is the District's economic resources to provide the service.

Target Audience: Residents

This target audience has been a focus area. The SWMD does not have a designated education specialist and relies on outreach via: one-on-one communication, community events, social media, promotional handouts, media advertisements, and use of Community Recycling ambassadors.

Facebook was launched in March 2020 and currently has 439 followers (as of May 2020). Facebook allows for a two-way conversation with residents. The SWMD has the opportunity to post event information, recognition, drop-off recycling materials accepted, 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 displays and one-on-one engagement at Putnam County Fair, Conservation Days, and The Senior Expo. Chamber, 4-H, Kiwanis and others repeatedly request speaking engagements. These events serve a purpose of educating residents about recycling, litter prevention and District recycling programs. The SWMD also distributes promotional items at these events. Print advertising in newspapers and to schools and others was also used for awareness.

The SWMD also established Community Recycling Ambassadors which is a network of individuals or groups to implement outreach and marketing plan promoting residential recycling infrastructure in their communities. Six people serve as community recycling ambassadors: Ft Jennings & Ottonville, Kalida, Leipsic School, Leipsic Village, Columbus Grove and Continental.

One of the most challenging education element is contamination of recyclables in the drop-offs and seeing and/or measuring a resultant behavior change. The SWMD has used signs to educate acceptable materials, Facebook and website both identify the list of materials. The SWMD has also had direct communication with elected officials where community drop-off sites are located to troubleshoot.

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.

b. Conclusions/Findings:

- Additional resources and content would help bolster the education already found on the website.
- Continue to promote Facebook and check all collateral to add Facebook logo and link.
- One-on-one communications has served well in connecting with audiences to convey messages.
- Contamination at drop-off continues to be an issue.

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 the SWMD's drop-off program are sent to the Putnam County Recycling Center. In 2012, Putnam County Recycling Center was established as a multi-stream MRF that accepts mixed metals, plastics, paper, cardboard and glass. The SWMD has found having a MRF operating in the county provides convenience and infrastructure to address the gaps that exist in residential curbside and commercial recycling. Recyclables not being processed in-district are managed at processing facilities in state.

In 2013, a baler was received which greatly improved operations and recycling revenue. As shown in the

table below the revenue more than doubled with the addition of the baler.

Year	Revenue
2013 (before baler)	\$14,611.56
2014 (after baler)	\$30,841.90
2015	\$24,483.01
2016	\$36,533.86
2017	\$54,669.45
2018	\$46,854.62

Mixed metals, plastics, paper, cardboard are baled and sold on the open market. Ohio EPA provided a grant to purchase the horizontal baler in 2013. In 2019, operations were moved to a different area of the building due to low ceilings.

Material Type	Estimated Annual Throughput Range (tons)
Paper	2,500-4,000
Plastics	1,700-2,000
Metals	2,100-2,800
Glass	450-650



Photo of sorting line at Recycling Center



Separated aluminum ready to be baled

Material collection is source separated, however some sorting at the MRF is needed to separate aluminum and steel. Steel is separated from aluminum with the use of a magnet on the sorting line. Plastic resins are collected together and baled together. One of the challenges with the current system is not being able to capitalize on recent plastic resin commodity price increases. Another challenge is finding an end market for the mixed PET and HDPE bale produced. Solutions to consider include:

- Adding additional sorters on the line to separate the plastics into various resins.
- Requiring the site monitors at the drop-off site to manually sort the plastics into separate containers.
- Creating a drive-thru drop-off in the MRF where site monitors are able to check the plastics would allow staff more multi-tasking capabilities. With this type of arrangement the MRF could add a second baler and improve efficiency and sorting.

Either of these solutions would allow the SWMD to produce a natural HDPE, colored HDPE, and PET bale.

Figure H-37 shows an average of MRF expenses from 2015 to 2020. Expenses include costs for capital and operations of the drop-off recycling sites and collecting recyclables from schools.

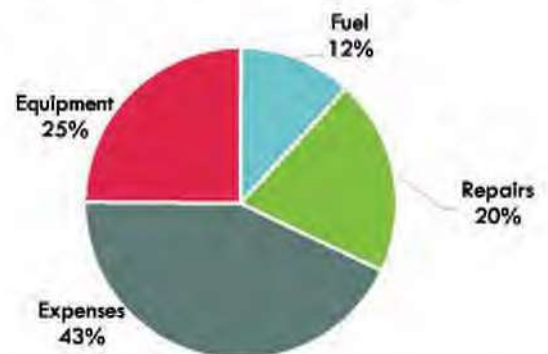
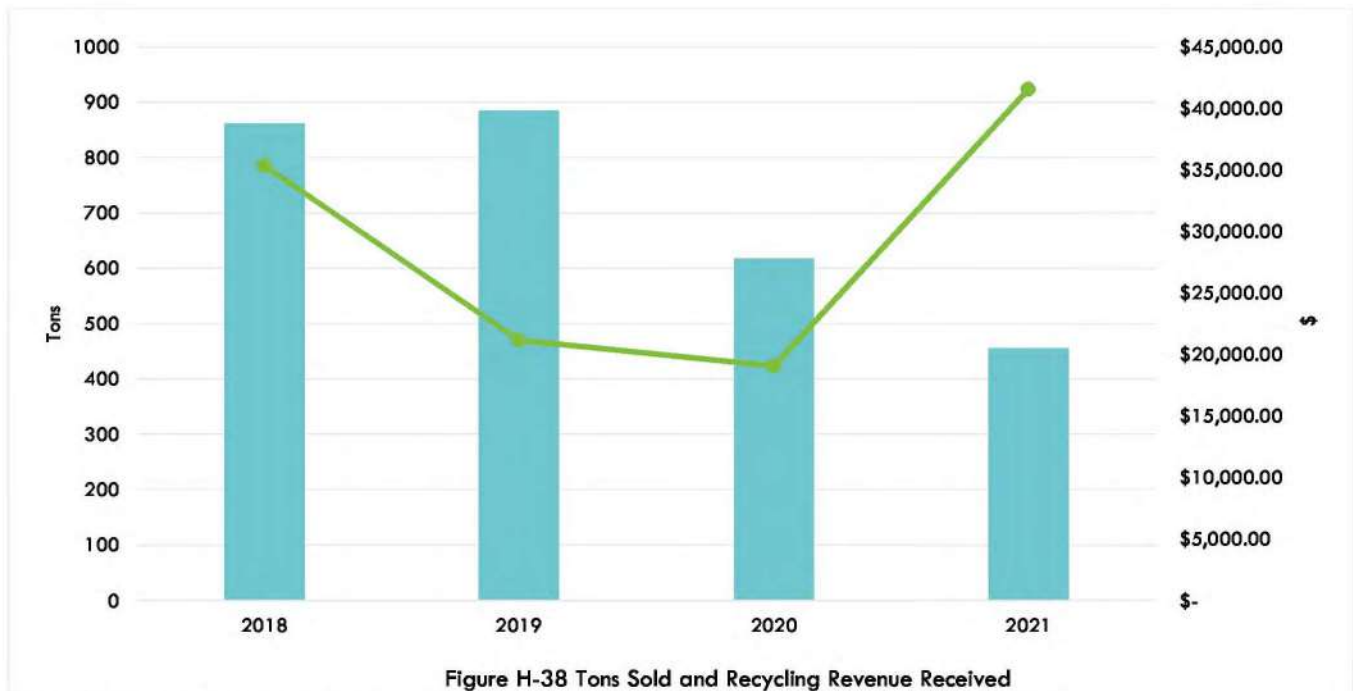


Figure H-37 Average MRF Expenses From 2015 to 2020 (excludes labor)

Figure H-37 shows general expenses (baler wire, oil, grease, gloves, etc.) account for about 43% of the costs. Capital purchases for equipment in 2015 and then in 2017 demonstrate 25% of the costs.

Revenue received from sales of the commodities dipped in 2019 and 2020, attributable to decreased commodity prices in metals, cardboard, and paper. Also, in 2020 with the Covid 19 pandemic the MRF processed less materials. Contributing factors include drop-off and MRF shutdown as well as virtual online school. Figure H-38 charts the tons sold and recycling revenue received. Recycling revenue shows an upturn in 2021, even though tonnages decreased is reflective of the higher commodity pricing for cardboard and paper. If the District could increase the volume of the materials greater revenues could be realized.



Note: Data shown in Figure H-35 represents a partial year for 2021 (January through October)

In northwest Ohio the landscape for processing recyclables to market is decentralized. As shown in Figure H-31 there are six MRFs in the surrounding counties, four multi stream and two single stream MRFs. The single stream MRFs are north of the District in Defiance County and Wood County. In this region, the majority of the MRFs are publicly owned with the only privately owned MRF in Defiance County owned and operated by Werlor Recycling.

The District is a good example of a county where businesses and private sector haulers compete for different subsets of the discard supply which encourages competition and helps to grow the local economy. It's no surprise this northwest region of rural counties operates in a decentralized system. The District has found having a MRF operating in the county provides convenience and infrastructure to address the gaps that exist in residential curbside and commercial recycling. With the number of MRFs in the region it could make sense to explore partnerships to reach economy of scale for materials and expand material products to include additional plastics or juice cartons.

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 49.6%.

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 list below is a quick summary of conclusions and findings found from the evaluation.

A full list of what the District could do includes:

- Continue to provide technical assistance to expanding curbside recycling in the communities.
- Work with communities to capture curbside recycling data.
- Implement additional education tactics to combat drop-off program contamination.
- Restructure drop-off program/service to accommodate staffing levels.
- Promote and educate residents about the values of waste minimization, repair and reuse.
- Target specific material such as paper and cardboard which are often generated in abundance in the commercial sector.
- Explore private sector partnerships and funding.
- Continue to apply for Ohio EPA grants to help businesses expand or implement recycling programs.
- Promote Ohio EPA's Material Marketplace.
- Maintain up-to-date contact information for staff managing the recycling program in hopes to achieve responses to surveys.
- 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 U.S. EPA'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 U.S. EPA's food hierarchy.
- Share and promote U.S. EPA's food recovery challenge.
- Bring regional partners together to address food waste infrastructure.
- 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.
- 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.
- Post more information about volume-based or PAYT systems on the website and highlight the District's assistance.
- Highlight how PAYT program works in Village of Ottawa as a case study.
- Conduct a public opinion survey in communities interested in PAYT to shed light on public attitudes.
- Offer PAYT assistance directly to those communities with recycling drop-offs.
- Offer alternative economic incentive program in the form of rebates to residents, businesses or communities to activate recycling behaviors.
- Add the list of tire and electronic recycling and disposal outlets on the website.
- Monitor how many tons of batteries are being collected annually to evaluate whether the retailer take-back program is remaining successful.
- Add more resources on why to dispose of Hard to Recycle materials properly and methods to avoid purchasing them in the first place on the District's webpage.
- Look for regional partnership solutions and strategies to share resources, and overcome challenges of transportation, low volume, processing and expense.
- Complete post-closure landfill care through the 30 years.
- Food waste processing is a gap that could be explored with neighboring districts. A regional facility could lessen financial burdens and be financially attractive but additional feasibility studies would need to be explored.
- Additional data needs to be collected and analyzed to determine if costs of organics collection is preventing the expansion of organics composting.
- Focus strategies to promote source reduction as well as food rescue and on-site/backyard composting options.
- Another option is to develop a regional stakeholder group to explore and attract organic processors to the region. There are successful models for public private partnerships in organic management.
- Provide online commercial and industrial survey capability, such as JotForm or another platform.
- Add additional resources and content to the webpage.
- Promote Facebook and check all collateral to add Facebook logo and link.
- Continue one-on-one communications with audiences to convey messages.
- Develop campaign to combat contamination.
- Make changes to drop-off program to help deter contamination

The list of actions does not commit the District to undertake every specific action. Strategies and actions to streamline operations and continue high diversion 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
Social Media Outreach	Increase social media presence and develop short videos
School Recycling Outreach	Find best arrangement for collecting recyclables at schools.

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 Infrastructure

Curbside Recycling Services

ID	Name	Start Date	End Date	Goal
Non-Subscription Curbside				
NSC1	Ottawa Village	ongoing	ongoing	1 and 2

The village provides weekly residential curbside collection to single and multi-family dwellings (up to about 4 units) through a contract with a private waste collection and recycling firm. In 2018, contractor was Republic Disposal Services and in 2019 switched to Werlor Recycling. Materials collected include Cardboard, Paper, Glass bottles and Jars, Plastics Bottles #1 and #2, scrap aluminum, beverage cans, and steel cans. In 2019, the program switched to curbside carts collected in every other week.

Ottawa Village is responsible for the implementation of the Ottawa Village curbside recycling program. The program is funded through the collection of taxes by residents. The village did not report volumes of recyclables.

Target for Next 5 Years: The SWMD will offer to meet with the Village to provide technical assistance and help with exploring options to keep the program operational.

ID	Name	Start Date	End Date	Goal
Subscription Curbside				
SC1	Glandorf Village	ongoing	ongoing	1 and 2

The Village of Glandorf provides subscription curbside recycling. The Village of Glandorf's program is paid by residents who request the service on a quarterly basis. The residents pay the provider of services directly. Materials collected include Cardboard, Paper, Glass bottles and Jars, Plastics Bottles #1 and #2, scrap aluminum, beverage cans, and steel cans. Recyclables are collected in curbside bins.

The village did not report volumes of recyclables.

Target for Next 5 Years: The SWMD will offer to meet with the Village to provide technical assistance and help with exploring options to keep the program operational.

Drop-off Recycling Locations

ID	Name	Start Date	End Date	Goal
Full-Time and Part-Time Rural Drop				
FTR1	Ottawa Village, 24 hours by Fairground (1205 E 2 nd Street Ottawa, OH 45875)	ongoing	ongoing	1 and 2
PTR2	Columbus Grove/Pleasant Township (VFW Lot 218 E. Sycamore Columbus Grove, OH 45830)	unknown	2020	1 and 2
PTR3	Continental Village & Monroe Twp (508 W Elm Street Continental, OH 45831)	1996	2020	1 and 2
PTR4	Fort Jennings Village / Jennings Township (Park)	1996	2020	1 and 2
PTR5	Kalida Village / Union Township (St Rt 114, Kalida Village Garage//Union Township Building)	1996	2020	1 and 2
PTR6	Leipsic / Liberty and Van Buren Townships (343 S Belmore Street Leipsic, OH 45856)	1996	2020	1 and 2
PTR7	Ottoville Village / Monterey Township (Water Tower Lot)	1996	2020	1 and 2
FTR8	Nelson Manufacturing (6488 State Route 224 Ottawa, OH 45875)	1996	ongoing	1 and 2

Recyclables collected include Cardboard, Paper, Plastics Bottles #1-#2, scrap aluminum, beverage cans, steel cans. Materials are collected source separated. Glass is only collected at the Ottawa Village location and this location was available 24/7 for continual access.

Materials collected at the Nelson Manufacturing location are collected source separated. The Nelson Manufacturing site is a private location for their business use only. The District provides the collection container but is having conversations with Nelson Manufacturing about purchasing their own containers.

The full-time Ottawa Village location is available 40 hours a week. The part-time mobile locations are available for 3 or 3 and ½ hours at a regularly scheduled time each month.



Collection bins are 28-yard containers and owned by the District. Recyclables are collected by District staff and taken to the Putnam County Solid Waste District Recycling Center. In 2021 a new collection truck was purchased which will minimize repairs and help collection efficiency. Processing and marketing of the drop-off program and recyclables is also performed by District staff. Processing includes sorting, baling, and brokering to end markets.

Challenges with the Ottawa Village drop-off site is the contamination of non-recyclables being dropped in the containers. In 2017, the District poured a concrete slab for the containers, added cameras, worked with law enforcement to give warnings, and worked with prosecutor's office to issue written warning letters.

Having 24/7 access is great for the residents but has resulted in higher contamination levels.

Contamination requires more labor and sorting at the District Recycling Center. When COVID-19 pandemic disrupted the state with stay-at-home orders and social distancing protocols in 2020, the District faced the challenge of shortages in staffing to be able to collect and process the high contaminated recyclables. When the District closed the drop-off locations for about a month, March to April, to set and implement social distancing precautions the entire drop-off system was scrutinized and evaluated. With reduced staffing, the decision was made to only open the Ottawa location. When the Ottawa location re-opened hours were restricted to focus on education to combat the high contamination at the drop-off. The District utilized Facebook, verbal announcements, and the webpage to direct residents to the Ottawa Village drop-off location.

The Ottawa location is serving as the hub for drop-off recyclables and is staff monitored. Handouts as well as verbal education on accepted materials is one-to-one interaction. Full time monitors check the materials being dropped off and assist with placing materials in the proper bins. Unacceptable materials are rejected. The site is paved, camera

monitored, fenced, and hours are restricted. Using this change of operations, the District Recycling Center visually measured less trash and unacceptable recyclable materials with full-time monitoring.



These photos of the Ottawa Recycling Drop-off site show well marked drop-off containers, a site attendant monitoring the recyclables, and easy access with and paved concrete. Not shown is the gated access.

A challenge with full-time monitoring is the downtime for staff in-between residents dropping off material. This drop-off is located at the same address as the District Recycling Center however it's on the opposite side of the property. If this were re-located closer to the District Recycling Center, it would allow staff to multi-task and lead to better recycling center operational efficiencies. The District has been discussing the option of improvements / modifications to the District Recycling Center that would allow for a drive-thru drop-off. This drive-thru concept would work hand in hand with sorting improvements being pursued at the District Recycling Center.

If the County can receive a grant for a baler to upgrade and improve sorting, the County will provide any building inspections, electrical inspections/connections, a new overhead door, reconstruct the driveway access and road, and relocate the residential drop-off (including new concrete and signs). This re-location will provide better accommodations for the drop-off site monitor because the building has heat and plumbing. This modification should assist with employee retention, as staff have expressed concern about down time in between customers, facing extreme heat and cold in the public drop off area, and desire to assist fellow staff with tasks in the Recycling Center. With increased capacity capabilities and proper recycling education, the County can consider returning satellite sites to the seven locations that were removed in 2020.

Without the capital grant funds for this project, the District will not be able to move forward. Re-location modifications will be implemented using the County's general fund and not the District fund. Operationally, the County is committed

to creating new jobs to operate the equipment via the County's general fund to hire 2 part-time employees.

Tonnages recovered increased till 2016 and have minimally fluctuated. In 2020 the tonnages dropped by about 200 tons. This is a direct result of the COVID 19 pandemic and shelter in place orders which shut down the Recycling Center. Additionally, schools closed early and when fall session began schools were virtual online learning.

Program	2014	2015	2016	2017	2018	2019	2020
Putnam County Solid Waste District Recycling Center	709	817	872	868	861	884	618

Target for Next 5 Years: One of the priority areas is optimizing the drop-off locations to combat contamination and help deal with the staffing shortage. The Ottawa site was improved in 2017 and when monitored in 2021 noticed less contamination. The sorting technology at the District Recycling Center relies on manual labor and when there is less contamination the quality of bales produced is higher. In 2021 and 2022, the Ottawa location will be the only drop-off location available and will be open 9am-5pm Monday thru Friday. Saturday hours are planned to be added to provide more availability. The SWMD will target two Saturdays a month for 3-hour time slots. Available hours will be updated on the website, newspaper, and Facebook. This site will continue through the planning period. The Nelson Manufacturing location will also continue through the planning period.

The District will apply for an Ohio EPA Community Development Grant in 2022 seeking assistance with purchasing a baler. If the County can receive a grant for a baler to upgrade and improve sorting, the County will relocate the Ottawa residential drop-off (including new concrete and signs) to become a drive-thru drop-off. This re-location will provide better accommodations for the drop-off site monitor and should assist with employee retention, multi-tasking in the Recycling Center. Also, with increased capacity capabilities and proper recycling education, the District can consider returning satellite sites to the seven locations that were removed in 2020.

As noted above, year 2020 tonnages declined, and year 2021 tonnages are trending equally as low. Cardboard and paper are two noticeably lower materials collected and sold. Two years of declined tonnages under the circumstances is not adequate data to determine if the lower tonnages will continue with one drop-off servicing the county. Tonnages will continue to be tracked to assess trends and whether there is a need for additional drop-offs throughout the county.

Other Residential Recycling Programs

Name	Start Date	End Date	Goal
Drop-off Recycling Initiatives	2016	ongoing	Goal 2

The SWMD planned to provide free collection or free processing for any new community supported drop-offs during the 2016 Plan. This initiative set out to add more recycling drop-off access to communities throughout the County.

In 2017, 2018 and 2019, conversations between the District and the Village of Miller City explored adding a mobile drop-off. The main issue with adding more sites is the cost of service to the SWMD. Additional containers are needed as well as staffing to collect additional drop-offs. The SWMD did not have budget (labor and equipment) to expand drop-off service to other communities. Exploring partnerships with communities to cost share service operations, such as purchase of the containers, are opportunities.

Target for Next 5 Years: If a community partnership can be arranged the SWMD can process recyclables. Partnerships are not off the table and conversations with communities will be explored through the planning period to expand drop-off collection.

Name	Start Date	End Date	Goal
Village of Pandora Infrastructure	2016	ongoing	Goal 2

The District has been initiating conversations with the Village of Pandora since 2016 to purchase containers to add

mobile drop-off recycling and/or to implement curbside recycling. These conversations extended to include Pandora school.

In 2016, the Village of Pandora decided on mobile drop-off program for the residents. The SWMD applied for an Ohio EPA Community Grant to assist the village with recycling service but was not awarded the grant. The program was not implemented.

In 2017, the SWMD continued conversations with Village of Pandora to explore cost effective methods to provide more convenient recycling to the residents.

In 2018, the SWMD discussed a partnership with the Village where they would provide mobile bins and the SWMD would provide collection and processing service. No movement beyond discussions progressed. These same conversations continued into 2019.

Target for Next 5 Years: If a community partnership can be arranged the SWMD can process recyclables. Partnerships are not off the table and conversations with communities will be explored through the planning period. The District will continue to evaluate the costs and program design with the Village. Program costs such as containers, collection, processing, and marketing of the recyclables will be vetted. Even if a grant is received the grant match must be met plus the program needs ambassadors and outreach.

Name	Start Date	End Date	Goal
Curbside Recycling Initiatives	2016	ongoing	Goal 2

New curbside programs need promotion, education and awareness. The District will work with any community starting a new curbside program to design an education campaign. At a minimum, the education and awareness for this program will include a roll-out education in the form of door hangers, videos, and promotional items. Additional strategies/tasks will be developed with the community recycling ambassador.

The District will assist interested communities to incorporate pay-as-you-throw into solid waste collection systems by linking interested communities with information and technical assistance to assist in preparing bid specifications and contracts to implement pay-as-you-throw.

The District had conversations with every village from 2016 through 2019 and no new curbside programs have been initiated since the 2016 Plan. One of the major challenges for curbside recycling is the cost of service in rural areas with low population densities.

Target for Next 5 Years: The SWMD will work with communities looking to start a new curbside program to apply for Ohio EPA Community Development Grants. One-on-one outreach to communities will continue through the planning period. A target of contacting at least one community each year is established.

Commercial/Institutional Sector Reduction and Recycling Programs

Name	Start Date	End Date	Goal
School Recycling Mobile Paper & OCC	ongoing	ongoing	Goal 2

All schools are highly encouraged to recycle. Prior to 2015 there were about 7 schools participating. This program is mobile with drop-off bins being rotated to schools to provide once a month collection or supplemental as needed. While all schools were encouraged to recycle not all showed interest.

Schools serviced include:

School	2016	2017	2018	2019
Columbus Grove	X	X	X	X
Continental	X	X	X	X
Fort Jennings	X	X	X	X
Kalida	X			

Miller City	X	X	X	X
Ottoville	X	X	X	X

Each school is responsible for setting up and managing its in-school recycling program and to get the materials to the collection bins.

There are costs associated with providing collection services and processing materials that are passed on to schools as a cost saving. Unfortunately, not all schools can be serviced regularly with this arrangement. The District Recycling Center does not have methods to individually weigh drop-off bins to determine how much material is coming from this program. It was assumed very little volume was being collected from the school programs so the cost for collection services seemed unfeasible to continue. The SWMD stopped the monthly mobile service in 2020. Some of the schools continued recycling by bringing their paper and cardboard to the District Recycling Center.

Target for Next 5 Years: In 2020 and 2021, the SWMD measured a noticeable decrease in paper and cardboard sold. From 2019 to 2020 the paper total declined 43%. COVID 19 shut down schools so ascertaining whether the decline is COVID related or due to lack of service is not clear. It is assumed both play a role in the decreased volume.

The SWMD will monitor cardboard and paper volumes in 2022. If they volumes remain below 200 tons in 2023, the SWMD will re-vamp the school mobile collection to bring back service to the schools. The outreach priority, described in Appendix L, will help to drive bringing service back. The SWMD will work with one school at a time to (see Appendix L for specifics on outreach) to bring back the mobile collection service with the goal to increase volumes recycled and maximize revenues. Also, to maximize the materials being diverted the SWMD will explore what internal procedural actions custodial staff, students or teachers could take to ensure paper and cardboard are being recycled (see Appendix L). The SWMD will be looking for a cost share type of arrangement. Schools participating in recycling should see a cost savings on trash disposal. The SWMD will assist in calculating the cost savings diversion is expected to see and will determine a cost for recycling services provided by the SWMD to help offset the cost for recycling services. The goal is to still provide a cost savings to the schools.

Receiving an Ohio EPA Community Grant for equipment will escalate the District in adding paper drop-offs at schools.

Name	Start Date	End Date	Goal
School Recycling Permanent Paper & OCC	ongoing	ongoing	Goal 2

For the months school is in session, Leipsic School has a permanent bin to collect paper & cardboard. Leipsic St. Mary's Catholic School also puts their recyclables in this bin as well.

Target for Next 5 Years: Collection service and processing will continue to be provided by the SWMD.

Name	Start Date	End Date	Goal
County Office Paper Recycling	ongoing	ongoing	Goal 2

Since 2001, the Putnam County Courthouse has implemented a program to collect paper in containers placed strategically around the courthouse. Office paper, aluminum, cardboard and plastic is collected by County personnel and taken to the permanent recycling drop-off location in Ottawa.

Target for Next 5 Years: Program will continue.

Name	Start Date	End Date	Goal
Special Event Outreach: Displays	ongoing	ongoing	Goal 5

In 2017, 2018 and 2019, outreach efforts included newsprint, flyers, TV, postcards, pencils, letter openers & pamphlets. The District's staff completed presentations each year at the Putnam County Fair, Conservation Days for

5th graders county-wide, the Senior Expo and learning day for Ottawa Glandorf 8th graders at their request at the recycling center. A talk was done at a couple Chamber Meetings and Kiwanis Meeting. If requested by groups such as 4-H or other school classes, the SWMD presented at those and provided materials/resources.

Target for Next 5 Years: The SWMD will provide displays for the County Fair and conduct presentations for at least one event a year.

Name	Start Date	End Date	Goal
Waste Assessments & Audits	2016	ongoing	4 and 5

The SWMD did not perform waste audits for any businesses from 2016 to 2021. The 2016 Plan, the SWMD set a goal to provide a "Do-It Yourself" Audit tool for county businesses to self-conduct a waste assessment. Other programs and assistance took precedence, and the toolkit was not developed.

In 2018, the SWMD assisted 2 businesses (Library and Midwest Classic) to set up recycling service.

Target for Next 5 Year: This next planning period the SWMD is placing focus to build a resource library of materials businesses can access on the website. In the first year of the planning period the SWMD will develop a "Do-It Yourself" Audit Kit to include instructions, walk through profile, audit worksheet and quantifying worksheet. Once developed the toolkit will be added to the webpage. The SWMD will also provide a list of resources on the webpage directly targeted at businesses. A dedicated business webpage will be added which will include: the waste audit toolkit, links to Ohio EPA grants and Ohio EPA's Material Marketplace, a workplace recycling guide, and annual recycling survey. To inform businesses about the resources, the SWMD will post on Facebook, and direct businesses to the website to complete their annual survey. Ongoing Facebook posts throughout the year will directly target the business audience.

Name	Start Date	End Date	Goal
Glass Recycling Program	2014	ongoing	2

Since the start the Glass Recycling Program has been a success. Targeting high-volume generators such as restaurants and bars the SWMD has been able to encourage establishments to recycle glass. Several restaurants and bars generate enough volume that they use a permanent glass drop-off which is collected once a month. Others, call the District's recycle workers and arrange a drop-off container when they collect a large quantity on-site. Glass is delivered to the District Recycling Center and sold to a processor.

Volumes of glass sold since 2018 has declined. The COVID 19 pandemic is a direct result of the drop in 2020.

Program	2016	2017	2018	2019	2020
Glass Recycling Program	150.68	178.17	171.43	163.24	107.15

Target for Next 5 Year: The SWMD will continue to provide the service to the restaurants and bars. The SWMD will look to expand bar and restaurant collection if operations can support expansion. Direct outreach solicitation by the SWMD to local businesses will continue to recycle glass.

Industrial Sector Reduction and Recycling Programs

Name	Start Date	End Date	Goal
Waste Assessments & Audits	2016	ongoing	4 and 5

The SWMD did not perform waste audits for any businesses from 2016 to 2021.

In manufacturing there are two types of recyclable streams: process and employee generated. Scrap materials and byproducts from manufacturing processes have value and thus more incentive to efficiently manage the range

of materials generated for recycling. Over the years, there has been trend of organizations trying to reach zero to waste landfill goals. Because of the potential for specialized waste streams, the SWMD assumes they will be able to assist very little with waste audits which is why developing a "Do-It-Yourself" audit tool is valuable. Industries will be able to conduct self-audits on their specialized waste streams. Should an industry need expertise beyond the SWMD's capabilities the SWMD will refer them to companies that offer the type of service.

Employee generated waste is typically bathroom paper towels, bottles, cans, paper, and lunchroom waste. Some of these materials can be reduced or recycled. Recycling collected via single stream and through services provided by various haulers operating in the SWMD.

Target for Next 5 Year: Add the "Do-It-Yourself" toolkit to the website. Create Facebook posts to inform about the available resource. Offer to help businesses complete an audit.

Name	Start Date	End Date	Goal
Technical Assistance	2022	ongoing	4 and 5

Manufacturing is a principal industry in Putnam County making up about 31% of the county's employment. The SWMD has historically provided technical assistance to the industrial sector and has a strong informal relationship with this sector. The SWMD believes this relationship is one of the reasons why the recycling survey averaged 50% response rates over the past 6 years. In fact, most of the recycling programs implemented by the industrial sector were spearheaded by those entities with no intervention from the SWMD.

Outreach is one-on-one. In 2018 the SWMD assisted 4 businesses (Ottawa Feed & Grain, Palpac, Nelsons, and Duraline Medical) with their recycling programs. The League of Ohio Sportsmen awarded the SWMD a litter prevention and recycling award in February 2018.

Much of the technical assistance has come in the form of assisting industries with grant applications. In 2018, the SWMD partnered with Advanced Drainage Systems to apply for a grant to expand a manufacturing facility in the County. Through one-on-one conversations the SWMD informs the industrial sector about the SWMD's resources and ability to process recyclables. Through these engagements arrangements have been made for the industry to drop-off loads of recyclables at the District Recycling Center for processing.

Target for Next 5 Years: In the first year of the planning period business resource materials will be added to the website to include: link to Ohio EPA Material Marketplace, Do-It-Yourself Audit Kit, recycling at work guide, and annual recycling survey. Throughout the planning period Facebook will be used to directly engage and align posts to businesses at least 4 times a year. As one-on-one conversations with businesses occur, the SWMD will continue to communicate the capabilities of the District Recycling Center to process materials. As needed the SWMD will continue to assist businesses with grant applications.

Name	Start Date	End Date	Goal
Promote Ohio EPA Material Marketplace	2022	ongoing	4 and 5

Ohio EPA Material Marketplace is a free online platform allowing businesses and organizations to connect and find reuse and recycling solutions for waste and by-product materials. As a resource to businesses the SWMD will add this link to the website making it readily available. The SWMD will also promote the Marketplace on Facebook and to businesses when the SWMD provides technical assistance.

Restricted/Difficult to Manage Wastes

Electronic Equipment

Name	Start Date	End Date	Goal
Electronics Collection	2008	ongoing	6

Residential electronics are collected at Recycle Day. The SWMD organizes the recycling vendors, volunteers,

disposal services, and day of activities. Donations allow the SWMD the ability to provide collection of a wide range of materials. Recycle Day is a one-day event that typically collects: medication, computers, TVs, small electronics, pharmaceuticals, LABs, household batteries, household paints, household light bulbs, mercury, appliances and textiles.

Annual collection volumes received from 2017 and 2019 include:

Program	2017	2018	2019
Recycle Day - Electronics	2.50	2.16	4.72
Recycle Day - HHW	1.95	2.42	3.66
Recycle Day - Batteries	0.16	0.24	0.50

Target for Next 5 Years: Continue to offer Recycle Day to collect electronics through the planning period. The SWMD will add the list of electronic recycling and disposal outlets on the website.

Household Hazardous Waste

Name	Start Date	End Date	Goal
HHW Collection	ongoing	ongoing	6

HHW is collected at Recycle Day. See Electronics Collection program above for additional program details and volumes collected. The SWMD is seeing an increase in the volume of HHW collected annually. Which also correlates to the rising costs for hosting the one-day event. 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.

Target for Next 5 Years: Continue to offer Recycle Day to collect HHW through the planning period. Add more resources on safe methods for reduce HHW and avoid purchasing them in the first place on the District's webpage.

Lead-Acid Batteries

Name	Start Date	End Date	Goal
Battery Collection	ongoing	ongoing	6

The private enterprise system for collecting batteries seems to be working successfully. Virtually all automotive supply stores and repair shops accept old batteries when new ones are purchased. Most charge a substantial deposit when a new battery is purchased. At least one scrap yard buys lead acid batteries.

Batteries are also collected at Recycle Day. See Electronics Collection program above for additional program details and volumes collected.

Target for Next 5 Years: Continue to offer Recycle Day to collect HHW through the planning period.

Scrap Tires

Name	Start Date	End Date	Goal
Scrap Tire Collection	2009	ongoing	6

Putnam County Soil and Water Conservation holds special tire collection events. Events were held in 2012, 2015, and 2018. In the past, the SWMD has not requested specific event data as to the number of tires collected or participants. There are several other outlets for proper management of scrap tires in the SWMD. The SWMD maintains a list of companies that accept used tires on the website.

Target for Next 5 Years: Promote the Soil and Water Conservation collection events and scrap tire outlets on Facebook.

Yard Waste

Name	Start Date	End Date	Goal
Public and Private Composting Facilities	ongoing	ongoing	6

As of 2018 there are 4 registered Class IV compost facilities. All of which are publicly owned and operated. The SWMD does not provide funding or assistance to operate these facilities. These facilities are registered with Ohio EPA and report yard waste collected to Ohio EPA. The SWMD annually collects that data, compiles, and submits in the Annual District Report.

In general, Putnam County is a very agrarian county. It is commonplace for residents to manage their yard waste and food scraps with backyard compost.

Economic Incentives

Name	Start Date	End Date	Goal
"Buy Recycled" Campaign	ongoing	ongoing	7

Strong markets support the recycling system. The District purchases and encourages government agencies to purchase recycled content materials whenever suitable materials at competitive prices are available. "Buy Recycled" message is integrated into programs and activities and in presentations made to the public. It was also included in the information provided at the Putnam County Fair, Conservation Days and The Senior Expo in 2016 through 2019.

Target for Next 5 Years: Continue to promote Buy Recycled.

Name	Start Date	End Date	Goal
List of Businesses that sell recycled products (SWCD partnership)	ongoing	ongoing	7

From 2016 to 2020 the SWMD promoted businesses that sell recycled products. One of those businesses recommended is Advanced Drainage Systems/Greenline. In 2018, the SWMD helped secure a grant for Advanced Drainage Systems/Greenline.

Target for Next 5 Years: No planned changes. The SWMD will continue to provide assistance.

Facility Ownership

Name	Start Date	End Date	Goal
Putnam County Landfill post-closure activities	ongoing	ongoing	none

The Putnam County landfill is closed but needs maintenance through 2032. This involves costs for engineering's, leachate collection, water testing, well monitoring, new wells dug, leachate treatment, gas well monitoring, reporting procedures and costs related to the Putnam County Department of Health. This program is implemented by the District. The on-going costs through the remaining closure period estimated to be \$1.7 million. A certain portion of the cost of this program will continue to be implemented by the Putnam County Solid Waste management District throughout 2032.

Name	Start Date	End Date	Goal
Putnam County District Recycling Center	2013	ongoing	2

Residents in the county have access to recycling services through the Putnam County Solid Waste District Recycling Center. Centrally located at 1206 E 2nd Street Ottawa, OH 45875, residents can recycle glass (food & beverage container clear or colored), plastic bottles #1-2, paper including newspaper, glossy paper, magazines,

copy/construction paper, envelopes, phone books, and workbooks, cardboard, scrap aluminum, beverage cans and steel cans. Currently the recycling center is open Monday-Friday 9 AM to 5 PM, with occasional Saturday hours. The hours of operation and materials that can be recycled are maintained on the District's webpage and FaceBook.

Recyclables brought into the Recycling Center are placed in separate bunkers until they are processed. Processing is a single-sort line that feeds directly into a baler. The Recycling Center does not have scales. All materials sold are actual quantities recycled and based on bales sold.

The SWMD is constantly evaluating improvements to help operations, increase efficiency, and maximize revenues. In 2013, a baler was purchased (with the assistance of an Ohio EPA grant) which increased the revenue received as more material was able to be sold and for higher commodity pricing. In 2017, a skid steer was purchased. The next improvement required moving the physical location of operations. The building height was limiting processing operations so in 2019, the Recycling Center moved operations to a different area. On the same property but located in a new building with higher ceilings. A portable ramp and magnet to separate steel from aluminum was also purchased. Then in 2021, the SWMD purchased a new truck to use in collecting and moving drop-off bins and equipment.

At collection recyclables are source separated which works best for the way the Recycling Center is set up to process. With a manual sorting line, any separation that occurs at the front end helps with manual labor costs to sort once the materials are at the Recycling Center. End markets purchase recyclables that are separated into specific commodity streams. However, with the source separated collection some recyclables need to be further separated before marketed to end markets. Metals are collected together thus sorting out steel from aluminum is a necessary step. The purchase of the magnet adds a bit of automation to the processing which reduces the labor and time needed to separate steel from aluminum. Adding another baler would increase efficiency time. With the single baler, currently one of the materials is handled twice. The materials are separated from each other at the same time and as one material is sorted out it feeds the baler but the other material is directed back into the bunker. A second baler would allow both to be baled at the same time.

The SWMD is currently collecting plastic resins #1 and #2 together and baling a mixed bale. This mixed bale has been challenging to find end markets that will take it. In this next planning period, the SWMD will be looking at various methods to separate the two resins. Suggested changes to research: having the drop-off site monitor separate into different bins, adding more labor to the sort line (which will require changing on-site practices so that hiring additional labor is not needed), or adding additional drop-off bins and having the residents separate. Separating the resins will not only be easier to market but will also capitalize on recent plastic resin commodity price increases. The end goal is to produce separate natural HDPE, colored HDPE, and PET bales.

Additionally, public-private partnerships can work together to provide infrastructure related 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 SWMD looks towards the future, keeping options open for public-private partnerships may provide opportunities for diversion of these materials. The SWMD will research any public-private partnerships, where it makes sense, to develop infrastructure to support or expand diversion (reuse, reduce, recycle, and compost).

Target for Next 5 Years: Continue to improve operations at the District Recycling Center with equipment capital purchases, ongoing maintenance, and constant evaluation for efficiencies. This includes finding a solution to separate plastics.

The District will apply for an Ohio EPA Community Development Grant in 2022 seeking assistance with purchasing a baler. With this grant the opportunity to bale paper because of the two baler efficiencies is possible.

With the installation of a second sortation system, processing capacity will, at minimum, double. This second line will allow for exclusive use of the existing baler for plastics, while processing all other materials on the new system. As plastics #1 and #2 are collected together, the manual sorting process to separate #1 plastics from #2 plastics, and remove all other resins is labor intensive and time consuming. With the exclusive use of the existing baler for

plastics, other materials will no longer be held up by the extra time plastics require. Additionally, #2 plastics will be able to be separated by natural and colored material which will open doors to new markets and potential increased revenue. Without the capital grant funds for this project, the equipment could not be funded. Operationally, the County is committed to creating new jobs to operate the equipment via the County's general fund to hire 2 part-time employees.

Data Collection

Name	Start Date	End Date	Goal
Commercial/Industrial Surveys	ongoing	ongoing	2

Annual surveying of residential, commercial and industrial recycling, waste reduction, and yard waste composting practices. Surveys to brokers, processors, and solid waste haulers are also conducted. To streamline the process, priority has been placed on obtaining responses from the largest businesses - first and past responders, second.

Planning Period Changes: Continue to focus on obtaining response from largest businesses first and past responders second.

Effective December 1, 2020, the 2020 State Plan eliminated the industrial recycling goal where SWMD's demonstrate 66% diversion in the industrial sector. Because of this change the SWMD no longer needs to survey industrial businesses to demonstrate compliance with the industrial recycling goal. The SWMD 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 District is choosing to achieve Goal 2 of the 2020 State Plan and is thus omitting this demonstration from the 2022 Plan.

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

The SWMD is demonstrating compliance with Goal 2.

Goal 2: Waste Reduction and Recycling Rates

The SWMD shall reduce and recycle at least 25% 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	33,780	11,795	9,632	21,427	55.05%	1.91
2019	33,861	11,429	10,739	22,168	51.56%	1.85
2020	33,793	11,438	9,635	21,073	54.28%	1.85
2021	33,726	11,486	9,616	21,102	54.43%	1.87
2022	33,658	11,500	9,597	21,097	54.51%	1.87
2023	33,591	11,515	9,578	21,093	54.59%	1.88
2024	33,524	11,530	9,559	21,089	54.68%	1.88
2025	33,457	11,754	9,539	21,293	55.20%	1.92
2026	33,390	11,769	9,520	21,290	55.28%	1.93
2027	33,323	11,785	9,501	21,287	55.37%	1.94
2028	33,256	11,785	9,482	21,268	55.41%	1.94
2029	33,190	11,785	9,463	21,248	55.46%	1.95
2030	33,123	11,785	9,444	21,229	55.51%	1.95
2031	33,057	11,785	9,425	21,210	55.56%	1.95
2032	32,991	11,785	9,407	21,191	55.61%	1.96
2033	32,925	11,785	9,388	21,172	55.66%	1.96
2034	32,859	11,785	9,369	21,154	55.71%	1.97
2035	32,794	11,784	9,350	21,135	55.76%	1.97
2036	32,728	11,784	9,332	21,116	55.81%	1.97

Source:

Population – Appendix C, Table C-1

Recycled – Appendix E, Table E-4 and E-5

Disposed – Appendix D, Table D-3

Sample Calculations:

Total Generated = Recycled + Disposed

Waste Reduction & Recycling Rate = Recycled / Total Generated

Per Capita Waste Reduction & Recycling Rate = (Recycled x 2000 lbs/ton) / (Population x 365 days)

The District achieved 55% residential/commercial waste reduction and recycling rate in the reference year surpassing the 25% state goal. As shown in Table K-1, the District demonstrates It will continue to meet or exceed the 25% residential/commercial waste reduction and recycling rate goal.

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	209,244	2,577		211,821	98.78%
2019	190,773	1,033		191,806	99.46%
2020	194,589	1,033		195,622	99.47%
2021	198,481	1,033		199,514	99.48%
2022	202,450	1,033		203,483	99.49%
2023	206,499	1,033		207,532	99.50%
2024	210,629	1,033		211,662	99.51%
2025	214,842	1,033		215,875	99.52%
2026	219,139	1,033		220,172	99.53%
2027	223,521	1,033		224,554	99.54%
2028	223,521	1,033		224,554	99.54%
2029	223,521	1,033		224,554	99.54%
2030	223,521	1,033		224,554	99.54%
2031	223,521	1,033		224,554	99.54%
2032	223,521	1,033		224,554	99.54%
2033	223,521	1,033		224,554	99.54%
2034	223,521	1,033		224,554	99.54%
2035	223,521	1,033		224,554	99.54%
2036	223,521	1,033		224,554	99.54%

Sources:

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

Adoption of the 2020 State Plan removed the 66% industrial reduction and recycling rate goal. As shown in Table K-2, the District demonstrates diversion rates over 98%.

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	221,040	12,208	233,248	94.77%
2019	202,202	11,772	213,974	94.50%
2020	206,027	10,668	216,695	95.08%
2021	209,966	10,649	220,615	95.17%
2022	213,950	10,630	224,580	95.27%
2023	218,014	10,611	228,625	95.36%
2024	222,160	10,592	232,751	95.45%

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2025	226,595	10,572	237,168	95.54%
2026	230,908	10,553	241,461	95.63%
2027	235,307	10,534	245,841	95.72%
2028	235,307	10,515	245,822	95.72%
2029	235,307	10,496	245,803	95.73%
2030	235,306	10,477	245,784	95.74%
2031	235,306	10,458	245,765	95.74%
2032	235,306	10,440	245,746	95.75%
2033	235,306	10,421	245,727	95.76%
2034	235,306	10,402	245,708	95.77%
2035	235,306	10,383	245,689	95.77%
2036	235,306	10,365	245,670	95.78%

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

Comparing actual 2018 data to projected in the 2015 Plan Update, demonstrates a slightly lower residential/commercial reduction and recycling percentage. The District noticed in 2018 both diversion and waste disposal data were factors. Both recycling reported from sources and composting data dipped lower than projected in the plan. Lower disposal tonnages helped to offset the impacts of lower recovery and maintain the reduction and recycling rate.

Industrial reduction and recycling percentage projected in the 2015 Plan Update is the roughly equal to the actual 2018 data, even though the responding industries and recovery data reported increased greatly from the 2015 Plan Update projections.

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

A. Minimum Required Education Program

Name	Start Date	End Date	Goal
District Website	ongoing	ongoing	4

The SWMD maintains a website meeting the requirements prescribed by Goal 3 of the 2009 State Plan. Website was down in early 2020 for redevelopment and added security measures. Re-launch occurred in late 2020. The website is a resource which provides much of the information that residents and educational institutions would seek.

Target for Next 5 Years: During the re-launch some resources were lost. The SWMD is working to build the resources for residents and business on the website. Over this next planning period the District will continue to add content providing more information.

Content Suggestions:

- Add photos of acceptable materials in addition to the text.
- Add a list of community recycling opportunities.
- Add inventory of outlets for specific materials: HHW, scrap tire, electronics, etc.
- Add education and outreach resources.
- Add a Business Content page on the website with resources: "Do-It-Yourself" Audit, Steps to Better Business Recycling, Recycling business surveys, and third-party resource links (Ohio Materials Marketplace, Recycling and Litter Prevention grants, etc.)
- Add solid waste management plan.
- Add link to Facebook page.

The webpage is located on all collateral and business cards, as well as promoted on Facebook.

Infrastructure Inventory

Name	Start Date	End Date	Goal
Inventory	ongoing	ongoing	4

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.

Resource Guide

Name	Start Date	End Date	Goal
Webpage	ongoing	ongoing	4

The website is a resource guide. The SWMD updates at least annually.

Speaker/Presenter

Name	Start Date	End Date	Goal
SWMD Coordinator	ongoing	ongoing	4

The SWMD Coordinator is available for speaking engagements.

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); and
- 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
General Education & Outreach Efforts	X	X	X	X	X
School Recycling Outreach		X			
“Do It Yourself” Audit Tool			X	X	
Commercial/Institutional/Industrial Technical Assistance			X	X	
Conservation Days		X			
Social Media Outreach	X	X	X	X	X
Community Recycling Ambassadors	X				
HHW Education	X				
Backyard Composting Education	X				
Get Caught Recycling - Ottawa	X				
Lead-Acid Battery recycling outlet	X				

list

Scrap Tire recycling outlet list
PAYT Promotion & Technical Assistance

X

X

Name	Start Date	End Date	Goal
General Education & Outreach Efforts & Tracking	Ongoing	Ongoing	4

Audience: all target audience groups

The SWMD will use a multi-layered, multi-faceted marketing and outreach strategy that targets audiences by identifying who they are, where they live, and events going on in their lives. 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. These forms of advertising were used to alert residents about various recycling opportunities including drop-off sites, Recycle Day, and education programs.

Target for Next 5 Years:

- A few best practices the SWMD will incorporate in the next media advertising include: limited text with a visible call for action, direct to visit the website for more information, and when possible use images.

Specific tracking of general outreach efforts to include:

- Reporting progress of activities regularly to the public through media outlets.
- Maintaining record of display events – type, participation, and list of literature provided and published advertisements.
- Tracking of number of students, classes and youth organizations reached by education programs; nature of the education encounter or activity; number of waste reduction or recycling programs that were promoted.
- Tracking promotional item hand-outs.

Attend/present to the following yearly outreach events (at a minimum):

- Putnam County Fair
- Senior Expo
- Speaking engagements at 4-H, Kiwanis, Chamber, and other events/meetings.

At events such as the County Fair large audiences are reached. Frequency at these events helps to build brand awareness. In-person interaction answers any questions with direct knowledge. It's also a time when research is conducted. Through conversations the SWMD can gauge which topics and questions are more requested which will help guide social media posts.

Name	Start Date	End Date	Goal
"Do-It-Yourself Audit" tool	2017	Ongoing	4

Audience: Industries, Commercial & Institutional

The District intended to but did not develop or promote a free do-it-yourself audit tool.

Target for Next 5 Years: This is a great resource tool for businesses to complete an audit on their own. District staffing is not needed to actually conduct the audit but can assist businesses. The SWMD will be available to help interpret results and help with any other technical assistance and contracts. In this next planning period, the SWMD will develop an audit tool and promote. Literature about waste audit services will be handed out at in-person events and speaking engagements.

Name	Start Date	End Date	Goal
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Commercial/Institutional/Industrial Technical Assistance	Ongoing	Ongoing	4
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Audience: Commercial & Institutional

The District 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 provides consultation and resources to industries that contact it for technical assistance related to source reduction and recycling. It primarily aids in finding outlets for their waste materials. The District helps about one industrial business every other year.

In addition, each year the District is contacted by at least one school seeking assistance and or requesting service collection of recyclables. (See Outreach Priority for expanding school recycling.)

The District provides assistance to apply for Ohio EPA grants. Information about these grants and Ohio EPA's Material Marketplace are made available.

Target for Next 5 Years: Continue to offer assistance and promote the service on Facebook and with one-on-one engagements.

Name	Start Date	End Date	Goal
Conservation Days	Ongoing	Ongoing	4

Audience: School age 5th graders and Teachers

The District is a participant in the Soil and Water Conservation - Conservation Days event. This is a partnership with the schools, the District and Soil and Water Conservation. It's conducted over a two day period where all fifth grade students in the District attend as classes by school. There are ten different stations for the students. They participate in various activities and learn about different environmental aspects and issues such as recycling, water shed information and farming (among other concepts) by brief presentations as well as allowing the student to be hands on experiencing these activities. The program reaches about 500 students each year. The SWMD developed a specific presentation and demonstration for the students about recycling.

Target for Next 5 Years: The District will continue participating in these events.

Name	Start Date	End Date	Goal
Social Media	2016	Ongoing	4

Audience: All

Facebook launched in March 2020 and has already proven to be an excellent two-way communication tool. Costs are minimal and it provides the ability to send promotions to followers and track data. The SWMD has over 400 followers. Recycle Days are advertised and promoted on Facebook. With social media, such as Facebook, the District hopes to raise more awareness to its cause and keep the residents of the District apprised of events and information, such as disposal options and other locations that may not be offered in the District.

Target for Next 5 Years: The District will add an "Education Corner" on Facebook. Education Corner is a little bit more lengthy Facebook post with statistics and facts. It is designed to be a 2 or 3-part series over a course of the month. The posts also ask for an action response from followers.

Specific goals for achieving success with social media are: posting frequently to meet audience needs, post useful, fun and interesting ideas or topics or questions (about 80% of the time), and post promotions (about 20% of the time). Postings will cover local SWMD recycling, reuse and reduction events, list resources, and will also include state and national recycling topics.

The number of campaigns a year will be recorded, the message will be recorded, and the number of promotional items distributed will be tracked. Social media campaigns will follow and track: traffic stats, number of shares, measure for fan growth, average number of likes and comments, and the ability to maintain conversations. Below outlines an example posting schedule:

Year and Quarter	Prompts – post 1x a week throughout the quarter
2021 – Q1	Reduce Your HHW
2021 – Q2	Reduce Food Waste
2021 – Q3	Recycling Participation
2021 – Q4	Recycle Right
2022 – Q1	True Costs of Recycling
2022 – Q2	What happens when recyclables leave the curb
2022 – Q3	Sustainable Holidays
2022 – Q4	Topics in Recycling: Paper / additional topics..(cardboard, Styrofoam, glass, E-Waste, etc.

Name	Start Date	End Date	Goal
Community Recycling Ambassadors	2016	Ongoing	4

Audience: Residents

The ambassador network was designed with the intent the SWMD does not have a full time education coordinator. It's a network of individuals or groups to implement outreach and marketing promoting residential recycling infrastructure in their communities. The SWMD identifies individuals or groups that can distribute educational materials to people who use the new or existing curbside and drop-off programs. To do this the SWMD connects with local leaders in the communities to aid the District in identifying good candidates, if necessary.

For existing curbside programs, the District collaborates with the Community Recycling Ambassador to create a community-based social marketing plan for his/her community. With help from the District, the ambassador will select behaviors to change, identifying the barriers and benefits associated with the chosen behavior, design a strategy that utilizes behavior-change tools and pilot the strategy with a small segment of the community and, at least, evaluate the impact. Glandorf and Ottawa Villages do not yet have Community Ambassadors, so this type of outreach was not active.

When a new drop-off program is established, for the first couple of months, the Community Recycling Ambassador will periodically spend time at the drop-off location to interact with visitors that come to use the drop-off. The ambassador is charged with handing out educational materials to the visitors, monitor what people are placing in the drop-off containers, and help instruct visitors on the proper use of the drop-offs. The SWMD connect with Community Recycling Ambassadors assigning six of the drop-off's with a Community Recycling Ambassador.

Target for Next 5 Years: The full-time drop-off in Ottawa will use a site monitor that will engage with each user to check recyclables are acceptable and if not explain what is acceptable and provide a list of materials. This is a time consuming and labor-intensive outreach method but is the most effective type of outreach. The goal is to educate residents on what the Recycling Center can process and reduce the materials that cannot be processed. The site monitors can also direct the users to Facebook and website pages for more information and resources. The SWMD will continue to look for curbside Community Recycling Ambassadors.

Name	Start Date	End Date	Goal
HHW Education	Ongoing	Ongoing	4 and 5

Audience: Residents

Soil and Water Conservation District provides educational brochures/flyers on HHW and HHW reduction for residents. They also provide a HHW curriculum to teachers and youth leaders. Area teachers receive training on the Windows on Waste (elementary) and Cycles of Recycling (grades 7-12) curriculum.

Target for Next 5 Years: The SWMD will think broadly about HHW to develop or find additional resources explaining how to reduce future generation of HHW through source-reduction efforts and behavior change. These resources will be posted on the website and promoted on Facebook.

Name	Start Date	End Date	Goal
Backyard Composting Education	Ongoing	Ongoing	4 and 5

Audience: Residents

The SWMD provide educational materials/brochures on yard waste composting.

Target for Next 5 Years: Continue program.

Name	Start Date	End Date	Goal
Get Caught Recycling	2019	Ongoing	4

Audience: Residents in Village of Ottawa

Get Caught Recycling is an outreach strategy promoting recycling for Ottawa curbside recycling participants. A barrier may be the physical act of placing items in the bin or at the curb. The benefit is the potential to receive a reward if the user uses a drop-off location. This program was delayed in getting started.

"Get Caught Recycling" will promote the act of recycling with recognition and awards. 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 will visit a street to "catch" someone recycling. Those "caught" will be photographed and given recycled content prizes.

Target for Next 5 Years: Initiate the program by 2024 and continue through the planning period.

Name	Start Date	End Date	Goal
Lead Acid Battery Recycling Outlet List	ongoing	Ongoing	4 and 5

The SWMD fields several phone calls a month in the office for private sector options and maintains a list on the website www.putnamcountycycles.com. At this time, the private enterprise systems for collecting batteries seems to be working successfully. Batteries are collected at the annual Recycle Day. The Village of Ottawa and the Thrift Store also collect them.

Name	Start Date	End Date	Goal
Scrap Tire Recycling Outlet List	ongoing	Ongoing	4 and 5

The District maintains a list of recycling opportunities for scrap tires. The list is available on the website, in the Putnam County Commissioners Office, and at the Putnam County Soil & Water Conservation offices.

Name	Start Date	End Date	Goal
PAYT Promotion & Technical Assistance	ongoing	Ongoing	4 and 5

There were no municipal inquiries about volume-based collection services in 2017, 2018 or 2019.

Target for Next 5 Years: The SWMD will promote the benefits of volume-based collection services on Facebook.

OUTREACH PRIORITY –

Name	Start Date	End Date	Goal
Outreach Priority – School Recycling Outreach	2023	Ongoing	4

Timeline assumes program will begin at start of school year in 2023. This outreach strategy will be used for any new schools added.

Target Audience	Tier	Tactic	Deliverable	Metrics
Audience: Schools collecting paper and cardboard Problem (Desired Behavior Change): 1) Find best arrangement for collecting recyclables from schools 2) Maximize paper and cardboard collected	1	Engage (phone conversations, one-on-one in person discussions) school administration to gauge interest in mobile collection		
	1	Research cost of trash and calculate estimated savings for recycling services	FY 2023 Cost Benefit Analysis	Cost of trash collection Cost of providing recycling collection
	1	Consensus for recycling arrangement	FY 2023 Agreement and Schedule Service	Service agreement
	2	Observe current behavior and conduct onsite custodial staff interviews to understand best system for in-school collection.	FY2023 Develop an in-school collection plan. Promote throughout the school.	Establish baseline tonnage of cardboard and paper. Define barriers.
	2	Train custodial staff and teachers to implement best collection practices in classrooms	Promote with teachers an activity to decorate collection containers (cardboard boxes).	Track number of custodial staff and teachers engaged. After 3 months of implementation measure cardboard to determine success.
	2	Continued outreach to users	FY2024 Implement additional campaign strategy after holiday break	

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
	County	State	
Crawford County Sanitary Landfill	Crawford	OH	33
Defiance County Sanitary Landfill	Defiance	OH	51.6
Pine Grove Regional Facility	Fairfield	OH	64.9
Hancock County Sanitary Landfill	Hancock	OH	33.8
Celina Sanitary Landfill	Mercer	OH	4.3
Sunny Farms Landfill	Seneca	OH	10.7
Williams County Landfill	Williams	OH	113.2
Wood County Landfill	Wood	OH	7
Evergreen Recycling & Disposal	Wood	OH	37.5
County Environmental of Wyandot	Wyandot	OH	98.2
National Serv All	Allen	IN	Unk.
Jay County Landfill	Jay	IN	Unk.
Misc. Treatment Facilities	Unk.	IN	Unk.

Source(s) of Information:

2018, 2017 and 2016 Ohio Solid Waste Facility Data Report Tables (Table 13) published by Ohio EPA

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 reference year and two previous years, the SWMD sent material for disposal to 10 in-state landfills and several out-of-state landfills.

Table M-2 lists the landfill facilities and percentage of SWMD's 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		Tons	Percentage of Putnam's 2018 Disposed Waste
	County	State		
Crawford County Sanitary Landfill	Crawford	OH	2	Less than 0.1%
Defiance County Sanitary Landfill	Defiance	OH	4,955	34.0%
Hancock County Sanitary Landfill	Hancock	OH	5,529	38.0%
Celina Sanitary Landfill	Mercer	OH	21	Less than 0.5%
Wood County Landfill	Wood	OH	198	1.4%
Evergreen Recycling & Disposal	Wood	OH	28	Less than 0.5%
County Environmental of Wyandot	Wyandot	OH	1,112	7.6%
National Serv All	Allen	IN	1,060	7.3%

Facility	Location		Tons	Percentage of Putnam's 2018 Disposed Waste
	County	State		
Jay County Landfill <i>(transferred to)</i>	Jay	IN	1,244	8.5%
Misc. Treatment Facilities	Unk.	IN	1,479	2.9%
Total			14,567	100%

Source:

2018 Ohio Facility Data Tables published by Ohio EPA

Sample Calculation: 197.55 tons to Wood County Landfill / 14,566.85 total tons disposed by the SWMD in 2018 = 1.4% of the SWMD's waste disposed was disposed of in Wood County Landfill.

Transferred waste to each landfill was calculated using ratio of total waste hauled to waste reported to each landfill. For the SWMD, all of the transferred waste was disposed of at one landfill, Jay County Landfill.

Percentage of waste disposed in landfills = landfill total tons / total landfilled waste x 100%

As seen in Table M-2, the majority of the SWMD's waste, 72%, was disposed of in-state at Hancock County Sanitary Landfill, 38%, and Defiance County Sanitary Landfill, 34%. Both facilities have more than adequate landfill capacity with 33.8 years and 51.6 years, respectively. There are no known issues with either landfill that would cause them to cease accepting waste. The next in-state landfill with the highest percentage of the District's waste was the County Environmental of Wyandot landfill which accepted 7.6% of the District's 2018 waste for disposal. This landfill also has more than adequate remaining capacity with 98.2 years left and no known issues. Based on the capacity of the SWMD's top three used, in-state landfills (representing where 79.2% of the SWMD's solid waste is sent), there appears to be adequate disposal capacity with no known reasons to suspect potential capacity shortages in near and long term.

The majority of the remaining waste was disposed of in facilities outside the state, in Indiana. In 2018, the District sent about 18.7% of it's waste to two landfills and other treatment facilities. Indiana does not have current estimations of landfill capacity published on it's website.

B. Capacity at Private Landfill Facilities

Captive or residual waste landfills are designated exclusively for the disposal of one or any combination of wastes from seven specific industrial categories. Due to regulations these facilities will not receive municipal solid waste. Residual/captive landfills are landfills used to dispose of waste generated exclusively by the manufacturing company that owns the landfill. 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. Landfill Remaining Capacities and Daily Waste Receipts Amounts – Industrial and Residual Solid Waste Landfills

C. Incinerators and Energy Recovery Facilities

The SWMD has not sent any waste to a waste-to-energy facility during the reference year or previous two years. In general, incinerating solid waste is not a major component of solid waste management in Ohio.

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		
<i>In-District</i>				
None				

Facility Name	Location		Type of Facility	Waste Processed from the District (in tons)
	County	State		
<i>Out-of-District</i>				
None				
<i>Out-of-State</i>				
None				
Total				

APPENDIX N EVALUATING GREENHOUSE GAS

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 WARM model is updated regularly. 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 (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. Each gas's effect on the climate depends on how much is in the atmosphere, how long they stay in the atmosphere, and how strongly they impact the atmosphere. Disposal and treatment of materials results in greenhouse gas emissions from collection, transport, landfill disposal, 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 (CO₂E) 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 CO₂E is simply the amount of CO₂ that would have the same global warming potential as the waste reduction impacts, when measured over a specified timescale. The international reporting standard for CO₂ emissions is metric tons, so carbon dioxide amounts may be reported as MTCO₂E, metric tons of carbon equivalent.

Produced by US EPA, the Waste Reduction Model (WARM) was designed to help solid waste planners, municipal leaders, and other stakeholder organizations track and report greenhouse gas emissions reductions. It is a database tool that helps decision makers predict the strategies that most reduce GHG emissions. The WARM model calculates GHG emission across six waste management modalities (source reduction, recycling, composting, anaerobic digestion, combustion, and landfilling). Modeling different combinations of waste management practices sees which approach leads to the least GHG entering the atmosphere.

This report shows the metric tons of carbon dioxide equivalent (MTCO₂E), 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, Putnam County generated 21,427 tons of MSW from the residential and commercial sectors, landfilled or incinerated 45% (9,632 tons), recycled 19% (3,983 tons) and composted 36% (7,813 tons).

EPA's 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 is 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. This makes using the WARM model challenging for modeling GHG biosolids management. Biosolids is not one of the material category types to model in WARM, so food waste was used a proxy. Also, HHW and batteries were excluded because of lack of material category and no relevant proxy.

Total GHG Emissions from Baseline (Year 2018)	(9,495) MTCO ₂ E
Total GHG Emissions from Alternative (Year 2027)	(9,495) MTCO ₂ E
Incremental GHG Emissions	Stable MTCO ₂ E

If the SWMD had no diversion programs in place and all the diverted tons instead went to landfill, the MTCO₂E savings would be close to zero. With the current diversion programs, the SWMD reduces GHG emissions by (9,495) MTCO₂E. To put this into perspective, the diversion programs are equivalent to:

- Removing emissions from 1,745 passenger vehicles annually
- Conserving 924,804 gallons of gasoline annually
- Conserving 927 households' annual energy consumption annually

Diversion is projected to remain stable throughout the planning process so that the GHG emissions reduction from waste diversion programs will stay roughly around 9,500 MTCO₂E per year.

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 $\geq \$1.00$ and $\leq \$2.00$;
- The out-of-district fee must be $\geq \$2.00$ and $\leq \$4.00$; and
- The out-of-state fee must be equal to the in-district fee.

Statute (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. The District does not have active operating landfills in the District and does plan to have operating landfills in the District’s borders. Revenues are not collected and will not be collected from disposal fees at this time or during the planning period.

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	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2015	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2016	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2017	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2018	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2019	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2020	\$2	\$4	\$2	\$0	\$0	\$0	\$0

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	
2021	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2022	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2023	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2024	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2025	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2026	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2027	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2028	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2029	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2030	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2031	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2032	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2033	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2034	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2035	\$2	\$4	\$2	\$0	\$0	\$0	\$0
2036	\$2	\$4	\$2	\$0	\$0	\$0	\$0

Source(s) of Information:

CY 2014-2020 revenues sourced from SWMD quarterly fee reports. All other amounts projected.

Sample Calculations:

Total Revenue from Disposal Fee (2020) = In District Fee + Out-of-District Fee + Out-of-State Fee

Total Revenue from Disposal Fee (2020) = \$0 + \$0 + \$0 = \$0

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 \$5.00 per ton.

The generation fee is the second largest source of revenue for the SWMD, accounting for on average 19% 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 2015 and 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 \$48,391 annually over the past five years in generation fees. This average aligns with the generation fee revenue projections for that same time period in the 2016 Plan as shown in Table O-2A below.

Table O-2A Generation Fee Schedule Actual Compared to 2016 Plan Projection

Year	2016 Plan Projections Total Revenue from Generation Fee (\$)	Actual Total Revenue from Generation Fee (\$)
2014	47,836	\$48,949
2015	48,070	\$44,196
2016	48,310	\$44,472
2017	48,550	\$51,262

Year	2016 Plan Projections Total Revenue from Generation Fee (\$)	Actual Total Revenue from Generation Fee (\$)
2018	48,790	\$53,076
2014-2018 Average	48,311	\$48,391

Source(s) of Information:

CY 2014-2018 actual revenues sourced from quarterly fee reports.

CY 2014-2018 projection revenues sourced from 2016 Plan.

A noticeable trend, shown in Table O-2, is the increasing generation fee revenue. Revenue in 2017 increased 15% from 2016, then increased 4% in 2018, and jumped 8% more in 2019. The increase is reflecting the increase in residential/commercial waste disposal as noted in Appendix D. Generation fees are collected on tons of waste Putnam County disposes in the landfills. Thus, when the County's landfilled waste declines so too does the generation fee revenue. Appendix D describes years 2014, 2015 and 2016 as low waste disposal years in comparison to other historical years. Revenue is calculated by multiplying those tonnages by the \$5 per ton generation fee and assuming 95% to account for accounting collections. The District chose to use conservative projections for waste disposal landfilled basing estimations from historical averages. Using a conservative approach, the District's projected generation fee revenues are shown in Table O-2. Residential, commercial and industrial landfill disposal tonnages projected as shown in Appendix D are the base for generation fee revenues.

O-2 Generation Fee Schedule and Revenue

Year	Generation Fee Schedule (\$ per ton)	Total Revenue from Generation Fee (\$)
2014	\$5.00	\$48,949
2015	\$5.00	\$44,196
2016	\$5.00	\$44,472
2017	\$5.00	\$51,262
2018	\$5.00	\$53,076
2019	\$5.00	\$56,855
2020	\$5.00	\$53,752
2021	\$5.00	\$50,583
2022	\$5.00	\$50,492
2023	\$5.00	\$50,401
2024	\$5.00	\$50,310
2025	\$5.00	\$50,219
2026	\$5.00	\$50,128
2027	\$5.00	\$50,038
2028	\$5.00	\$49,948
2029	\$5.00	\$49,857
2030	\$5.00	\$49,768
2031	\$5.00	\$49,678
2032	\$5.00	\$49,588
2033	\$5.00	\$49,499
2034	\$5.00	\$49,410

Year	Generation Fee Schedule (\$ per ton)	Total Revenue from Generation Fee (\$)
2035	\$5.00	\$49,321
2036	\$5.00	\$49,232

Source(s) of Information:

CY 2014-2020 actual revenues sourced from quarterly fee reports.

Sample Calculation

2021 revenue = Table D-6 residential, commercial, industrial waste disposal * 95% * \$5.00

\$50,583 = 10,649 * 0.95 * \$5.00

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.

O-3 Designation Fee Schedule and Revenue

Year	Designation Fee Schedule (\$ per ton)	Total Designation Fee Revenue (\$)
2018	n/a	

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.

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: rates and charges, donations, grants, recycling revenue, reimbursements, advance from county, and worker compensation.

County Contributions: The District has historically received funding support from the County. Supplemental District funding will come from the landfill closure fund, if possible. If not, the county general fund will be used as it has in the past to specifically supplement areas of the recycling program. Occasionally there will be times when the county general fund will be needed. The County is a reliable funding source for the District. This funding is used when needed for any shortfalls in revenue. Funding from the County varies depending upon the fiscal health of the District and when the District may require an influx of cash. This may happen during special initiatives the District undertakes when District funds are unavailable. The District and County work very closely with the Commissioners and the Administrator to keep the District solvent. With this 2022 Plan Update the County Commissioners included a budget statement found in Appendix T indicating the Commissioners are responsible for funding Putnam County Solid Waste District above and beyond the generation fees and sales of recyclables.

Rates and Charges: Rates and charges levied on improved parcels in the county to support landfill post-closure costs and is placed in the landfill closure fund. Rates and charges generate revenue of approximately \$220,000

each year. If a portion is left from the expenses of landfill processes and procedures (post-closure care), it is directed as supplement to fund the District's recycling efforts.

Donations: From Recycle Day Event.

Grants: Grant monies were received in 2014, 2018 and 2019. Grants are not a reliable source of income and are not projected in the planning period. However, the District is planning to seek an Ohio EPA Community Grant in 2022. If received grant matching funds are not projected in Table O-5 but would be supported from the County general fund.

Recycling Revenue: Income from sale of recyclable materials. Recycling revenue fluctuates with the markets. The decline in revenue seen in 2018 and 2019 is due to an overall decline in market value of commingled recyclable commodities on a nationwide scale. From 2014 to 2018 the average annual revenue from recycling markets was approximately \$38,700. The recycling revenue in 2020 dipped to unhistorical lows as a result of lower volumes of materials processed. Due to the COVID 19 pandemic the Recycling Center and drop-offs were temporarily suspended. Due to the instability of recycling markets, the District projects \$30,000 annually from the sale of recyclable commodities. If the District receives an Ohio EPA Community Grant a second sort line would be added and separation of plastics #1 and #2 would greatly increase recycling revenues. The projected increases are not included in the budget since grants are highly competitive and uncertain.

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.

Adv/Cap Cr/Worker Compensation: The District received an advance in worker compensation which was corrected in 2015. No revenue is projected in the planning period.

Table O-5 Other Revenues and Other Revenue Sources

Year	County Contributions	Rates and Charges	Donations	Grants	Recycling Revenue	Reimbursements	Adv/Cap Cr/Wkr Comp	Total Other Revenue
2014	\$50,000	\$0	\$28,034	\$100,000	\$30,841	\$0	\$30,283	\$239,164
2015	\$183,013	\$0	\$10,450	\$0	\$24,483	\$25	(\$25,000)	\$192,971
2016	\$66,852	\$0	\$7,050	\$0	\$36,534	\$162	\$0	\$110,598
2017	\$105,000	\$0	\$8,200	\$0	\$54,669	\$431	\$0	\$168,301
2018	\$109,536	\$0	\$8,620	\$100,000	\$46,855	\$468	\$0	\$265,479
2019	\$120,663	\$0	\$6,775	\$100,000	\$31,172	\$1,969	\$0	\$260,580
2020	\$124,130	\$0	\$3,600	\$0	\$19,505	\$0	\$0	\$150,662
2021	\$125,000	\$0	\$4,050	\$0	\$30,000	\$0	\$0	\$162,474
2022	\$150,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$404,000
2023	\$50,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$304,000
2024	\$50,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$304,000
2025	\$50,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$304,000
2026	\$50,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$304,000
2027	\$50,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$304,000
2028	\$200,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$454,000
2029	\$50,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$304,000
2030	\$50,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$304,000
2031	\$50,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$304,000

Year	County Contributions	Rates and Charges	Donations	Grants	Recycling Revenue	Reimbursements	Adv/Cap Cr/Wkr Comp	Total Other Revenue
2032	\$100,000	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$354,000
2033	\$0	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$254,000
2034	\$0	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$254,000
2035	\$0	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$254,000
2036	\$0	\$220,000	\$4,000	\$0	\$30,000	\$0	\$0	\$254,000

Source(s) of Information:

CY 2014-2020 revenues sourced from SWMD quarterly fee reports.

Sample Calculations:

Other Revenue Total (2014) = county contributions + donations + grants + recycling revenue + reimbursements + adv/cap cr/wkr comp

6. Summary of District Revenues

Table O-6 Total Revenue (in accordance with ORC 3734.57, ORC 3734.572 and ORC 3734.573)

Year	Generation Fees	Other Revenue	Total Revenue
2014	\$48,949	\$239,164	\$288,112
2015	\$44,196	\$192,971	\$237,167
2016	\$44,472	\$110,598	\$155,070
2017	\$51,262	\$168,301	\$219,563
2018	\$53,076	\$265,479	\$318,555
2019	\$56,855	\$260,580	\$317,435
2020	\$53,752	\$150,662	\$204,414
2021	\$50,583	\$162,474	\$213,058
2022	\$50,492	\$404,000	\$454,492
2023	\$50,401	\$304,000	\$354,401
2024	\$50,310	\$304,000	\$354,310
2025	\$50,219	\$304,000	\$354,219
2026	\$50,128	\$304,000	\$354,128
2027	\$50,038	\$304,000	\$354,038
2028	\$49,948	\$454,000	\$503,948
2029	\$49,857	\$304,000	\$353,857
2030	\$49,768	\$304,000	\$353,768
2031	\$49,678	\$304,000	\$353,678
2032	\$49,588	\$354,000	\$403,588
2033	\$49,499	\$254,000	\$303,499
2034	\$49,410	\$254,000	\$303,410
2035	\$49,321	\$254,000	\$303,321
2036	\$49,232	\$254,000	\$303,232

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 District finances its operations with three main sources of revenue: generation fee, county contributions, and from sale of recyclables as shown in Figure O-1. Additionally,

the District has received grants

In 2018, generation fee total revenue was \$53,076. The largest source of revenue was the county contribution revenue sources followed by generation fee.

B. Cost of Implementing Plan

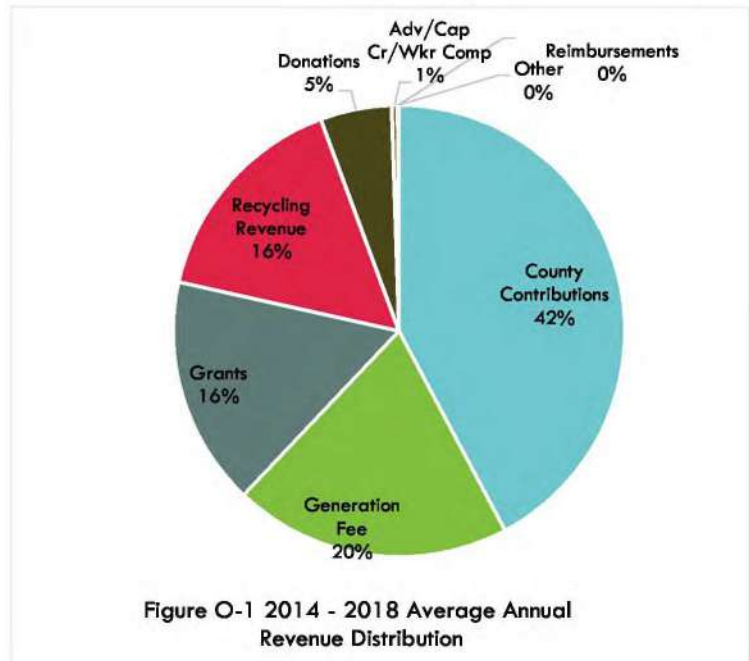


Table O-7 Expenses

Line #	Category/Program	2014	2015	2016	2017	2018	2019	2020	2021
1	1. Plan Monitoring/Prep.	\$0	\$0	\$0	\$0	\$0	\$0	\$15,081	\$10,500
1.a	a. Plan Preparation							\$15,081	\$10,500
1.b	b. Plan Monitoring								
1.c	c. Other								
2	2. Plan Implementation	\$226,658	\$255,260	\$124,640	\$195,971	\$202,390	\$403,226	\$187,372	\$227,975
2.a	a. District Administration	\$65,985	\$62,693	\$71,591	\$89,311	\$109,866	\$127,633	\$128,651	\$137,975
2.a.1	Personnel	\$65,985	\$45,336	\$68,503	\$89,311	\$109,866	\$127,633	\$128,651	\$132,975
2.a.2	Office Overhead								
2.a.3	Other	\$0	\$17,358	\$3,088	\$0	\$0	\$0		
2.b	b. Facility Operation	\$148,009	\$77,717	\$49,849	\$105,060	\$91,924	\$74,993	\$58,121	\$90,000
2.b.1	MRF/Recycling Center	\$148,009	\$77,717	\$49,849	\$105,060	\$91,924	\$74,993	\$58,121	\$175,191
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	\$12,663	\$4,000	\$3,200	\$1,600	\$600	\$600	\$600	\$0
2.d.1	Curbside								
2.d.2	Drop-off	\$2,000	\$4,000	\$3,200	\$1,600	\$600	\$600	\$600	\$0
2.d.3	Combined Curbside/Drop-off								
2.d.4	Multi-family								
2.d.5	Business/Institutional								
2.d.6	Other	\$10,663	\$0	\$0	\$0	\$0	\$0		
2.e	e. Special Collections	\$0	\$10,849	\$0	\$0	\$0	\$0	\$0	\$0
2.e.1	Tire Collection								
2.e.2	HHW Collection								
2.e.3	Electronics Collection								
2.e.4	Appliance Collection								
2.e.5	Other Collection Drives	\$0	\$10,849	\$0	\$0	\$0	\$0		
2.f	f. Yard Waste/Other Organics								
2.g	g. Education/Awareness	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.g.1	Education Staff								
2.g.2	Advertisement/Promotion								
2.g.3	Other								
2.h	h. Recycling Market Development	\$0	\$100,000	\$0	\$0	\$0	\$200,000	\$0	\$0
2.h.1	General Market Development Activities								
2.h.2	ODNR pass-through grant	\$0	\$100,000	\$0	\$0	\$0	\$200,000		
2.i	i. Service Contracts								
2.j	j. Feasibility Studies								
2.k	k. Waste Assessments/Audits								
2.l	l. Dump Cleanup								
2.m	m. Litter Collection/Education								
2.n	n. Emergency Debris Management								
2.o	o. Loan Payment								
2.p	p. Other								
3	3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.a	a. Maintaining Roads								
4.b	b. Maintaining Public Facilities								
4.c	c. Providing Emergency Services								
4.d	d. Providing Other Public Services								
5	5. Well Testing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	6. Out-of-State Waste Inspection								
7	7. Open Dump, Litter Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7.a	a. Health Departments								
7.b	b. Local Law Enforcement								
7.c	c. Other								
8	8. Health Department Training								
9	9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads								
9.b	b. Maintaining Public Facilities								
9.c	c. Providing Emergency Services								
9.d	d. Providing other Public Services								
10	10. Compensation to Affected Community (ORC Section 3734.35)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Expenses	\$226,658	\$255,260	\$124,640	\$195,971	\$202,390	\$403,226	\$202,453	\$318,666

Line #	Category/Program	2022	2023	2024	2025	2026	2027	2028	2029
1	1. Plan Monitoring/Prep.	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1.a	a. Plan Preparation	\$5,000							
1.b	b. Plan Monitoring								
1.c	c. Other								
2	2. Plan Implementation	\$356,243	\$361,973	\$367,910	\$374,062	\$380,436	\$387,043	\$388,285	\$387,785
2.a	a. District Administration	\$137,951	\$142,586	\$147,386	\$152,356	\$157,504	\$162,835	\$162,835	\$162,335
2.a.1	Personnel	\$137,451	\$142,086	\$146,886	\$151,856	\$157,004	\$162,335	\$162,335	\$162,335
2.a.2	Office Overhead								
2.a.3	Other	\$500	\$500	\$500	\$500	\$500	\$500	\$500	
2.b	b. Facility Operation	\$218,292	\$219,387	\$220,525	\$221,706	\$222,933	\$224,208	\$225,450	\$225,450
2.b.1	MRF/Recycling Center	\$68,292	\$69,387	\$70,525	\$71,706	\$72,933	\$74,208	\$75,450	\$75,450
2.b.2	Compost								
2.b.3	Transfer								
2.b.4	Special Waste								
2.c	c. Landfill Closure/Post-Closure	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
2.d	d. Recycling Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.d.1	Curbside								
2.d.2	Drop-off	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
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								
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	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.g.1	Education Staff								
2.g.2	Advertisement/Promotion								
2.g.3	Other								
2.h	h. Recycling Market Development	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.h.1	General Market Development Activities								
2.h.2	ODNR pass-through grant								
2.i	i. Service Contracts								
2.j	j. Feasibility Studies								
2.k	k. Waste Assessments/Audits								
2.l	l. Dump Cleanup								
2.m	m. Litter Collection/Education								
2.n	n. Emergency Debris Management								
2.o	o. Loan Payment								
2.p	p. Other								
3	3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.a	a. Maintaining Roads								
4.b	b. Maintaining Public Facilities								
4.c	c. Providing Emergency Services								
4.d	d. Providing Other Public Services								
5	5. Well Testing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	6. Out-of-State Waste Inspection								
7	7. Open Dump, Litter Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7.a	a. Health Departments								
7.b	b. Local Law Enforcement								
7.c	c. Other								
8	8. Health Department Training								
9	9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads								
9.b	b. Maintaining Public Facilities								
9.c	c. Providing Emergency Services								
9.d	d. Providing other Public Services								
10	10. Compensation to Affected Community (ORC Section 3734.35)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Expenses	\$361,243	\$361,973	\$367,910	\$374,062	\$380,436	\$387,043	\$388,285	\$387,785

Line #	Category/Program	2030	2031	2032	2033	2034	2035	2036
1	1. Plan Monitoring/Prep.	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1.a	a. Plan Preparation							
1.b	b. Plan Monitoring							
1.c	c. Other							
2	2. Plan Implementation	\$387,785	\$387,785	\$387,785	\$237,785	\$237,785	\$237,785	\$237,785
2.a	a. District Administration	\$162,335	\$162,335	\$162,335	\$162,335	\$162,335	\$162,335	\$162,335
2.a.1	Personnel	\$162,335	\$162,335	\$162,335	\$162,335	\$162,335	\$162,335	\$162,335
2.a.2	Office Overhead							
2.a.3	Other							
2.b	b. Facility Operation	\$225,450	\$225,450	\$225,450	\$75,450	\$75,450	\$75,450	\$75,450
2.b.1	MRF/Recycling Center	\$75,450	\$75,450	\$75,450	\$75,450	\$75,450	\$75,450	\$75,450
2.b.2	Compost							
2.b.3	Transfer							
2.b.4	Special Waste							
2.c	c. Landfill Closure/Past-Closure	\$150,000	\$150,000	\$150,000	\$0	\$0	\$0	\$0
2.d	d. Recycling Collection							
2.d.1	Curbside							
2.d.2	Drop-off							
2.d.3	Combined Curbside/Drop-off	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.d.4	Multi-family							
2.d.5	Business/Institutional							
2.d.6	Other							
2.e	e. Special Collections							
2.e.1	Tire Collection							
2.e.2	HHW Collection							
2.e.3	Electronics Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e.4	Appliance Collection							
2.e.5	Other Collection Drives							
2.f	f. Yard Waste/Other Organics							
2.g	g. Education/Awareness	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.g.1	Education Staff							
2.g.2	Advertisement/Promotion							
2.g.3	Other							
2.h	h. Recycling Market Development							
2.h.1	General Market Development Activities							
2.h.2	ODNR pass-through grant							
2.i	i. Service Contracts							
2.j	j. Feasibility Studies							
2.k	k. Waste Assessments/Audits							
2.l	l. Dump Cleanup							
2.m	m. Litter Collection/Education							
2.n	n. Emergency Debris Management							
2.o	o. Loan Payment							
2.p	p. Other							
3	3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	4. County Assistance	\$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	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	6. Out-of-State Waste Inspection							
7	7. Open Dump, Litter Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7.a	a. Health Departments							
7.b	b. Local Law Enforcement							
7.c	c. Other							
8	8. Health Department Training							
9	9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads							
9.b	b. Maintaining Public Facilities							
9.c	c. Providing Emergency Services							
9.d	d. Providing other Public Services							
10	10. Compensation to Affected Community (ORC Section 3734.35)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Expenses	\$387,785	\$387,785	\$387,785	\$237,785	\$237,785	\$237,785	\$237,785

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 expenses applicable to the District allocated to line items in Table O-7 are explained here:

1. Plan Monitoring/Prep.

1.a Plan Preparation

2020 – 2036 – The District contracted a consultant for developing the 2022 Plan Update using Format 4.0. The expense line item shown are for consulting fees for plan preparation. The District anticipates future plan updates will be conducted in-house.

1.b Plan Monitoring

No expected costs outside of District personnel costs which are included in other line item allocations.

2. Plan Implementation

2.a District Administration

2.a.1 Personnel

2014 – 2020 - Personnel costs paid by the District include drivers, personnel at the MRF, and a portion of the District Coordinator. Expense line items include cost for payroll, payroll taxes, and benefits for District personnel (including PERS, Medicare, and insurance). The costs shown for 2014 through 2020 are actual expenses. The average annual percent change from 2014 to 2020 is 15%. A timeline of historical increases in costs include:

- Hiring District Coordinator at the end of December 2015;
- Adding disadvantaged workforce to help staff the MRF in 2017;
- Transitioning two part-time employees to full-time in 2019;
- Increases in health care costs annually; and
- Salary raises.

In the past, Putnam County provided supervision and coordination for the Solid Waste District as one of the assignments of a county employee reporting directly to the Putnam County Commissioners. This District Coordinator provides District supervision as part of the duties of an employee of the Commissioner's Office and will provide appropriate office and support services for that employee. A portion of the salary is allocated in this budget, the District may allocate additional funds toward salary and support costs for District supervision if funds are available after all of the programs that are included in the District's implementation schedule are adequately funded.

2021 – 2027 - In 2021, the U.S. national inflation rate is projected to trend around 1.7%. Putnam County is budgeting for a 3% annual rate increase on salaries and 5% annually on fringes and benefits. The forecasted personnel budget supports 2 full-time, 3 part-time, and one partial salary.

2028 – 2036 – In 2028, personnel budgeted costs are held constant through the remaining of the planning period.

2.a.2 Office Overhead – No expenses incurred or budgeted.

2.a.3 Other

2014 – 2020 - An allocation to reimburse the County for mileage and postage related to District supervision and program coordination was budgeted in the District's 2016 Plan. The District is not charged for the general office operation services, but the County reserves the right to do so. Allocations for services were made in 2015 and 2016.

The District website is hosted by the Putnam County Commissioners resulting in no expenditures for the District. The District has capability to add or update the website.

2022 – 2028 - An allocation to reimburse the County for mileage and postage related to District supervision and program coordination is included in this budget. Projecting into the future, costs include budgets at \$500 a year.

2.b. Facility Operation

2.b.1 MRF/Recycling Center

2014 – 2020 – Several program expenses are rolled into this line item and include:

- Recycling Days. The table below shows historical costs of the program. As shown, since 2017 program costs have increased annually. The cost in 2020 increased 10% more than 2019.

2015	2016	2017	2018	2019	2020
\$10,399	\$8,727	\$9,490	\$11,700	\$12,692	\$13,994

- Advertisements and promotional items. Includes costs for program promotions, flyers, postcards, advertisements, and small handouts. Historical costs are \$450 annually.
- Drop-off and MRF operational expenses. These costs include fuel, repairs, and other supplies/expenses (protective safety clothing and equipment, baling wire, etc.). Fuel costs for MRF operations and servicing drop-off containers from 2015 to 2018, averaged approximately \$12,000. Higher levels of contamination at drop-offs led to changes in operations beginning in 2019. Some drop-off sites were suspended, and some were monitored. In March 2020 all sites were suspended due to COVID 19 pandemic. Then in April 2020 only the Ottawa location was re-opened with a constant monitor. In 2020, labor and employment issues also disturbed drop-off service and MRF operations.
- Drop-off and MRF capital expenses. Costs include equipment. Equipment expenses occur about every other year and include purchase of baler, skid steer, etc.

2021 – 2036 – An average of roughly \$91,000 annually was spent from 2014 to 2019. Planning period projections are described in the table below. The District Board of Directors reserve the right to allocate more or less than budgeted in any planning year. Expenses that may be incurred if a grant is received are not included because grants are competitive and uncertain.

	2020	2021	Projection Estimate
Recycling Days	\$13,994	\$14,694	Beginning in 2021, 10% annual program cost increases through 2027
Advertisements & Promotions	\$450	\$450	Hold constant
Drop-off and MRF Operational Expenses	\$27,723	\$32,092	Beginning in 2021, 1% annual program cost increases through 2027. Less fuel costs are expected with operation changes to the drop-off. With less sites operating in 2020, the projected costs are estimated beginning with the 2020 costs.
Drop-off and MRF Capital Expenses	\$15,955	\$127,955	Truck purchase in 2021. Beginning in 2022 hold annual budget at \$20,000 for equipment purchases.
TOTAL	\$58,122	\$175,191	

- 2.b.2 Compost - No expenses incurred or budgeted.
- 2.b.3 Transfer - No expenses incurred or budgeted.
- 2.b.4 Special Waste - No expenses incurred or budgeted.

2.c. Landfill Closure/Post-Closure

2014 – 2019 – Costs for Putnam County Landfill post-closure care are not reported in the District's quarterly fee reports. Average costs from 2018 through 2021 were roughly \$170,000.

	2018	2019	2020	2021	Average
TOTAL	\$266,575.54	\$134,071.33	\$216,613.04	\$59,585.58	\$169,211.37

Leachate costs have been level averaging approximately \$39,000 annually. Contract services and engineering services are roughly \$40,000 annually each, however there are some years that peaked upwards of \$80,000.

2021 – 2036 – Annual projected costs are held constant at \$150,000 annually anticipating less leachate and lower engineering services.

2.d. Recycling Collection

2.d.1 Curbside – No expenses incurred or budgeted.

2.d.2 Drop-off

The District provides drop-offs for part-time, full-time and local school districts in the County. The Village of Fort Jennings & Otterville Scouts help with the program, and in turn the District makes a donation to the scouts. Additional cost is assistance to VanWert SWMD for collection services. Costs for 2014 to 2020 are actual costs.

2021 – 2036 – Beginning in 2021 any costs for the drop-off program are absorbed in the MRF line item allocation with changes to the drop-off program.

2.d.3 Combined Curbside/Drop-off - No expenses incurred or budgeted.

2.d.4 Multi-Family - No expenses incurred or budgeted.

2.d.5 Business/Institutional – No direct costs. All expenses are indirect costs from District staff time.

2.d.6 Other - No expenses incurred or budgeted.

2.e. Special Collections

2.e.1. Tire Collection

No expenses incurred or budgeted. The District partners with the Putnam County Soil & Water District to recycle used tires. Indirect costs to provide this program.

2.e.2. HHW Collection – Costs for HHW collection are include in the MRF/Recycling Center line item as Recycling Days. The District seeks donations to host the event. **Annually the District will team with local industrial, municipal and commercial partners to provide one day each year, over a weekend in the autumn, in which residents can bring their batteries (both lead acid and household), electronics, and HHW for recycling.**

2.e.3. Electronics Collection - No expenses incurred or budgeted.

2.e.4. Appliance Collection - No expenses incurred or budgeted.

2.e.5. Other Collection Drives - No expenses budgeted.

2.f.1. Yard Waste/Other Organics - No expenses incurred or budgeted.

- 2.g. Education/Awareness
- 2.g.1 Education Staff - No expenses incurred or budgeted. Staff costs to implement programs and strategies are absorbed in the personnel line item.
- 2.g.2. Advertisement/Promotion - Advertising and promotional costs for programs and strategies are included in the MRF/Recycling Center line item.
- 2.g.3. Other - No expenses incurred or budgeted.

2.h.1 General Market Development Activities - No expenses incurred or budgeted.

2.m. Litter Collection
No expenses incurred or budgeted

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
No expenses incurred or budgeted

8. Health Department Training
No expenses incurred or budgeted

9. Municipal/Township Assistance
No expenses incurred or budgeted

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. The District 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.

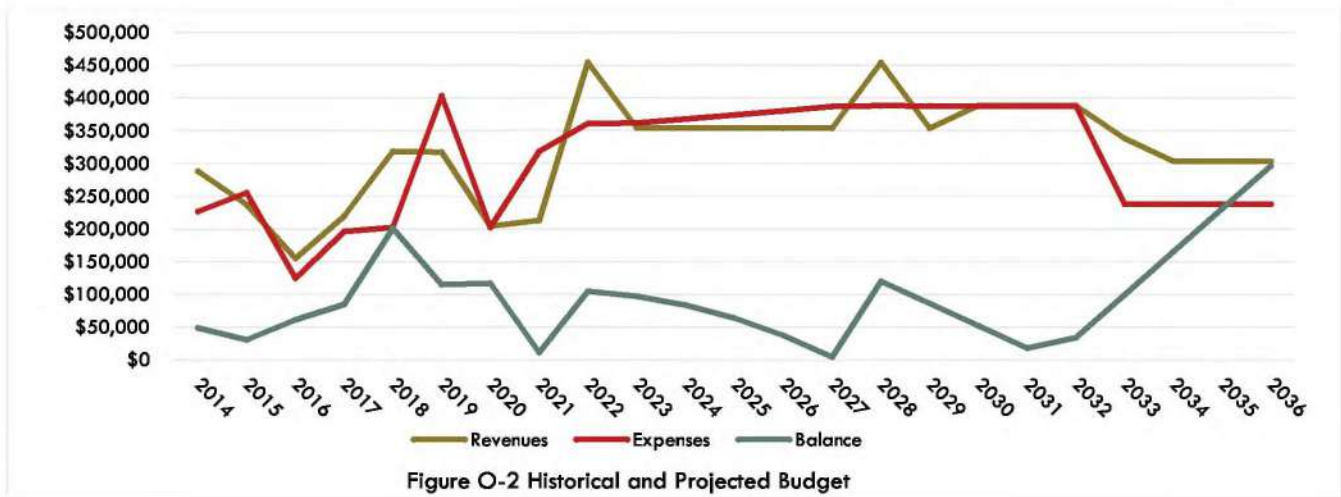
The District reserves the right to revise the budget and reallocate funds as programs change or as otherwise determined to be in the best interest of the District. The Board of County Commissioners shall thereafter approve any adjustments to the budget on an annual or more frequent basis. The District 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	-\$12,569
2014	\$288,112	\$226,658	\$61,455	\$48,885
2015	\$237,167	\$255,260	-\$18,093	\$30,793
2016	\$155,070	\$124,640	\$30,430	\$61,223
2017	\$219,563	\$195,971	\$23,591	\$84,814
2018	\$318,555	\$202,390	\$116,165	\$200,979
2019	\$317,435	\$403,226	-\$85,792	\$115,187
2020	\$204,414	\$202,453	\$1,960	\$117,147
2021	\$213,058	\$318,666	-\$105,608	\$11,539
2022	\$454,492	\$361,243	\$93,249	\$104,788
2023	\$354,401	\$361,973	-\$7,573	\$97,216
2024	\$354,310	\$367,910	-\$13,600	\$83,615
2025	\$354,219	\$374,062	-\$19,843	\$63,772
2026	\$354,128	\$380,436	-\$26,308	\$37,464
2027	\$354,038	\$387,043	-\$33,005	\$4,459
2028	\$453,948	\$388,285	\$115,662	\$120,121
2029	\$353,857	\$387,785	-\$33,928	\$86,193
2030	\$388,605	\$387,785	-\$34,018	\$52,175
2031	\$388,452	\$387,785	-\$34,108	\$18,067
2032	\$388,300	\$387,785	\$15,803	\$33,870
2033	\$338,148	\$237,785	\$65,713	\$99,584
2034	\$303,410	\$237,785	\$65,624	\$165,208
2035	\$303,321	\$237,785	\$65,535	\$230,743
2036	\$303,232	\$237,785	\$65,446	\$296,189

Revenues are forecasted to increase as needed to support the operations. Historically, the balance supports operations and when the ending balance declines operational needs are supported with County contributions. This budget does not include forecasted grants which the District intends to seek for equipment purchases.



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 of the Putnam County Solid Waste Management District is hereby authorized to establish facility designations in accordance with Section 343.014 of the Ohio Revised Code after this Plan has been approved by the Director of the Ohio Environmental Protection Agency. Facility designation shall be established and governed by applicable District rules.

B. Designated Facilities

At the present time, the District has not designated any facilities to which District waste must be taken. However, the Putnam County Solid Waste Management District Board of Directors reserve the right to designate a facility or facilities.

C. Documents

None included.

APPENDIX Q DISTRICT RULES

A. Existing Rules

The current District Plan reserves for the Board of Directors the power to make and enforce rules to the fullest extent authorized by Ohio Law. However, at the present time, the Putnam County Solid Waste Management District has not adopted any rules.

B. Proposed Rules

After this updated plan has been approved by the Director of the Ohio Environmental Protection Agency, the Putnam County Solid Waste Management District will, as the District deems appropriate, adopt any rules that are necessary to implement the ratified and approved Solid Waste Management Plan. Since changes may occur during the planning period, the District reserves for the Board of Directors the power to make and enforce rules to the fullest extent authorized by Ohio law.

The Ohio Revised Code, Section 343.01 (G) gives solid waste districts the authority to adopt, publish, and enforce rules to the extent authorized by the solid waste management plan of the district approved under section 3734.521 or 3734.55 of the Revised Code or subsequent amended plans of the district approved under section 3734.52101 or 3734.56 of the Revised Code.

This plan authorizes the Putnam County Solid Waste Management District Board of Directors to adopt, publish, and enforce rules doing any of the following:

1. Prohibiting or limiting the receipt of solid waste generated outside the district or outside a service area prescribed service area consistent with the projections made in the solid waste management plan or amended plan, at facilities covered by the plan.
2. Governing the maintenance, protection, and use of solid waste collection or other solid waste facilities located within the district.
3. Governing the development and implementation of a program for the inspection of solid waste generated outside the boundaries of this state that are disposed of at solid waste facilities included in the district's solid waste management plan or amended plan.
4. Exempting the owner or operator of any existing or proposed solid waste facility provided for the plan or amended plan from compliance with any amendments to a township zoning resolution.

Additional language in Section 343.01 (G) further defines the limits of the rules which may be promulgated in the four areas listed above.

Upon approval of this plan, the District plans to amend or rescind the existing rules and to adopt rules governing the following:

Construction or improvement of Solid Waste Facilities: Any person, Municipal Corporation, township or other political subdivision that plans to construct, enlarge, or modify any solid waste facility for the disposal, transfer or composting of solid waste must submit general plans and specifications for the proposed improvement to the District Board of Directors. The District Board of Directors must approve the facility as complying with the solid waste management plan or amended plan of the District before the facility is constructed, enlarged or modified. The rule requiring that plans be submitted will not establish design standards for solid waste facilities.

Prohibiting scavenging: No person shall remove solid waste or recyclable material from any solid waste facility or from any solid waste or recyclable material collection site, including materials set out on private property for

waste or recycling collection, unless that person is authorized to do so by the District. The rule will designate the persons that are authorized by the District to remove solid waste or recyclable materials.

Prohibiting tampering or damaging facilities: No person shall tamper with or damage any solid waste facility located in the solid waste district.

Procedures

The District Board of Directors will use the following procedures for the adoption of rules:

1. The District will draft rules as needed.
2. The Board will adopt the rules following any revisions at a regular meeting or a special meeting designated for rules adoption. Rules will be adopted by resolutions approved by a majority of the quorum of the Board.
3. Upon adoption, the rules will be published and enforced in accordance with Ohio Revised Code Section 343.01(g).

APPENDIX R BLANK SURVEY FORMS AND RELATED INFORMATION



Dear Industrial Facility,

Thank you for completing this survey. The information you provide for your company is crucial to monitoring the Putnam County Solid Waste Management 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 Putnam County Solid Waste Management District and Ohio, in 2016. Your company's survey response **will not** be reported individually; all data will be summarized by each North American Industry Classification System (NAICS) category.

For assistance completing this form or any questions related to the survey, please contact Alaina Siefker, the Putnam County Solid Waste Management District's Recycling Coordinator, at alaina.siefker@putnamcountyohio.gov or (419) 523-3656 x742.

Please complete and submit this survey no later than 5/1/2017.

Options for Returning the Completed Survey

- Email directly to Alaina Siefker at alaina.siefker@putnamcountyohio.gov, Subject Line: 2016 Industrial Survey
- Fax to (419) 523-9213, Attention: Alaina Siefker
- Mail to Alaina Siefker at 245 E. Main Street, Ste 101, Ottawa, Ohio 45875

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 Putnam County Solid Waste Management 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? <input type="checkbox"/> Yes <input type="checkbox"/> No		

Instructions for completing Table B:

Table B provides a list of common materials that are recycled by industrial facilities in Ohio. Please indicate the unit of each quantity of material that is reported (pounds, tons or cubic yards). Provide any comments related to each material as necessary. Please do not report any liquid waste, hazardous waste or construction & demolition debris.

The list in **Table B** is not all-inclusive. If your facility recycles a material that is not listed in **Table B**, please enter the name and quantity of that material on a line labeled "Other." Some materials may not apply to your operation; simply enter "0" for those materials. Some of the materials are listed in broad categories. For example, "Plastics" include plastics #1-7, plastic films, etc. Please refer to the "Materials Cheat Sheet" attached to the end of this document for examples of materials and definitions.

If you do not currently track this information internally, your solid waste hauler or recycling processor may be able to provide it upon request. The Putnam County Solid Waste Management District may also be able to provide you with assistance.

Table B: Quantities of Recycled Materials			
Recyclable Material Category	Amount Recycled in 2016	Units	Name of hauler or processor that takes the material/other comments
Food		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Glass		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Ferrous Metals		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Non-Ferrous Metals		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Corrugated Cardboard		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
All Other Paper		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Plastics		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Textiles		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Wood		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Rubber		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Commingled Recyclables		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Ash (recycled ash only)		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Non-Excluded Foundry		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Flue Gas Desulfurization		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> 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 Alaina Siefker with any questions.

Alaina Siefker, Recycling Coordinator
 Putnam County Solid Waste Management District
 Phone: (419) 523-3656 x742
 Email: alaina.siefker@putnamcountyohio.gov

Materials Cheat Sheet

Food

- Compostable food waste
- Food donations

Glass

- Bottles (any color)
- Jars

Ferrous Metals

- Mild Steel
- Carbon Steel
- Stainless Steel
- Cast Iron
- Wrought Iron

Non-Ferrous Metals

- Aluminum
- Copper
- Brass
- Silver
- Lead
- Misc. Scrap Metals

All Other Paper

- Office paper
- Paperboard
- Newspapers
- Folders
- Telephone Books
- Magazines
- Catalogs
- Junk Mail

Plastics

- Plastics #1-7
- Plastic Bottles
- Plastic Jugs
- Shrink Wrap
- Plastic Films
- Coat Hangers

Textiles

- Fabrics
- Clothes
- Carpet

Wood

- Bark
- Woodchips
- Sawdust
- Scrap Wood
- Shipping Pallets
- Boards

Commingled Recyclables

- This is a mix of several different materials that are placed into one container and hauled for recycling. It can include all or a combination of the materials listed above.

Examples of materials that fall under "Other"

- Appliances
- Electronics
- Non-hazardous chemicals (solids only)
- Stone/Clay/Sand
- Yard Waste
- Sludge
- Tires
- Any other solid waste that is recycled at your facility

Estimating recycling tonnages – if you are not able to obtain exact tonnages of materials recycled, there are numerous ways to estimate the amount of material recycled in any given year. Below are some common conversion factors that may assist you with your estimations:

Material Type	Density (lb/cu yd)
Mixed Paper Recycling	484
Bottles and Cans	200
Single Stream Recycling	139
Cardboard	100

- (size of container (in cubic yards) X number of collections per month X 12) X density (see table above) = Total Pounds per Year
- 2,000 pounds = 1 ton

For more assistance, contact your solid waste management district.

APPENDIX S SITING STRATEGY

It is proposed that the District adopt a rule under the authority of ORC 343.01(G)(2) stating that any person, municipal corporation, township or other political subdivision that plans to construct, enlarge, or modify any Solid Waste Facility for the collection, storage, disposal, transfer, recycling, processing, or composting of solid waste must submit general plans and specifications for the proposed improvement to the District Board of Directors. The District Board of Directors must approve the Solid Waste Facility as complying with the solid waste management plan or amended plan of the District before the Solid Waste Facility is constructed or modified.

The Putnam County Solid Waste Management District's new siting rule will require the submission and approval of plans for the construction of Solid Waste Facilities as defined in this section. The Board shall not approve the General Plans and Specifications for any proposed Solid Waste Facility or the Modification of any existing in-District Solid Waste Facility where the construction and operation of the proposed facility, as determined by the Board will: (1) have significant adverse impacts upon the Board's ability to finance and implement the Plan; (2) interfere with the Board's obligation to provide the maximum feasible utilization of existing in-District Solid Waste Facilities; (3) materially and adversely affect the quality of life of residents within 300 feet of the proposed facility; or (4) have material adverse impacts upon the local community, including commercial businesses within 500 feet of the proposed facility and the adequacy of existing infrastructure to serve the proposed facility. Except as otherwise provided herein, all proposed Solid Waste Facilities, whether to be sited by or on behalf of the District, or by or on behalf of any person, Municipal Corporation, township or other political subdivision, shall be subject to this Siting Strategy.

Procedure Implementing Siting Strategy

Unless otherwise provided herein, or an exemption or waiver from this requirement has been granted by the Board, the following procedure and process shall be followed in the event the construction of a new Solid Waste Facility or the Modification of an existing in-Solid Waste Facility is proposed within the District:

Step 1: Submittal of Plans and Specification

Any person, Municipal Corporation, township or other political subdivision proposing to construct a new Solid Waste Facility or Modify an existing in-District Solid Waste Facility shall:

- a. Provide General Plans and Specifications of the proposed facility to the Board. Such General Plans and Specification shall include, but may not be limited to, the following documents and information:
 - i. A site plan for the proposed Solid Waste Facility;
 - ii. Architectural drawings or artists renderings of the proposed Solid Waste Facility;
 - iii. Availability of necessary utilities;
 - iv. Projected size and capacity of the proposed Solid Waste Facility;
 - v. Hours of operation;
 - vi. Anticipated source of **solid** waste or recyclable materials to be received at the proposed Solid Waste Facility. If recycling activities will be conducted at the proposed facility, a detailed description of the recycling activity including materials to be recycled, technology to be utilized to accomplish the separation and processing of the recyclable materials, the anticipated percentage of waste reduction anticipated from the operation of the facility and the identification of the market for the sale of the recyclable materials recovered at the facility must be submitted;
 - vii. Type and anticipated number of vehicles utilizing the proposed Solid Waste Facility on an hourly and daily basis;
 - viii. Routes to be used by vehicles utilizing the facility and methods of ingress and egress to the facility, and
 - ix. Any other information necessary for the Board to evaluate whether the proposed Solid Waste Facility complies with each of the criteria listed below:
- b. Adequately demonstrate to the Board that the construction or modification and subsequent operation of the proposed Solid Waste Facility will:
 - i. Be consistent with the goals, objectives, and strategies contained in the Plan;

- ii. Not adversely affect financing for the implementation of the Plan;
 - iii. Not adversely affect the Board's obligation to provide for the maximum feasible utilization of existing in-District Solid Waste Facilities;
 - iv. Be installed, operated, and maintained to be harmonious and appropriate in appearance and use with the existing and intended character of the area;
 - v. Be adequately served by essential (public facilities and services);
 - vi. Not create excessive additional requirements at public cost for public facilities or services;
 - vii. Not be detrimental to the economic welfare of the community;
 - viii. Not involve the excessive production of traffic, noise, smoke, fumes, or odors;
 - ix. Have vehicular approaches to the property that are designed not to create an interference with traffic;
 - x. Not result in the destruction, loss or damage of a natural, scenic, or historic feature of major importance; and
 - xī. Not adversely affect property values within the surrounding community.
- c. The Applicant shall submit any additional information as the Board requests to establish. To the reasonable satisfaction of Board, that the construction or modification and subsequent operation of the proposed Solid Waste Facility or proposed modification of an existing in-District Solid Waste Facility will comply with the Plan.

Step 2: Board Review

The Board shall conduct a review of the information submitted for the proposed Solid Waste Facility to determine whether the Applicant has adequately demonstrated that the proposed Solid Waste Facility will be constructed or modified and subsequently operated in compliance with the Plan and demonstrated that the impacts listed in Step 1 do not adversely affect the District, its residents and businesses. The Board may expend District funds to employ a consultant or consultants familiar with Solid Waste Facility construction and operation, land use planning and solid waste planning to assist the Board in implementing the Siting Strategy and in its determination of whether a proposed Solid Waste Facility or modification of an existing in-District Solid Waste Facility complies with the Plan.

Within 60 (sixty) days of receiving the General Plans and Specifications from an applicant, the Board shall make a determination as to whether the General Plans and Specifications submitted by the applicant contain sufficient information for the Board to complete its review of the proposal. In the event the Board determines that more information is necessary to complete its review of the proposal, the Board shall notify the Applicant of such request in writing within 10 (ten) days.

Within 90 (ninety) days of determining that the Applicant has submitted a complete set of General Plans and Specification, the Board shall determine whether the proposal complies with the Plan and the criteria identified in Step 1 herein. The Board shall notify the Applicant of its decision in writing. While the Board has broad discretion regarding the approval of General Plans and Specifications for a proposed Solid Waste Facility or modification of an existing in-District Solid Waste Facility, it is the intent of this Siting Strategy that the Board shall not approve General Plans and Specifications for a proposed Solid Waste Facility unless the Board determines that the proposed Solid Waste Facility or modification of an existing in-District Solid Waste Facility complies with the Plan and the criteria identified in Step 1 herein.

Step 3: Development Agreement

The Board may require as a condition of its approval, a development agreement which memorializes the obligations that are the basis of the Board's conclusion that the General Plans and Specifications demonstrate that the proposed facility or its modification complies with the Plan. The party proposing to construct a Solid Waste Facility shall have an ongoing obligation to comply with the Plan and the development agreement.

Waiver

The Board reserves the right to waive application of the Rule's requirement for the submission and Board approval of general plans and specifications, and any portion or all of the Siting Strategy if the Board concludes such Waiver is in the best interests of the District, its residents and businesses and will assist tile Board in the successful implementation of the Plan and further District goals with respect to solid waste and waste reduction activities.

Definitions

For the purposes of this section, the following definitions shall apply:

- a. Solid Waste Facilities shall mean all solid waste collection, storage, disposal, transfer, recycling, processing and composting facilities.
- b. Siting Strategy shall mean the process by which the Board shall review proposals for the construction or Modification of any Solid Waste Facility and determine whether such proposal complies with the Plan.
- c. General Plans and Specifications shall mean that information required to be submitted to the Board for review for the construction or modification of any proposed Solid Waste Facility and includes, but is not limited to, a site plan for the proposed facility, architectural drawings or artists renderings of the proposed facility, the projected size and capacity of the proposed facility and all other information identified in this Siting Strategy.
- d. Applicant shall mean a person, Municipal Corporation, township or other political subdivision proposing to construct or modify a Solid Waste Facility within the District.
- e. Modify or Modification shall mean a significant change in the operation of an existing in-District Solid Waste Facility: (1) that requires the approval of the Director of the Ohio Environmental Protection Agency, or (2) that involves a change in the type of material, manner of operation, or activities conducted at the facility (i.e., a conversion of a legitimate recycling facility to a transfer station).

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:

- Budget Statement signed by Commissioners
- 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.

Budget Statement for the 2023 Solid Waste Management Plan

We as County Commissioners for Putnam County, are responsible for funding the Putnam County Solid Waste District above and beyond the generation fees and sales of recyclables. The County intends to implement programs as outlined in the 2023 Solid Waste Management Plan. Situations will change year to year and the County will adjust accordingly to provide needed funding for program implementation.


County Commissioner

11-23-21
Date Signed

Certification Statement for the Draft Plan

We as representatives of the Putnam 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	<u>11-23-21</u> Date Signed
 Municipal Officer or Designee	<u>11-30-2021</u> Date Signed
 Township Representative	<u>11-24-21</u> Date Signed
 Health Commissioner or Designee	<u>12-8-21</u> Date Signed
 Generator Representative	<u>12/6/21</u> Date Signed
 Member Representing General Interests of Citizens	<u>11-29-2021</u> Date Signed
 Public Citizen Representative	<u>11/25/2021</u> Date Signed

NOTICE OF PUBLIC COMMENT PERIOD AND PUBLIC HEARING

The Putnam County Solid Waste Management District is establishing a 30-day written comment period (January 2, 2022 until January 31, 2022) on the draft solid waste management plan (Ohio Revised Code Section 3734.55). Putnam County Solid Waste Management District has prepared a solid waste plan as required by Section 3734.54 of the Ohio Revised Code.

The solid waste plan includes a solid waste facility inventory, projections and strategies, facilities and programs to be used, an analysis of progress made toward achieving state waste reduction goals, and costs to finance the plan. This plan is an update to a plan previously written by the Putnam County Solid Waste Management District and includes descriptions of the following programs: District Recycling Center; drop-off program, commercial/industrial sector technical assistance; recycling opportunities for scrap tires, HHW, electronics, and more; recycling statistics/data collection programs; education and awareness programs, including utilization of social media and initiation of outreach partnerships.

The plan includes a demonstration of access to capacity that determines there is more than fifteen years of landfill capacity available to the Putnam County Solid Waste Management District. The plan authorizes the Board of County Commissioners to establish facility designations in accordance with Section 343.014 of the Ohio Revised Code.

The draft plan will be available for public review beginning January 2, 2022 at the following locations:

Putnam County Solid Waste District's Website www.putnamcountyrecycles.com

Putnam County Solid Waste District's Facebook Page –Search Putnam County Ohio Solid Waste District

Putnam County Courthouse
Commissioners' Office
245 E. Main Street, Suite 101
Ottawa, OH 45875

Comments on the draft plan will be accepted by the Putnam County Solid Waste Policy Committee for a thirty (30) day period extending from January 2, 2022 until January 31, 2022. During this period, anyone may comment on the draft plan by forwarding their comments, in writing, to:

Putnam County Courthouse
Commissioners' Office
245 E. Main Street, Suite 101
Ottawa, OH 45875

A public hearing will be held on February 1, 2022 at 2:00 PM at the Putnam County Commissioners' Office, located at the following address:

Putnam County Courthouse
Commissioners' Office
245 E. Main Street, Suite 101
Ottawa, OH 45875

COMMISSIONERS:
John C. Schumböhm
Michael A. Lammer
Vincent F. Schneider

**BOARD OF COMMISSIONERS
OF PUTNAM COUNTY**
245 E. MAIN STREET, SUITE 101
OTTAWA, OHIO 45875-1968
PHONE: 419-523-3656
FAX: 419-523-9213

CLERK/OFFICE MANAGER:
Cindy M. Landwehr
GRANTS/WAGE COORDINATOR:
Ashley M. Siefker
RECYCLING COORDINATOR:
Alaina L. Siefker

2-1-2022

Putnam County Solid Waste Public Hearing for Public Comment for the
Plan Update

Alaina Siefker said the Commissioners would like the solid waste
management plan to reflect the District will be seeking an Ohio EPA
Community Grant in 2022 for equipment at the District Recycling Center.
The equipment grant will help sorting capabilities, increase the efficiency of
operations, and allow the separation of plastic commodities to ensure
commodities are getting to manufacturing end markets.

This was the only public comment at the hearing.



Alaina Siefker
Coordinator, Putnam County Solid Waste Management District

Putnam County Solid Waste District Minutes for the
Public Hearing for Public Comment for the District's Plan Update
February 1, 2022 2:00 p.m. @ Putnam County Commissioners' Office

Present: Alaina Siefker

Alaina Siefker, Coordinator of the Putnam County Solid Waste Management District was the only one that attended the Public Hearing.

Alaina Siefker said the Commissioners would like the solid waste management plan to reflect the District will be seeking an Ohio EPA Community Grant in 2022 for equipment at the District Recycling Center. The equipment grant will help sorting capabilities, increase the efficiency of operations, and allow the separation of plastic commodities to ensure commodities are getting to manufacturing end markets.

This was the only public comment at the hearing.

**Sign-In Sheet For: Putnam County Solid Waste District Public
Hearing for Public Comment Period for the Plan Update**

Date: February 1, 2022 2:00 p.m.

Location: Putnam County Commissioners' Office

<u>NAME (PLEASE PRINT LEGIBLE)</u>	<u>CONTACT PHONE NUMBER</u>
<i>Alaina Sipple</i> <i>Alaina Sipple</i>	<i>Commissioners Office</i>

RESOLUTION No. 058-059

**Declaring Adoption of the amended 2022 Solid Waste Management Plan for
Putnam County Solid Waste Management District**

A resolution declaring that the amended Solid Waste Management Plan for the Putnam County Solid Waste Management District (District) has been adopted.

WHEREAS, the District completed the draft amended Solid Waste Management Plan and submitted it to the Ohio Environmental Protection Agency for review and comment on June 1, 2021, and the Ohio Environmental Protection Agency provided comments in a non-binding advisory opinion issued on July 15, 2021;

WHEREAS, the District 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 District conducted a 30-day public comment period from January 2, 2022 to January 31, 2022 and held a public hearing February 1, 2022, to allow members of the public to provide comments regarding the amended Solid Waste Management Plan, and

WHEREAS, the District incorporated one change resultant to the public comment period and such change is reflected in the narrative of the draft amended Solid Waste Management Plan;

NOW, THEREFORE, BE IT RESOLVED by the Policy Committee of the Putnam County Solid Waste Management District as follows:

1. The Policy Committee hereby adopts the final amended Solid Waste Management Plan for Putnam 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 3765-27-90, and the state *Solid Waste Management Plan* Format, version 4.0.

This resolution shall be in effect immediately upon its adoption.

Mr. Jeff Gledge moved the adoption of this RESOLUTION. Mr. Dean Meyer seconded the motion and the roll being called upon its adoption, the vote resulted as follows:

Members	Yea	Nay	Abstain	Not Present
Mr. Vincent T. Schroeder, Chairman	<u>X</u>	_____	_____	_____
Mr. Dean Meyer	<u>X</u>	_____	_____	_____
Mr. Don Croy	<u>X</u>	_____	_____	_____
Ms. Brandi Schrafer	_____	_____	_____	<u>X</u>
Mr. Eric Siefker	<u>X</u>	_____	_____	_____
Mr. Jason Hedrick	<u>X</u>	_____	_____	_____
Mr. Jeff Giesge	<u>X</u>	_____	_____	_____

Total votes FOR the resolution: 6

Total votes AGAINST the resolution: 0

Vincent T. Schroeder
 Chairman, Solid Waste Policy Committee

ATTEST:

Alaina Siefker
 Alaina Siefker

Date: 3-1-2022

Coordinator, Putnam County Solid Waste Management District

Resolution Certifying Ratification of the Solid Waste Management Plan

Resolution No. 061

A resolution declaring that the amended solid waste management plan for the Putnam County Solid Waste Management District has been ratified in accordance with Section 3734.55 of the Ohio Revised Code.

WHEREAS, the Putnam County Solid Waste Management District held a public comment period from January 2, 2022, to January 31, 2022, and a public hearing on February 1, 2022, and the Solid Waste Management District Policy Committee adopted the amended solid waste management plan on March 1, 2022.

WHEREAS, this Solid Waste Management District Policy Committee has received copies of resolutions and ordinances approving the amended solid waste management plan from the board of county commissioners, the legislative body of the largest municipality in the county within the Putnam County Solid Waste Management District, and from legislative jurisdictions representing at least 60 percent of the population within the Putnam County Solid Waste Management District.

NOW THEREFORE BE IT RESOLVED that the Solid Waste Management Policy Committee of the Putnam County Solid Waste Management District declares the amended Plan for the Putnam County Solid Waste Management District to be ratified in accordance with Section 3734.55 of the Ohio Revised Code, and shall cause the amended solid waste management plan to be submitted to the Director of the Ohio Environmental Protection Agency for review. This resolution shall be in effect immediately upon its adoption.

This resolution shall be in effect immediately upon its adoption.

Members	Yea	Nay	Abstain	Not Present
Mr. Vincent T. Schroeder, Chairman	X			
Mr. Dean Meyer	X			
Mr. Don Croy	X			
Ms. Brandi Schrader				X
Mr. Eric Siefker	X			
Mr. Jason Hedrick	X			
Mr. Jeff Glesige	X			

Total votes FOR the resolution: 6

Total votes AGAINST the resolution: 0

Vincent T. Schroeder

 Chairman, Solid Waste Policy Committee

ATTEST:
Alaina Siefker

 Alaina Siefker
 Coordinator, Putnam County Solid Waste Management District

Date: 6-30-2022

APPENDIX U RATIFICATION RESULTS

Table U-1 Ratification Results

Putnam				
Board of County Commissioners		Approved	Rejected	Date Resolution Adopted
		yes		3/22/2022
Community	POPULATION	Population		Date Resolution Adopted
		Approved	Rejected	
Cities				
none				
Townships				
Blanchard Township	1033	1,033		3/22/2022
Greensburg Township	1392			
Jackson Township	916	916		4/11/2022
Jennings Township	1423	1,423		3/21/2022
Liberty Township	1362	1,362		5/10/2022
Monroe Township	963	963		5/2/2022
Monterey Township	1100	1,100		5/2/2022
Ottawa Township	2429	2,429		5/10/2022
Palmer Township	989	989		3/30/2022
Pleasant Township	1578	1,578		4/11/2022
Perry Township	671	671		4/29/2022
Riley Township	927	927		5/5/2022
Sugar Creek Township	1137	1,137		5/4/2022
Union Township	1502	1,502		4/11/2022
VanBuren Township	590	590		5/10/2022
Villages				
Belmore Village	144	144		5/13/2022
Cloverdale Village	160	160		4/14/2022
Columbus Grove Village	2079	2,079		4/25/2022
Continental Village	1101	1,101		5/10/2022
Dupont Village	303	303		5/17/2022
Fort Jennings Village	488	488		3/15/2022
Gilboa Village	180	180		5/9/2022
Glandorf Village	1025	1,025		4/5/2022
Kalida Village	1587	1,587		5/2/2022
Leipsic Village	2022	2,022		3/21/2022
Miller City Village	142	142		4/5/2022
Ottawa Village	4357	4,357		3/28/2022
Ottoville Village	964	964		3/28/2022
Pandora Village	1107	1,107		5/10/2022
West Leipsic Village	190			
Total		32,279	0	
County Population				33,861
Ratification percentage				95%