
2023 Municipal Solid Waste Management Plan

Clarion and Forest County, Pennsylvania

Prepared for
Clarion and Forest County, Pennsylvania

Draft #3
November 2022

Thanks to the people who volunteered their time and input during the preparation of the Clarion and Forest County Municipal Solid Waste Management Plan Update.

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Special thanks to the Pennsylvania Department of Environmental Protection who provided Act 101, Section 901 grant funding for a significant portion of this project.

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EXECUTIVE SUMMARY

Background

In 2001, Clarion, Forest and Venango Counties (the Tri-County area) developed a joint Municipal Waste Management Plan (Plan) as a regional planning district. This Plan was submitted to the Pennsylvania Department of Environmental Protection (DEP) in 2002, and was subsequently approved by the DEP in the same year. Since the development of the joint 2001 Plan, Venango County had moved forward with its own recent Municipal Waste Management Plan update. Therefore, early in 2012, Clarion and Forest County signed a memorandum of understanding between the two counties to continue their own joint Municipal Waste Management Plan update. This was accomplished to satisfy the legislative mandate of ACT 101 for Counties to update Plans every ten years. The following 14 sections of this Plan update describe, in detail, the joint premises of this Plan update.

The major goals of this update are:

- Provide convenient access to waste and recyclables collection options;
- Maximize the use of grant funding;
- Increase commercial participation in recycling tonnage reporting to the Counties; and
- Develop a consistent and effective approach for using donated tonnage capacity from waste disposal facilities.

The Pennsylvania Department of Environmental Protection (PADEP) "Guidelines for the Development and Implementation of County Municipal Waste Management Plan Revisions," document number 254-2212-504, serves as the basis for the development of County-wide Municipal Waste Management Plan updates. The purpose of Section 1 of this Plan update is to determine and describe the quantity of municipal solid waste (MSW) generated within Clarion and Forest Counties (Counties) that will be managed by the Integrated Solid Waste Management System described in this Plan (Plan). To estimate the quantity of MSW and residual waste generated on an annual basis from 2017 to 2021, weight records from disposal facilities reporting to the DEP, Municipal Recycling Reports (Re-TRAC™), and generation and disposal data available to the Counties were used. To estimate the net waste requiring disposal for the 10-year planning period, a calculated per capita generation rate based on a review of disposal tonnage recorded by PADEP and local transfer station information, will be used. A summary of the calculations and reasoning for the historical and future generation projections are detailed in Section 1 of the plan, as well as in Section 3.

The Municipal Waste Management Plan Update for the Region covers a term of ten years, from 2023 through 2032. The plan combines waste reduction, recycling of materials, and the transport of the remaining municipal waste to multiple disposal facilities contracted to accept the Region's municipal waste.

It is with the aforementioned four (4) primary goals, along with the PADEP planning mandate, that this update of the Municipal Waste Management Plan was conducted.

Benefits of the Plan

The Municipal Waste Management Plan Update will provide the following benefits to the Region, including its forty three (43) constituent municipalities, citizens, and businesses:

- Promote public health through the reduction of water and land pollution by proper waste disposal;
- Reduce air pollution and other environmental forms of environmental pollution through recycling efforts (as demonstrated through the EPA WARM Model);
- Reduce the amount (volume and weight) of municipal solid waste (MSW) to be disposed of in landfills through waste reduction and the recycling of materials and organics in the waste stream (i.e. household hazardous waste (HHW) and yard waste materials);
- Utilize best available, practical, cost-effective waste management technologies;
- Foster better communications on integrated waste management opportunities among the County, municipalities, residents and businesses, and the solid waste and recycling industry;
- Utilize the capabilities of private enterprise in accomplishing the desired objectives of an effective, comprehensive solid waste management system.

Major Features of the Plan

- 4 out of the 42 municipalities currently have residential access to (both public and private) recyclables collection (both curbside and drop-off).
- No municipalities or private entities operate a yard waste composting facility in the Region.
- 4 municipalities have drop-off recycling centers to offer recycling to residents in rural areas and areas that don't otherwise have access to recycling.
- Waste disposal capacity assurance for ten (10) years through contracted waste and recyclables transfer stations and disposal sites (landfills).
- Ability for waste haulers operating in the Region to utilize multiple disposal facilities, for disposal of MSW.
- HHW and e-waste recycling offered through County sponsored collection events and various private partnerships.

- A commitment from the SOI respondents to explore a joint partnership with the Region to support increased recycling activities over the ten (10) year planning period.

Goals of the Plan

The following summarizes the priority goals of the plan to be encouraged, explored, or maintained over the ten (10) year planning period:

- Assure waste disposal capacity over the ten-year planning period through long term contracts;
- Assure the proper reporting of generated waste disposal through contracts;
- Encourage contracted collection of waste and/or recyclables;
- Continue to consider alternative technologies for waste and recyclables management/disposal based on economic viability;
- Encourage the development of additional drop-off recyclables locations in municipalities that are currently underserved;
- Encourage the development of spring and fall cleanup events in each municipality;
- Encourage municipal ordinances that govern the handling of waste and recyclables;
- Explore the development of a County ordinance for the handling of waste and recyclables;
- Consider the standardization of recyclable materials collected in the Region as a joint effort with local material recovery facilities, haulers, processing facilities, municipalities, and the Region;
- Continue to explore program support and funding options;
- Explore the feasibility of expanding the materials collected at existing drop-off locations;
- Explore a food waste sharing program with institutions in the Region;
- Explore options for food waste collection and/or centralized processing in the Region;
- Explore opportunities to increase corrugated cardboard recycling in the Region;
- Encourage privatized curbside collection of e-waste and HHW material;
- Explore a year-round permanent e-waste and HHW collection location in both Counties;
- Encourage construction and demolition waste diversion and source reduction;
- Maintain and expand continuing education programs to educate/re-educate residents on proper waste and recyclables management;

Waste Disposal Capacity Assurance

As stated previously, the Counties are required to secure sufficient capacity for the disposal of municipal waste generated from within its boundaries by residents, businesses, and institutions for at least a ten-year period. A Solicitation of Interest (SOI) was developed to solicit interest from waste disposal and transfer station facilities and the execution of waste disposal agreements will secure disposal capacity over the ten-year planning period. The following facilities responded to the SOI and are anticipated to execute agreements with the Counties.

Designated Disposal Facilities:

Greentree Landfill LLC

Advance Disposal
635 Toby Road
Kersey, PA 15846
814-265-1744
Elk County

Donald Henrichs, General Manager
Donald.henrichs@advanceddisposal.com

Seneca Landfill

Vogel Holding Inc.
421 Hartman Road
Evans City, PA 1633
724-625-9000
Butler County
Edward Vogel/Marci Szymanowski
marcis@senecalandfill.com

Lake View Landfill

Waste Management
851 Robison Road East
Erie, PA 16509
814-824-7800
Erie County
Rich Carniewski
Thomas Lewis
Tom Malesiewski

Northwest Sanitary Landfill

1436 West Sunbury Road
West Sunbury, PA 16061
724-637-3552
Butler County
Dawn Keck

Mahoning Landfill

Vince Crawford
9954 Old State Rd.
Chardon OH, 44024
440-226-6321

Designated Transfer Stations:

WM Warren County Transfer Station

18380 Paint Blvd
Shippenville, PA 16254
814-226-4602
Clarion County
Edward Yahner
edward.yahner@advanceddisposal.com

Waste Management Transfer Station

32870 Route 6
Pittsfield, PA
800-338-8971
814-229-4977
Warren County
Edward Yahner

TriCounty Transfer Station

159 TCI Park Dr
Grove City, PA 16127
724-748-4705
Mercer County
Marc Szymanowski
marcis@senecalandfill.com

Valley Waste Service Inc. Transfer Station

261 Wallace Run Road
Beaver Falls, PA 15010
724-843-9373
Edward R. Vogel

The Municipal Waste Management Plan combines the continued use of waste reduction and curbside/drop-off recycling with the composting of organic waste, the collection of HHW and e-waste through both public and private partnerships, and the use of multiple landfills under long-term contracts and transfer stations for the disposal of remaining municipal waste.

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GLOSSARY OF TERMS

- A -

Act 101 – Statewide recycling in Pennsylvania began in 1988 with the Municipal Waste Planning Recycling and Waste Reduction Act (Act 101) that requires larger municipalities to recycle. The Act established a \$2-per-ton fee on all waste disposed at municipal waste landfills and WTE facilities, and established grants for local collection programs, public education, materials processing and composting facilities, equipment, and technical training. Act 101 also requires each county to develop plans to manage its own wastes and assure a minimum of ten years disposal capacity.

Agricultural Wastes – Domestic animal manure or residuals in liquid or solid form generated in the production of poultry, livestock, fur-bearing animals, and their products. Agricultural waste includes residuals generated in the production and harvesting but not of subsequent processing of all agricultural, horticultural, or aqua-cultural commodities. Agricultural waste does not include land clearing debris unless the cleared land is intended solely for agricultural purposes.

Ash – Residue from the burning of wood, solid waste, coal, and other combustible materials (also referred to as combustion ash).

- B -

Biodegradable – Capable of being decomposed by bacteria or other living organisms.

Biosolids – Treated sewage sludge that is intended to be used as a fertilizer to improve and maintain productive soils and stimulate plant growth.

Bulky Item – Items whose large size or weight precludes or complicates their handling by normal collection, processing, or disposal methods. Many curbside waste collection programs handle bulky items such as furniture, mattresses, box-springs and similar items.

- C -

Closure – The cessation of operation of a solid waste management facility and the act of securing such a facility so that it will pose no significant threat to human health or the environment.

Code of Federal Regulations (CFR) – Document containing the rules established in the Federal Register (FR) by the Executive Departments of the Federal Government.

Commercial Waste – Solid, non-hazardous waste generated by commercial establishments used mainly for the purposes of a trade or business or for the purpose of sport, recreation, education or entertainment.

Compact Fluorescent Lamp (CFL) – A fluorescent lamp designed to replace an incandescent light bulb. CFLs use one-fifth to one-third the electric power and last eight (8) to fifteen (15) times longer.

Compost – The product of composting.

Compostable Plastic – Compostable plastics are designed to biodegrade into soil conditioning material, also known as compost. The best way to dispose of compostable plastics is to send them to an industrial or commercial composting facility where they will break down with the right mixture of heat, microbes, and time.

Composting – The process by which organic solid waste is biologically decomposed under controlled anaerobic or aerobic conditions to yield a humus-like product.

Construction and Demolition (C&D) Waste – Solid waste resulting from the construction or demolition of buildings and other structures, including, but not limited to, wood, plaster, metals, asphaltic substances, bricks, block and unsegregated concrete. The term does not including the following if they are separate from other waste and are used as clean fill; uncontaminated soil, rock, stone, gravel, brick and block, concrete and used asphalt, waste from land clearing, grubbing and excavation, including trees, brush, stumps and vegetative material.

Contamination – Recycling contamination is when incorrect items/materials are introduced to the system or when the right items/materials are prepared incorrectly (i.e., food residue in containers, recyclables in plastic bags, shrink wrap recycling mixed in with cardboard, etc.).

County – Clarion and/or Forest County, Pennsylvania

- D -

Department – The Department of Environmental Protection of the Commonwealth, and its authorized representatives.

Department of Conservation and Natural Resources (DCNR) – Established July 1, 1995, the agency responsible for maintaining and preserving the state’s parks and forests, providing information on the state’s natural resources and working with communities to benefit local recreation and natural areas.

Drop-Off Location – A facility or location primarily for residents to drop off recyclables.

Dual Stream – A recycling system in which traditional recyclable materials are collected in two streams: commingled containers (e.g. plastic bottles and containers, glass bottles and jars, and metal cans) and fiber (various paper grades such as cardboard, newspaper, magazines, junk mail, paperboard, etc.).

- E -

Electronic Waste (or e-waste) – Discarded electrical or electronic devices. Many of these products can be reused, refurbished, disposed, or recycled. Common electronic products include computers, televisions, VCRs, stereos, copiers, and fax machines.

Environmental Protection Agency (EPA) – Federal agency responsible for providing regulations, guidance, and enforcement of solid waste management activities.

- F -

Facility – Buildings, structures, designated areas and other appurtenances or improvements where municipal waste disposal, processing or beneficial use is permitted or takes place.

Fatal Flaw Analysis – An evaluation that may determine the viability of a project or endeavor by evaluating potential problems that may prevent the project or endeavor from moving forward. Aspects that may be evaluated during a fatal flaw analysis include, but are not limited to, permitting, environmental issues, zoning regulations, land development regulations, geologic conditions, costs, equipment needs, available markets, etc.

- G -

Grasscycling – The act of allowing grass clippings to remain on the lawn after mowing to return nutrients back to the soil.

Ground Water – Water beneath the surface of the ground, within a zone of saturation.

- H -

Hazardous Waste – Solid waste, or a combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, an increase in mortality, or an increase in serious irrevocable or incapacitating reversible illness, or may pose a substantial present or potential hazard to human health or the environment when improperly transported, disposed of, stored, treated, or otherwise managed. Does not fall under the definition of MSW.

Home Healthcare Waste – “Used sharps,” such as needles, syringes, lancets and other sharp objects, as well as soiled bandages, disposable sheets, and gloves.

Household Hazardous Waste (HHW) – Waste generated by a household that could be chemically or physically classified as a hazardous waste under the standards of Article VII. For the purpose of this definition, the term “household” includes those places described as “households” in 40 CFR 261.4(b)(1).

- I -

Incinerator – An apparatus for burning waste material, especially industrial waste, at high temperatures until it is reduced to ash.

Industrial Solid Waste – Any liquid, gas, solid, or other waste substance, or combination thereof, resulting from any process of industry, manufacturing, trade or business; or the development of any natural resource, including agriculture.

Infectious waste – A subcategory of the broader medical waste stream. Infectious waste includes, but is not limited to, cultures and stocks of infectious agents, pathological wastes, waste human blood and blood products, sharps used in patient and animal care, laboratory wastes and dialysis waste.

Institutional Establishment – An establishment engaged in services, including, but not limited to, hospitals, nursing homes, orphanages, schools and universities.

- L -

Landfill – An engineered solid waste disposal facility, which is an area of land or an excavation where wastes are placed in a manner that minimizes public health and environmental hazards and is designed, installed, and operated according to the provisions of EPA (under CFR) and PADEP regulations; a solid waste disposal facility, which is an area of land or an excavation where wastes are or have been placed for disposal, for which a permit other than a general permit is required.

- M -

Material Recovery Facility (MRF) – A specialized plant that receives, separates and prepares recyclable materials for marketing to end-user manufacturers. The materials which come out of the MRF are clean, properly sorted and relatively free of impurities.

Municipal Landfill (also known as Sanitary Landfill) – A solid waste acceptance facility that is designed, installed, and operated so that all types of waste generated by a community, except waste specifically prohibited by the regulations or a permit issued under the regulations, can be accepted.

Municipality – A city, borough, incorporated town, township, county or an authority created by any of the aforementioned.

Municipal Solid Waste (MSW) – Garbage, refuse, industrial lunchroom or office waste and other material, including solid, liquid, semisolid, or contained gaseous material resulting from the operation of residential, municipal, commercial, or institutional establishments and from community activities; and sludge not meeting the definition of residual or hazardous waste under this section from a municipal, commercial or institutional water supply treatment plant, waste water treatment plant or air pollution control facility.

- O -

Organic Waste – Material that is biodegradable and comes from either a plant or animal.

- P -

Pay-As-You-Throw – A collection program (also known as unit pricing or variable-rate pricing) where residents are charged for the collection of municipal solid waste—ordinary household trash—based on the amount they throw away. This creates a direct economic incentive to recycle more and to generate less waste.

Pennsylvania Department of Environmental Protection (PADEP) – The Department of Environmental Protection of the Commonwealth, and its authorized representatives.

Permit – A permit issued by PADEP, or the respective state agency, to operate a municipal waste disposal or processing facility, or to beneficially use municipal waste. The term includes general permit, permit-by-rule, permit modification, permit reissuance and permit renewal.

Pharmaceutical Waste – Any waste which contains medicinal drugs that are expired, unused, contaminated, damaged or no longer needed.

Plan Revision (also Plan Update) – A change that affects the contents, terms or conditions of a PADEP approved plan under the Municipal Waste Planning, Recycling and Waste Reduction Act.

Plastic Film – A thin continuous polymeric material used to separate areas or volumes, hold items, act as a barrier, or printable surface.

Processing Facility – A facility where solid waste or recycling materials are processed.

Professional Recyclers of Pennsylvania (PROP) – An association of recycling professionals working to ensure that all recyclable materials in the Pennsylvania waste stream are optimally recycled. PROP uses a

variety of programs and tools to connect, educate and inform their members and the recycling community to help them develop and maintain the skills, knowledge and ability needed to realize their vision.

- R -

Raw material – An unprocessed natural resource or product used in manufacturing.

Recovery Rate – This figure refers to the amount of material that gets a second life, compared to the total amount that ends up in a landfill.

Recycling – The collection, separation, recovery and sale or reuse of metals, glass, paper, plastics and other materials which would otherwise be disposed or processed as municipal waste.

Recycling Facility – A facility employing a technology that is a process that separates or classifies municipal waste and creates or recovers reusable materials that can be sold to or reused by a manufacturer as a substitute for or a supplement to virgin raw materials. The term does not include transfer facilities, municipal waste landfills, composting facilities, or resource recovery facilities.

Re-TRAC Connect (Re-TRAC) – Waste diversion software that sustainability professionals, including municipal and county recycling coordinators, trust to efficiently collect, manage, and analyze recycling and solid waste data. As of February 2018, county recycling coordinators are required to update and maintain Re-TRAC Connect with county-wide and municipal recycling data.

Refuse – Synonymous with solid waste.

Regulated Medical Waste (RMW) – Also known as ‘biohazardous’ waste or ‘infectious medical’ waste, is the portion of the waste stream that may be contaminated by blood, body fluids or other potentially infectious materials, thus posing a significant risk of transmitting infection.

Residential Waste – Mixed household wastes, including yard wastes, generated by the general population.

Residual Waste – Garbage, refuse, other discarded material or other waste, including solid, liquid, semisolid or contained gaseous materials resulting from industrial, mining and agricultural operations; and sludge from an industrial, mining or agricultural water supply treatment facility, wastewater treatment facility or air pollution control facility, if it is not hazardous. The term does not include coal refuse as defined in the Coal Refuse Disposal Control Act. The term does not include treatment sludges from coal mine drainage treatment plants, disposal of which is being carried on under and in compliance with a valid permit issued under the Clean Streams Law.

Resource Conservation and Recovery Act (RCRA) – The federal law that provides guidelines and standards for the management of both hazardous (RCRA Subtitle C) and non-hazardous (RCRA Subtitle D) waste. More specifically for Subtitle C, RCRA gives EPA the authority to control hazardous waste from “cradle-to-grave.” This includes the generation, transportation, treatment, storage and disposal of hazardous waste. With respect to Subtitle D, RCRA sets forth a framework for the management of non-hazardous solid wastes (such as the disposal of MSW in landfills). For Subtitle D, EPA developed detailed technical criteria for solid waste disposal facilities, which includes specific provisions on location, operation, design, ground water and gas monitoring, corrective action, closure and post-closure care and financial assurance. These regulations are contained in the Code of Federal Regulations (40 CFR), parts 257 and 258. EPA delegates authority for oversight of local and state-level solid waste programs to authorized state agencies.

Resource Recovery Facility – A processing facility that provides for the extraction and utilization of materials or energy from municipal waste. The term includes a facility that mechanically extracts materials from municipal waste, a combustion facility that converts the organic fraction of municipal waste to usable energy and a chemical and biological process that converts municipal waste into a fuel product.

- S -

Sanitary Landfill (also refer to Municipal Landfill) – An engineered method of disposing of solid wastes on land in a manner that minimizes public health and environmental hazards, and is designed, installed, and operated under strict regulations of the PADEP and the US EPA.

Septage – Excrement and other waste material contained in or removed from a septic tank.

Sewage Sludge – Liquid or solid sludges and other residues from a municipal sewage collection and treatment system; and liquid or solid sludges and other residues from septic and holding tank pumpings from commercial, institutional or residential establishments. The term includes materials derived from sewage sludge. The term does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator, grit and screenings generated during preliminary treatment of sewage sludge at a municipal sewage collection and treatment system, or grit, screenings and nonorganic objects from septic and holding tank pumpings.

Single Stream Recycling – A recycling collection program that combines all traditional recyclable material (i.e. fiber and containers) in a single receptacle for collection.

Site – The area of land within the property boundaries of a solid waste management facility where one or more solid waste processing, resource recovery, recycling, storage, or disposal areas are located.

Solid Waste – Waste, including, but not limited to, municipal, residual or hazardous wastes, including solid, liquid, semisolid or contained gaseous materials.

Solid Waste Acceptance Facility – Any landfill, incinerator, transfer station, or processing facility whose primary purpose is to dispose of, treat, consolidate, or process solid waste.

Solid Waste Advisory Committee (SWAC) – A committee formed to revise the county municipal SWMP every ten years.

Solid Waste Management Plan (SWMP) – A comprehensive plan for an adequate municipal waste management system in accordance with Chapter 272, Subchapter C.

Solid Waste Processing Facility – A facility where a combination of structures, machinery, or devices are used to reduce or alter the volume, chemical characteristics, or physical characteristics of solid waste. This can include sorting for diversion of recyclables. In general, processes are performed either to remove recyclables or to reduce the volume that the waste occupies during transport or at final disposal (e.g., shredding). A wide variety of solid waste can be processed at these facilities. A typical solid waste processing facility accepts MSW, C&D, metals, wood waste, etc.

Source Reduction – The reduction or elimination of the quantity or toxicity of residual waste generated, which may be achieved through changes within the production process, including process modifications, feedstock substitutions, improvements in feedstock purity, shipping and packing modifications, housekeeping and management practices, increases in the efficiency of machinery and recycling within a process. The term does not include dewatering, compaction, reclamation, or the use or reuse of waste.

Source Separation – The process of separating a recyclable material or group of recyclable materials performed by the generator prior to collection.

Special Handling Wastes – Solid waste that requires the application of special storage, collection, transportation, processing or disposal techniques due to the quantity of material generated or its unique physical, chemical or biological characteristics. The term includes dredged material, sewage sludge, infectious waste, chemotherapeutic waste, ash residue from a solid waste incineration facility, friable asbestos containing waste, PCB containing waste and waste oil that is not hazardous waste.

- T -

Transfer Facility – A facility that receives and processes or temporarily stores municipal or residual waste at a location other than the generation site, and which facilitates the transportation or transfer of municipal or residual waste to a processing or disposal facility. The term includes a facility that uses a method or technology to convert part or all of the waste materials for offsite reuse. The term does not include a collecting or processing center that is only for source-separated recyclable materials, including clear glass, colored glass, aluminum, steel and bimetallic cans, high-grade office paper, newsprint, corrugated paper and plastics.

- U -

Used Oil – A petroleum-based or synthetic oil which is used in an internal combustion engine as an engine lubricant, or as a product for lubricating motor vehicle transmissions, gears or axles which, through use, storage or handling has become unsuitable for its original purpose due to the presence of chemical or physical impurities or loss of original properties.

- W -

Waste – A material whose original purpose has been completed and which is directed to a disposal, processing or beneficial use facility or is otherwise disposed of, processed or beneficially used. The term does not include source separated recyclable materials, materials approved by PADEP prior to May 27, 1997, or material which is beneficially used in accordance with a general permit issued under Subchapter I or Subchapter J if a term or condition of the general permit excludes the material from being regulated as a waste.

Waste-To-Energy Facility – A facility that converts solid waste and organic materials into electricity by the form of combustion, also described as "thermal treatment". Incineration of waste materials converts the waste into incinerator bottom ash, flue gases, and particulates. Boilers recover thermal energy in the form of high-pressure steam, which is then converted into electrical energy in the turbine-generator. The flue gases are cleaned for pollutants before they are dispersed in the atmosphere.

Waste Oil – Oil refined from crude oil or synthetically produced, used and as a result of the use, contaminated by physical or chemical impurities. The term includes used oil.

Waste Reduction – Design, manufacture or use of a product to minimize weight of a municipal waste that requires processing or disposal, including, but not limited to design or manufacturing activities which minimize the weight or volume of materials contained in a product, or increase durability or recyclability; the use of products that contain as little material as possible, are capable of being reused or recycled or have an extended useful life.

Wastewater Treatment Plant (WWTP) – WWTPs remove most pollutants from wastewater so that it can be returned to the water cycle with minimal environmental issues or reused for various purposes. By-products from wastewater treatment plants, such as grit and sewage sludge may also be treated in a wastewater treatment plant.

White Goods – Discarded refrigerators, ranges, washers, water heaters, freezers, and other similar domestic and commercial appliances.

- Y -

Yard Waste – Vegetative matter from landscape maintenance or land clearing operations such as tree and shrub trimmings, grass clippings, leaves, trees brush and stumps.

Yard Waste Composting Facility – A facility that is used to compost leaf waste, or leaf waste and grass clippings, garden residue, tree trimmings, chipped shrubbery and other vegetative material. The term includes land affected during the lifetime of the operation, including, but not limited to, areas where composting actually occurs, support facilities, borrow areas, offices, equipment sheds, air and water pollution control and treatment systems, access roads, associated onsite or contiguous collection and transportation activities, and other activities in which the natural surface has been disturbed as a result of or incidental to operation of the facility.

ACRONYM LIST

AD	Advanced Disposal	PROP	Professional Recyclers of Pennsylvania
BTU	British Thermal Unit		
B&L	Barton & Loguidice, DPC	PS	Polystyrene
CDRA	Covered Device Recycling Act	RFP	Request for Proposal
CFL	Compact Fluorescent Lamp	RMW	Regulated Medical Waste
CPU	Central Processing Unit	SOI	Solicitation of Interest
CRT	Cathode Ray Tube	SWAC	Solid Waste Advisory Committee
CY	Cubic Yard		
C&D	Construction and Demolition	SWMP	Solid Waste Management Plan
EPA	Environmental Protection Agency	TPY	Tons per Year
E-waste	Electronic Waste	UBC	Used Beverage Container
GHG	Greenhouse Gas	WARM	Waste Reduction Model
GPD	Gallons per Day	WM	Waste Management
GVW	Gross Vehicle Weight	WTE	Waste-to-Energy
HDPE	High Density Polyethylene	WWTP	Wastewater Treatment Plant
HHW	Household Hazardous Waste		
ICW	Infectious and Chemotherapeutic Waste		
KPB	Keep Pennsylvania Beautiful		
LDPE	Low Density Polyethylene		
MGD	Million Gallons per Day		
MRF	Material Recovery Facility		
MSW	Municipal Solid Waste		
MTCE	Metric Tons of Carbon Equivalent		
MTCO2E	Metric Tons of Carbon Dioxide Equivalent		
OCC	Old Corrugated Containers		
ONP	Old Newspaper		
O&M	Operation and Maintenance		
PADEP	Pennsylvania Department of Environmental Protection		
PBR	Permit by Rule		
PDA	Personal Digital Assistant		
PET	Polyethylene Terephthalate		
PP	Polypropylene		

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INTRODUCTION

Introduction to the Clarion and Forest County Solid Waste Management Plan

On July 28, 1988, the Pennsylvania Municipal Waste Planning, Recycling and Waste Reduction Act (Act 101) was enacted. This Act provided counties with the duty and primary responsibility to plan for the processing and disposal of municipal waste generated within their boundaries and required counties to develop and submit a Solid Waste Master Plan (SWMP, Plan) to the Pennsylvania DER for approval by January 1991. Among other requirements, the Plan was required to provide for assured disposal capacity for the processing and disposal of municipal waste generated within the county for at least ten years.

Given the expiration of the disposal agreements with the designated facilities in June 2023, the need to provide for at least ten years of assured capacity, and the obligations under Act 101 to update the Plan on a regular basis, as well as the need to address the Counties' obligations under the Commonwealth's revised 35% recycling goal, the Counties initiated steps toward the development of the current Plan Revision in the Winter of 2022.

The purpose of the 2023 Plan Revision is to: 1) provide for an additional ten years of disposal capacity to serve the needs of the Counties and its municipalities through an open, fair and competitive process; 2) address how the Counties will take steps to meet and/or maintain the statewide 35% recycling goal over time; 3) update relevant demographic data, waste generation and disposal trends and collection practices, and; 4) develop goals and recommendations to support recycling in the Counties while investigating alternative funding for these programs.

To provide assistance in this effort, Clarion County (on behalf of Clarion and Forest Counties) applied for a PADEP Municipal Waste Planning Grant under Act 101 to have Barton & Loguidice D.P.C. (B&L), a contracted consultant, provide recommendations to the Counties to address the issue of improving their recycling programs and increasing and/or maintaining the rate of recycling within the Counties, while exploring funding opportunities to support these efforts.

The 2023 Plan Revision process was officially initiated via a pre-application meeting and subsequent emails with PADEP where the Department agreed that the Plan Revision shall be non-substantial. A newly constituted SWAC for each County was appointed in the summer of 2021 and met for the first time on August 12, 2021 to assist the Counties, the consultants and legal counsel in this effort.

This Plan Revision has been prepared so that the Counties can:

- Consolidate prior revisions into one comprehensive planning document for the Region;
- Address intended efforts in the next planning cycle to increase opportunities for recycling toward meeting and/or maintaining the Commonwealth's 35% recycling goal;
- Provide disposal capacity assurance for County generated waste over the ten-year planning period.

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CHAPTER 1 - DESCRIPTION OF WASTE

1.1 Purpose

The purpose of this chapter is to describe and determine the quantity of municipal solid waste (MSW) generated in Clarion and Forest Counties that will be managed by the system defined in this Plan. To estimate the quantity of present and projected municipal waste generated on an annual basis, current and historical quantity data was used, including:

- Municipal Waste Management Plan for Clarion and Forest Counties (2014)
- PADEP Origin/County Waste Destination Reports for the period January 2016 through December 2021
- Clarion and Forest County Re-TRAC Reports for January 2016 through December 2021

1.2 Characteristics of Clarion County

Clarion County is a western Pennsylvania County situated on the Allegheny Plateau. The Allegheny River drains the western part of the county and also takes the waters of the Clarion River, which flow through it, from Jefferson County on the east. Established on March 11, 1839 from parts of Venango and Armstrong Counties, Clarion County became the 54th county in the state to be formed. Clarion County had a 2020 population of 37,241 according to the U.S. Bureau of the Census and is 610 square miles in area.

Clarion County produces a wide variety of manufactured goods including mobile homes, fiberboard and laminate flooring. It is also the home of Clarion University of Pennsylvania. Picturesque valleys carved from the mountains by the Allegheny and Clarion Rivers and their tributaries, which, along with the autumn foliage, attract visitors to Clarion County, enhance the county's natural beauty. The rivers, along with Cook Forest State Park, are a great source of recreation in this area. Clarion County is also home to Foxburg Country Club, which is the oldest golf course in continuous use in the United States. To commemorate this historical location, the club holds an annual Hickory Championship where the players play with clubs and rules of pre-1900s golf. Foxburg Country Club is also home to the American Golf Hall of Fame.

Clarion is known as the "Autumn Leaf Capital," and the peaceful beauty of nature is part of the character of the county. Clarion County celebrates this beauty annually with a weeklong celebration in the fall. Along with increasing recognition and growth as a business and industrial center for the 21st Century, Clarion County offers the best of all worlds, that of natural beauty to industrial growth to higher education.

The County consists of thirty four (34) municipalities that include twelve (12) boroughs, and twenty two (22) townships. Figure 1-1 shows Clarion County and its municipalities.

1.3 Characteristics of Forest County

Forest County is located in western Pennsylvania and the original forested nature of the County still exists today. Forest County had a 2020 population of 7,032 according to the U.S. Bureau of the Census and is 430 square miles in area. This makes Forest County the third least populated county in Pennsylvania.

There are numerous recreational opportunities within the County's gently rolling mountains and green valleys. Both Allegheny National Forest and Cook Forest State Park offer many amenities for the outdoor adventurer. The Allegheny National Forest has hundreds of miles of ATV, snowmobile, hiking and horseback riding trails and is also one of the few places in the country where you can see synchronized fireflies dance.

Marienville, located in Forest County, is the gateway to the Allegheny National Forest and its hundreds of miles of trails. Each May and October, nearly 1,000 ATV enthusiasts come to Marienville for Tour-De-Forest, an organized leisure ride. The annual winter festival features an inspiring snowmobile torchlight parade. Nature lovers can also explore Buzzard Swamp for wildlife and bird watching, including bald eagle and osprey.

Tionesta, located in Forest County, is a charming town located on the banks of the Wild & Scenic Allegheny River. The Market Village offers shoppers a collection of local merchants offering a variety of handmade treasures. Early summer, is Firefly season when the night is filled with spectacular synchronized light shows in the Allegheny National Forest. Each July, cowboys and cowgirls compete in the 3-night outdoor Allegheny Mountain Championship Rodeo. The town's Native American heritage is celebrated each August with the Tionesta Indian Festival. Tionesta also boasts Pennsylvania's only in-land functioning lighthouse, which is open for tours several times per year.

Cook Forest State Park gives visitors the chance to explore ancient stands of giant trees. It has been called "America's Best Old-Growth Forest". The Clarion River flows through the park and is popular with both paddlers and fishermen. Seneca Point and the nearby fire tower offer spectacular views of the river valley below.

Allegheny National Forest boasts over a half-million acres of public land with hundreds of miles of trails designated for hiking, biking, cross-country skiing, snowmobiling, ATV, and horseback riding. Visitors can also enjoy swimming, boating, fishing, hunting and camping. Some of the most popular trails include the Marienville & Timberline ATV trails, Spring Creek Horse Trail, North Country Trail, and Minister Creek Trail.

The County consists of nine (9) municipalities that include one (1) borough and eight (8) townships. Figure 1-2 shows Forest County and its municipalities.

Figure 1-1
Clarion County Municipalities

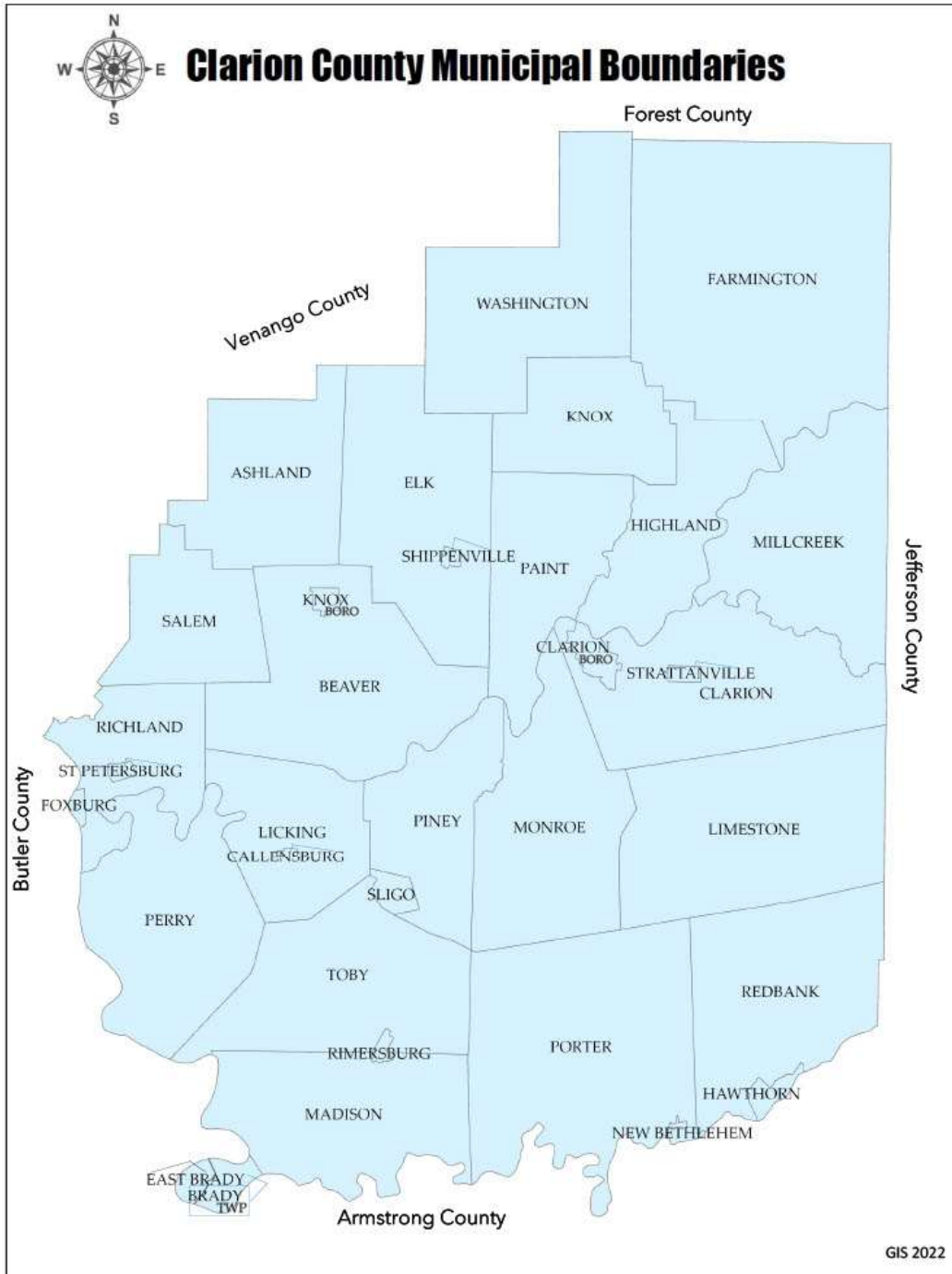


Image provided by Clarion County Department of Planning & Development, 10.2022

Figure 1-2
Forest County Municipalities

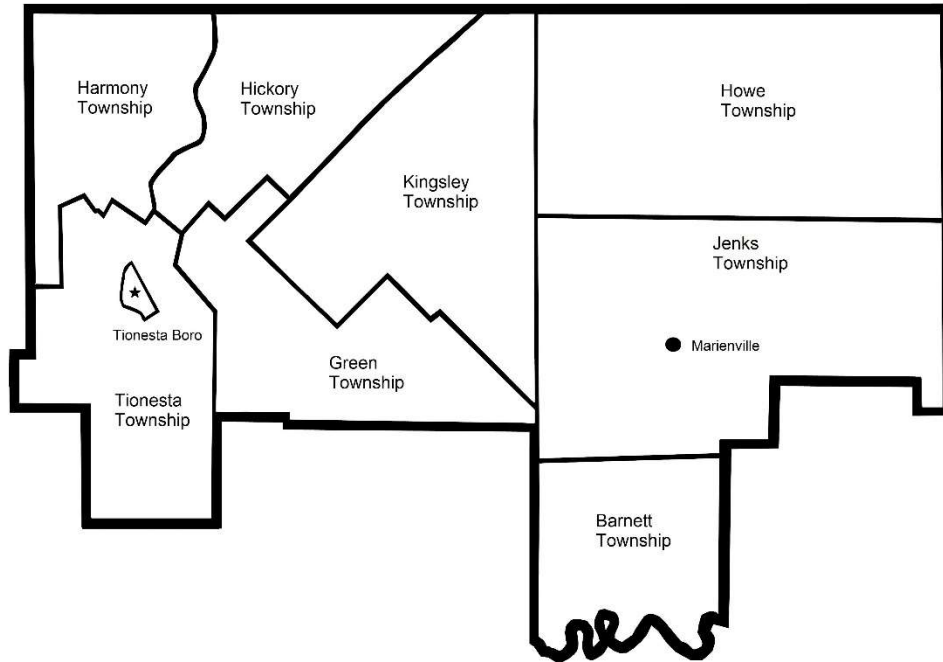


Image provided by Forest County Conservation District and Planning Department, 10.2022

1.4 Residential, Commercial, and Institutional Fraction of the Municipal Waste Stream

The typical municipal waste portion of the Region's solid waste stream consists of waste generated by residential (homes, apartments), commercial (offices, retail stores, restaurants, industrial lunchrooms and offices, etc.), and institutional sources (municipal buildings, libraries, schools, etc.) and community events. This material does not include sewage sludge generated by on-lot septic systems and wastewater treatment plants (WWTPs), regulated medical waste (RMW) generated mainly from hospitals and other medical institutions, ash material generated from municipal waste incinerators and other industrial processes, and asbestos material generated from industrial processes and demolition projects. Table 1-1 shows the total quantities of residential, commercial, and institutional waste and construction/demolition debris processed or disposed of and recyclables diverted from Clarion County between 2016 through 2021, as reported in the PADEP Waste Destination Reports.

Table 1-1
Clarion County Residential, Commercial and Institutional Waste
and Recyclables Quantities for 2016– 2021 (in Tons)

	2016	2017	2018	2019	2020	2021
Typical MSW Tonnage*	38,891	38,961	42,655	41,280	39,116	40,102
Recycling Tonnage**	258	275	783	360	334	-
Total	39,149	39,237	43,438	41,639	39,451	40,102

* Tonnages include typical MSW and C&D material taken to in-state landfills. In-state tonnages were obtained from PADEP Waste Destination Reports.

** Tonnages obtained from Re-TRAC Reports for Clarion County. Tonnage totals for 2021 were not available at the time of writing this plan update.

A review of Table 1-1 shows the amount of municipal waste disposed of by Clarion County residents and businesses from 2016 through 2021 has remained relatively steady, and the quantity of recyclables diverted has been relatively steady since 2016, with a spike in tonnage reported by Clarion Borough in 2018.

Table 1-2 shows the total quantities of residential, commercial, and institutional waste and construction/demolition debris processed or disposed of and recyclables diverted from Forest County between 2016 through 2021, as reported in the PADEP Waste Destination Reports.

Table 1-2
Forest County Residential, Commercial and Institutional Waste
and Recyclables Quantities for 2016– 2021 (in Tons)

	2016	2017	2018	2019	2020	2021
Typical MSW Tonnage*	109	131	128	15	4	6,340.7
Recycling Tonnage**	0	0	-	1.41	0	5.33
Total	109	131	128	16.41	4	6,346

* Tonnages include typical MSW and C&D material taken to in-state landfills. In-state tonnages were obtained from PADEP Waste Destination Reports.

** Tonnages obtained from Re-TRAC Reports for Forest County. The recycling report submitted in ReTrac for 2018 signified that there was tonnage to report, but no tonnage amounts were submitted.

As part of the public meeting process, it was brought to light that these tonnage totals did not appear to account for all of the Forest County typical MSW material and that the tonnage reported in 2020 and 2021, appeared incorrect. To account for these concerns, the tonnage totals for both MSW and recyclables were evaluated on a regional basis and it was found that the disposal and diversion remained relatively consistent year to year, when evaluated on a regional basis. For the remainder of this Plan, the Regional MSW and recycling tonnages will be referenced and utilized and subsequent projections will be based on the Regional tonnages.

**Table 1-3
Regional Residential, Commercial and Institutional Waste
and Recyclables Quantities for 2016– 2021 (in Tons)**

	2016	2017	2018	2019	2020	2021
Typical MSW Tonnage*	39,000	39,092	42,783	41,295	39,120	46,443
Recycling Tonnage**	258	275	783	361	334	5
Total	39,258	39,368	43,566	41,656	39,454	46,859

* Tonnages include typical MSW and C&D material taken to in-state landfills. In-state tonnages were obtained from PADEP Waste Destination Reports.

** Tonnages obtained from Re-TRAC Reports for Clarion and Forest County

A review of Table 1-3 shows the amount of municipal waste disposed of by Regional residents and businesses from 2016 through 2021 remains relatively steady, other than the 2021 reported tonnage quantity which appears to be an outlier. The quantity of recyclables diverted has been relatively steady over the past several year, with a higher quantity reported by Clarion Borough in year 2018.

1.5 Yard Waste and Recycling

Yard waste materials are organics that readily decompose in either an agricultural land application process or a composting system. These materials are typically made up of grass, leaves and brush (i.e. small branches, twigs, etc.) from general yard maintenance. Yard waste does not include materials generated by tree removal, land clearing or home renovation projects.



There are currently no municipalities that have public or private residential drop-off locations for leaf and yard waste processing and composting. According to the PADEP, there are other options for composting

leaf and yard waste if a drop-off or processing facility is not available. Backyard composting and grasscycling are practices that residents can use at their own home. For successful backyard composting, a good mix of organic materials is needed, consisting of two parts “browns” (materials such as dead leaves that are high in carbon) and one part “greens” (such as fresh grass clippings and garden pruning’s that are high in nitrogen). The other option, Grasscycling, encourages residents to leaves grass clippings on their lawn, where they break down in seven (7) to fourteen (14) days.

1.6 Household Hazardous Waste

According to PADEP, household hazardous wastes (HHW) are those wastes produced in households that are hazardous in nature, but are not regulated as hazardous waste, under federal and state laws. Each person in Pennsylvania produces an average of four (4) pounds of HHW each year. Included are items such as old paints and paint related products, pesticides, pool chemicals, drain cleaners, degreasers and other car care products. Such consumer waste products, if carelessly managed, can, and frequently do, create environmental and public health hazards.



According to PADEP, the following is an outline for residents in any county in Pennsylvania on how to manage HHW material:

- The best method of managing HHW is to prevent its generation in the first place. This involves selecting the least toxic item for use and buying only the amounts necessary to complete the task at hand.
- If the material is damaged or expired, yet is still useable, check to see if others might be able to use it. Check with community groups to see if they can use the product.
- If the material is not useable and/or if such “outlets” are not available, it shall be taken to your community’s HHW collection program, if one exists. Such programs will ensure that your HHW is recycled or, otherwise, managed, in an environmentally preferable way, under the hazardous waste provisions of the law.
 - If you have used oil, take it to a used oil collection site.
 - Spent lead acid batteries can be returned to sellers. In Pennsylvania, dealers are required to take old batteries when new ones are purchased. Spent lead acid batteries may not be discarded in landfills.
 - Used oil and intact lead acid batteries from households are not considered to be hazardous wastes in Pennsylvania. However, they are frequently generated in households and are thus often grouped in the HHW category. They are also frequently included in HHW collection programs.
- If you must discard of the material, you may legally discard of it in your regular trash pick-up, provided:
 - You have read the label and complied with any disposal directions.

- Liquids have either been allowed to evaporate (if water based) or absorbed (if non-water based) in some material such as vermiculite, cat litter, or sawdust, so that there are no freestanding liquids.
- The remaining residue has been packaged to prevent leakage while the material is being transported to the disposal facility.
- The material is placed out in small quantities, over several collection periods.

1.7 Covered Devices (Electronics) Recycling

According to PADEP, electronic waste (e-waste) includes computers, monitors, televisions, audio equipment, printers, and other electronic devices. Consumer electronic products are characterized by rapidly evolving technology and a relatively short product life. Advances in technology for all electronic equipment soon renders them obsolete. The average lifespan of a computer is about three (3) to four (4) years. According to a 2020 survey by Statista, the average American had access to more than ten (10) connected devices in their household. This included more than two (2) computers on average and more than two (2) mobile phones. In addition to computers and mobile phones, the electronics included smart TVs, tablets, connected TV boxes, video game consoles, smart speakers, smartwatches, and virtual reality devices. According to manufacturers, a smart TV has a lifespan between four (4) and 10-years when in active use. Per Statista, the average U.S. household had between two (2) and three (3) TVs in 2015. Based on the 2020 survey, the average number of smart TVs per household has fallen just below two (2).



Electronic equipment contains metals that, if not properly managed or contained, can become hazardous wastes. The “Covered Device Recycling Act” (House Bill 708), PA Act 108 of 2010, establishes a recycling program for certain covered devices; imposes duties on manufacturers and retailers of certain covered devices; provides for the powers and duties of PADEP including enforcement; establishes the Electronic Materials Recycling Account in the General Fund, and; prescribes penalties for noncompliance.

In January 2013, a disposal ban on covered devices went into effect, after which no person was allowed to dispose of a covered device or any of its components with their municipal waste. Residents are now responsible for properly recycling covered devices.



1.8 Bulky Waste

Bulky wastes are those wastes that include household furnishings, and white goods or appliances such as stoves, refrigerators, washing machines, dryers, mattresses and box springs, rugs, lawn mowers, auto parts, etc. Most bulky wastes are disposed of at a solid waste facility or processed for resource recovery. The statewide illegal dump surveys confirmed that hard-to-recycle items, such as tires, appliances, furniture and other bulky waste items, make up a

significant portion of the waste identified at illegal dump sites throughout the State of Pennsylvania.



1.9 Construction and Demolition Waste

Typical C&D waste materials include lumber, drywall, metals, masonry (brick, concrete, etc.), carpet, plastic, pipe, rocks, dirt, paper, cardboard, or green waste related to land development or construction-type projects. C&D waste projections are included as part of the typical MSW tonnage projections.

1.10 Biosolids and Septage Waste

Biosolids are nutrient rich organic materials resulting from the treatment of domestic sewage in a wastewater treatment facility. Biosolids are a beneficial resource, containing essential plant nutrients and organic matter and are recycled as a fertilizer and soil amendment. Septage is a fluid mixture of untreated and partially treated sewage solids, liquids and sludge of human or domestic origin.

There are three (3) municipal WWTPs in Clarion County and one (1) municipal WWTP in Forest County.

Per the PADEP Waste Destination Reports, the average annual sewage sludge disposed in landfills serving the Region over the past 6 years was approximately 1,500 tons. The landfills that have accepted sewage sludge from the Region in that timeframe are listed below:

- Advanced Disposal Services Greentree Landfill
- Greenridge Reclamation Landfill
- Northwest Sanitary Landfill
- Seneca Landfill
- Casella Waste Management of PA
- Blue Ridge Landfill

Survey responses were not received from the majority of the WWTPs surveyed under development of this Plan Revision. Since there are no known land application sites in the Region, it is assumed that all sewage sludge generated within the Region is disposed of by landfilling.

1.11 Processed Medical Waste

Processed medical waste, formerly known as regulated medical and chemotherapeutic waste (RMW), is the portion of the waste stream that may be contaminated by blood, bodily fluids, or other potentially infectious materials, thus posing a significant risk of transmitting infection.

Under PADEP regulations, processed medical waste generated by hospitals, nursing homes, clinics, and dental and medical offices are included as part of the municipal waste stream. Therefore, it is the Region's responsibility to ensure proper management of this portion of the municipal waste stream.

Most processed medical waste is collected by one of a number of private companies that offer medical waste collection services in the Region. To ensure the proper handling of this material by private haulers, PADEP requires that all vehicles used for the commercial collection of processed medical waste be permitted by PADEP.

Today, medical facilities continue to manage processed medical waste effectively through arrangements with commercial contractors to safely transport, process and dispose of this material. Though home-generated sharps, pharmaceuticals and infectious wastes are not technically regulated processed medical waste, concerns over their safe and best disposal options remain and should be addressed in some way in this Plan Revision. The following sections provide information on pharmaceutical and home health care waste disposal.

1.12 Pharmaceutical Waste

Pharmaceutical wastes are those prescriptions or over-the-counter drugs from residential homes that are no longer needed or have expired. Per the EPA, these types of waste are not to be flushed down the toilet or drain unless the label or accompanying patient information specifically instructs you to do so. The EPA states that residents should return these types of wastes to a drug take-back program or follow the steps listed below for household disposal:

1. Take the prescription drugs out of their original containers. Liquid pharmaceuticals shall remain in the original container.
2. Mix drugs with an undesirable substance, such as cat litter or used coffee grounds.
3. Put the mixture into a disposable container with a lid, such as an empty margarine tub, or into a sealable bag.
4. Conceal or remove any personal information, including Rx number, on the empty containers by covering it with permanent marker or duct tape, or by scratching it off.
5. The sealed container with the drug mixture, and the empty drug containers, can now be placed curbside in your residential waste container.

As of July 2020 (most recent updated list from the Pennsylvania Department of Drug and Alcohol Programs as linked on PADEP's website), there are four (4) drug take back locations within Clarion County and two (2) locations within Forest County. All of which are sponsored by the Pennsylvania Department of Drug and Alcohol Programs.

To locate a drug take-back location, municipalities may refer residents to this website: [Find a Drug Take-Back Location \(pa.gov\)](#)

1.13 Home Health Care Waste

Home health care wastes primarily consist of used "sharps", such as needles, syringes, lancets, and other sharp objects, as well as soiled bandages, disposable sheets and gloves. The following outlines the steps recommended by the PADEP for disposal of home health care waste:

1. Place all sharps in a puncture-resistant, hard plastic or metal container. An empty detergent bottle with a screw on cap or an empty coffee can will do.
2. Close the container with its original lid and secure with heavy duty tape.
3. Place the tightly sealed container in a paper bag and discard it with the household waste.
4. It is recommended to disinfect sharps with a solution of one (1) teaspoon of bleach in ½ gallon of water, prior to disposal.
5. Place non-sharp home health care wastes in a doubled, securely fastened, opaque plastic trash bag before putting them in the trash can with other wastes.
6. Do not place this material with the recyclables.

1.14 Household Battery Waste

Household batteries, commonly known as dry cell batteries, are comprised of an anode, a cathode, and an electrolyte. When preparing any batteries for recycling or disposal, always cover the electrical contacts or battery ends with a non-conductive tape or seal individual batteries in separate plastic bags so they cannot conduct electricity. This helps eliminate potential fire or explosion hazard when the batteries are collected together in a bulk container.

Nickel Cadmium Batteries: Call2Recycle is a product stewardship program providing no-cost battery and cell phone recycling solutions across the United States and Canada. Residents can access their website to find drop-off sites. Additionally, participating retail collection points include Batteries Plus, Home Depot, Lows, Radio Shack, Sears and Staples. These items are also accepted at the Clarion County HHW collection event.

Nickel Metal Hydride Batteries: These batteries are more environmentally friendly and are often found in camcorders, cell phones, and power tools. The same recycling options are available for these batteries as are listed in Nickel Cadmium Batteries, above.

Nickel Zinc Batteries: These batteries are newer to the marketplace and can be found in digital cameras and wireless keyboards. These batteries have the same recycling options as what is listed for Nickel Cadmium Batteries, above.

Lithium Ion Batteries: These are most commonly found in digital cameras, cell phones, and laptop computers. This battery type can be recycled through Call2Recycle, Inc. or at a participating retail collection points, such as Batteries Plus, Home Depot, Lowes, Radio Shack, Sears, and Staples. These are also accepted at the Clarion County HHW collection events.

Alkaline and Zinc Carbon Batteries: These batteries typically contain manganese dioxide cathode and a zinc anode. These batteries used to be outfitted with mercury to prevent corrosion and the creation of hydrogen gas. Recent laws have restricted the levels of mercury allowed in alkaline and zinc-carbon batteries. Today, alkaline batteries on the market are required to have zero-added mercury and are no longer hazardous. There are limited options for recycling alkaline and zinc carbon batteries. Clean Earth in Allentown and INMETCO, a metals reclamation facility in Pennsylvania will both recycle alkaline and zinc carbon batteries. Residents are encouraged to visit these entities websites to find drop-off options near them. Since alkaline and zinc carbon battery types no longer contain mercury and they may be disposed in normal household trash.

Lithium Button Cell Batteries: These batteries are used primarily for cameras. Lithium is a highly reactive metal and when collected with other button cells may present a hazard if not fully discharged. The Clarion County HHW collection program accepts these types of batteries. In addition, AERC Recycling Solutions (now Clean Earth) and INMETCO will recycle this battery type for a fee.

Silver Oxide Batteries: These are button cell batteries that are commonly used in watches, calculators and hearing aids. These contain a small amount of mercury to prevent the formation of gas. Most jewelry stores will recycle the silver oxide battery, if a resident brings in a watch to have the battery replaced. This battery type can also be taken to the Clarion County HHW collection event. In addition, AERC Recycling Solutions (now Clean Earth) will recycle this battery type for a fee.

Zinc-Air Batteries: These are button cell batteries primarily used for hearing aids. This battery type contains about one percent mercury by weight, which serves as a gas suppressant. The Clarion County HHW collection event will accept this type of battery, as well as AERC Recycling Solutions (now Clean Earth) and INMETCO for a fee.

1.15 Renovation and Demolition Waste

Renovation and demolition waste consists of salvageable materials, reusable materials, aggregate like wastes, wood wastes, and wastes that require special handling and disposal. It is advantageous to divert

as much of this material from disposal, as is possible. Suggestions from PADEP for diversion of this material include:

- Market salvage rights for buildings prior to demolition.
- Salvage materials – by definition, materials salvaged for use in their intended function are not wastes. Examples include: bathroom fixtures, carpet, ceiling panels, doors, flooring, lighting fixtures, office partitions, structural components, windows, etc.
- Establish recycling systems onsite and make sure that both contractors and subcontractors receive instructions on sorting their own waste.
- Recycle materials – source separated recyclable materials such as metals, plastics, and wood are not wastes when recycled.
- Manage as Clean Fill – the use of uncontaminated soil, rock, stone, gravel, brick and block, concrete and used asphalt as clean fill does not require a permit.
- Divert for beneficial use – the department has developed an issued GP for the processing and beneficial use of various types of construction waste. Waste may be diverted to permitted facilities for processing and beneficial use as aggregate, compost, soil amendments, etc.
- In Western PA, there are several C&D salvaged material outlets, recyclers and service providers that residents of Clarion and Forest County may use to divert renovation and demolition waste. These are American Architectural Salvage in Mount Pleasant, PA; Construction Junction in Pittsburgh, PA; Furnish A Start in Pittsburgh, PA; and ReClaim! In New Castle, PA.

1.16 Waste Tires

The Waste Tire Recycling Act, Act 190 of 1996 provides for the recycling and reuse of waste tires; proper disposal of waste tires and the cleanup of stockpiled tires. This act prohibited the disposal of whole used or waste tires at a landfill. Act 190 does allow for the acceptance of waste tires at a landfill facility if:

- The facility provides for shredding, chopping, or splitting of the whole used or waste tire prior to disposal;
- If the facility uses the whole used or waste tire for alternative uses, which may include on site uses such as lining of roadways with waste tires, use in landfill construction as liner protection, alternative daily landfill cover, and/or use in a landfill leachate collection system; or
- If the facility makes available the whole used or waste tire to an appropriate facility for reuse, recycling, or use as an alternative fuel source.

Many waste and recycling collection programs will provide for the acceptance of waste tires, curbside, if the tire is removed from the rim and set out curbside on a regularly scheduled waste and recycling collection day. Residents shall check with their service provider for restrictions when disposing of waste

tires in this manner. Additionally, there are collection events held across Pennsylvania. At this time, these collection events are not open to residents of Clarion or Forest Counties, but there may be opportunity in the future.

1.17 Residual Waste

The region generates residual waste—that is, wastes (including sludges) generated by industrial, mining, agricultural, or water supply treatment facilities. While the Region does not manage disposal of this waste, it bears mentioning because residual waste generators in the Region disposed of over 29,000 tons of residual waste in 2021. The majority of this waste stream was disposed of at three (3) disposal facilities, Advanced Disposal Greentree Landfill, Blue Ridge Landfill, and Northwest Sanitary Landfill. Disposal facilities, as part of the SOI process (discussed further in Section 3 of this Plan Revision), were asked to include their guaranteed tonnage for residual wastes and their not to exceed tipping fees, over the 10-year planning period. Table 1-4 lists the residual waste tonnages generated within the Region between 2016 and 2021.

Table 1-4
Regional Residual Waste Disposal Tonnages 2016 – 2021 (In Tons)

Year					
2016	2017	2018	2019	2020	2021
36,768	28,984	31,211	25,695	23,990	25,028

**Source: PADEP Waste Destination Reports.*

CHAPTER 2 - DESCRIPTION OF FACILITIES

This section describes the facilities that are currently being used to manage the municipal solid waste (MSW) generated in Clarion and Forest Counties that have existing waste disposal contracts with Clarion and Forest Counties.

2.1 Waste Disposal Facilities with Existing Disposal Contracts

The following waste disposal facilities executed contracts with Clarion and Forest Counties as part of the last solid waste management plan update.

- Northwest Sanitary Landfill (Butler County);
- Seneca Landfill, Inc. (Butler County); and
- Advanced Disposal Services Greentree Landfill, LLC (Elk County)

Table 2-1 lists the amount of MSW accepted at facilities with executed disposal capacity contracts with the Region from 2016 through 2021, as per the PADEP Waste Destination Reports for the respective year. Table 2-2 provides additional information on the waste disposal facilities with existing waste disposal contracts with the Region.

Table 2-1
MSW Accepted at Landfills with Executed Contracts (in Tons)

Facility Name	2016	2017	2018	2019	2020	2021
Northwest Sanitary Landfill	1,324	1,475	1,353	1,430	1,234	1,347
Seneca Landfill, Inc.	0	25	30	24	0	0
Advanced Disposal Services Greentree Landfill	37,578	36,284	41,298	39,831	37,886	38,758

**Table 2-2
Contracted Disposal Facilities**

	PADEP Permit Number	Permitted Capacity	Remaining Capacity	Available Capacity Through Expansion	Recyclable Materials Accepted at On-Site Drop-Off
Northwest Sanitary Landfill	100585	ADV: 2,500 MDV: 2,500	2.5 Years	N/A	Aluminum cans and bottles, tin/metal food and beverage containers, #1 and #2 plastic bottles, jugs and jars.
Seneca Landfill, Inc.	100403	ADV: 3,000 MDV: 3,000	>10 Years	N/A	Cardboard, aluminum, HDPE/PETE plastics, metal, and glass
Advanced Disposal Services, Greentree Landfill, LLC	101397	ADV: 5,500 MDV: 6,000	50 Years	N/A	
Lake View Landfill	100329	ADV: 4,600 MDV: 5,000	45 Years	N/A	Aluminum cans and bottles, tin and metal food and beverage containers, #1 and #2 plastic bottles, jugs and jars
Tri-County Landfill*	101678	ADV: 4,000 MDV: 4,000			
Carbon Limestone Landfill (Ohio)*	N/A				
Casella Waste Management McKean Landfill*	100361	ADV: 6,000 MDV: 6,000			

¹ CY = Cubic Yards

*Didn't respond to SOI

2.2 Existing Waste Transfer Stations

There is currently one privately operated permitted waste transfer station located in the Region. The services they provide are shown in Table 2-3.

**Table 2-3
Existing Permitted Transfer Stations in the Region**

Transfer Station	Address	Description of Services Provided	Residential Access
WM Clarion County Transfer Station	18380 Paint Blvd. Shipperville, PA 16254	Provides a drop off location for trash, bulky waste, and C&D debris for contractors and residents. It also accepts commingled recyclables (plastic bottles, newspapers and magazines) and buys scrap tin and steel.	Yes

Additionally, there are two (2) transfer stations located in contiguous counties that may accept waste. They are described in Table 2-4.

Table 2-4
Existing Permitted Transfer Stations Located in Contiguous Counties

Waste Transfer Station	Address	County
Seneca Landfill Transfer Station	421 Hartmann Road Evans City, PA 16033	Butler
Warren City Transfer Station	32870 Route 6 Pittsfield, PA 16340	Warren

2.3 Sites for Agricultural Utilization of Biosolids

Section 1.10 of this Plan Revision summarized the current biosolids management practices in the Region. There are no known land application sites for biosolids generated within the Region.

2.4 Consideration of Existing Facilities

PA Code 25 Section 272.224 mandates that the Plan must consider facilities which meet the definition of "existing facility". The selection and justification of the municipal waste program is outlined in Section 5 of this Plan Revision. In order to minimize the effect of reserving space for waste on landfill capacity and to allow for flexibility for backup capacity, the Region decided to utilize multiple disposal facilities. This action is also expected to help maintain competition in the area. The Regional Plan is intended not to interfere with any existing facility's effort to find other customers or to expand their facilities.

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CHAPTER 3 - ESTIMATED FUTURE CAPACITY

The facilities/sites that accepted MSW and C&D waste generated within the Region over the last six years (2016-2021) and the respective tonnages disposed of at each are presented in Table 3-1 below. The Advanced Disposal Services Greentree Landfill has accepted the majority of MSW and C&D during this time period are shown shaded in the below table.

Table 3-1
MSW and C&D Accepted at Disposal Facilities (2016 – 2021) (in Tons)

Site Name	County	Year ¹						6 Year Total
		2016	2017	2018	2019	2020	2021	
Northwest Sanitary Landfill	Butler	1,324	1,475	1,353	1,430	1,234	1,347	8,163
Seneca Landfill, Inc.	Butler		25	30	24			79
Advanced Disposal Services Greentree Landfill, LLC	Elk	37,578	36,284	41,267	39,862	37,886	38,758	231,635
Blue Ridge Landfill							6,336	6,336
Cumberland County Landfill							3	3
Allied Waste Systems Imperial Landfill			10	5				15
Casella Waste Management Landfill		99	1,298	128	9			1,534
Total:		39,001	39,092	42,783	41,325	39,120	46,444	247,765

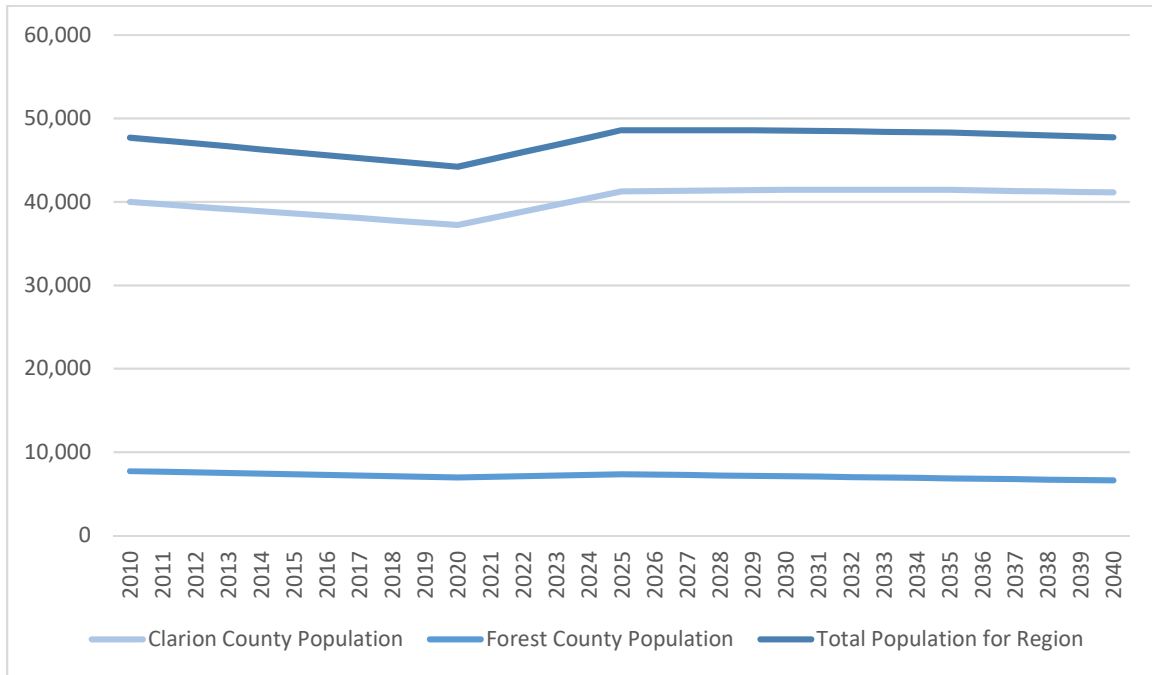
Source: PADEP Waste Origin Report

¹ Tonnages do not include residual, sewage sludge, processed medical waste, ash or asbestos waste. Also does not include recyclable materials and organics that have been diverted from disposal through recycling and composting.

3.1 Future County Population Projections

Municipal waste generation is a function of a number of socio-economic factors, including population. Figure 3-1 shows the county population for Clarion and Forest Counties, based on the 2020 US Census Bureau information and population forecasts for the Counties from 2020 through 2040. These population forecasts were extracted from the Pennsylvania State Data Center, Center for Rural Pennsylvania projections.

**Figure 3-1
Regional Population Projections**



Source: U.S. Census of Population, 2020.

Forecasts: Pennsylvania State Data Center, Center for Rural Pennsylvania Projections

As Figure 3-1 illustrates, the Region is forecasted to have a steady decline in population over the 10-year planning period.

3.2 Waste and Recyclables Projections

The three (3) primary sources of data used to develop the municipal waste generation projections for the Region are: the population projections shown in Figure 3-1; the Re-TRAC data on recyclables and organics diverted from disposal through recycling/composting for 2016 through 2021, and; the waste generation data both from the PADEP Waste Destination Reports and the Regional Transfer Station for 2016 through 2021. A summary of the waste and recyclables/organics disposed or diverted from 2016 through 2021 is provided in Table 3-2 below.

Table 3-2
Waste and Recyclables/Organics Disposed or Diverted Within the Region 2016 – 2021 (In Tons)

Waste Type	Year						
	2016	2017	2018	2019	2020	2021	6 Year Average
Typical Residential, Commercial, Institutional MSW and C&D	39,000	39,092	42,783	41,295	39,120	46,443	41,289
Recyclables & Organics Diverted	258	275	783	361	334	-	402*
SUBTOTAL - Typical MSW, C&D + Recyclables/Organics	39,258	39,368	43,566	41,656	39,454	46,443	40,660*
Recycling Diversion	0.66%	0.70%	1.8%	0.87%	0.85%	-	0.97%*
Sewage Sludge	696	618	1,232	1,221	1,148	3,437	1,392
Processed Medical Waste	0	0	0	0	0	0	0
Ash Residue	0	25	0	28	25	34	19
Asbestos	36	24	163	14	0	339	96
TOTAL – All Categories of Municipal Waste + Recycling	39,990	40,034	44,961	42,919	40,628	50,252	41,706*
Residual Waste	36,768	28,984	31,211	25,695	23,990	25,028	28,613
TOTAL – Municipal Waste, All Types + Recycling/Organics + Residual Waste	76,757	69,081	76,171	68,614	64,618	75,280	71,036*

Sources: PADEP Waste Origin/Destination Reports; Re-TRAC Reports.

*Recycling Data for 2021 was not available at the time of plan development. A five year average was used for these values.

Per Table 3-2, the total tonnage of waste reported to have been generated within the Region on an annual basis has been holding relatively steady since 2016. The data reported for 2021 appears to be incorrect, with nearly 2,000 tons of waste material reported disposed at a facility that has historically taken zero tons of waste from the Region in the past six (or more) years. It was therefore determined that a five-year average, from 2016-2020, should be used to develop conservative waste disposal/diversion projections for the 10-year planning period. In order to develop said projections, the per capita disposal/diversion rates were calculated for all waste and recyclables categories by dividing the five-year average waste disposal/diversion tonnages by the 2020 population (per US Census Bureau) for each County (see Section 3.3). The calculated per capita disposal/diversion rates for each waste and recyclables category was then multiplied by yearly population projections for years 2022 through 2032, as well as 2035 and 2040, to estimate the anticipated waste and recyclables tonnages to be disposed or diverted over the 10-year planning period (see Section 3.4).

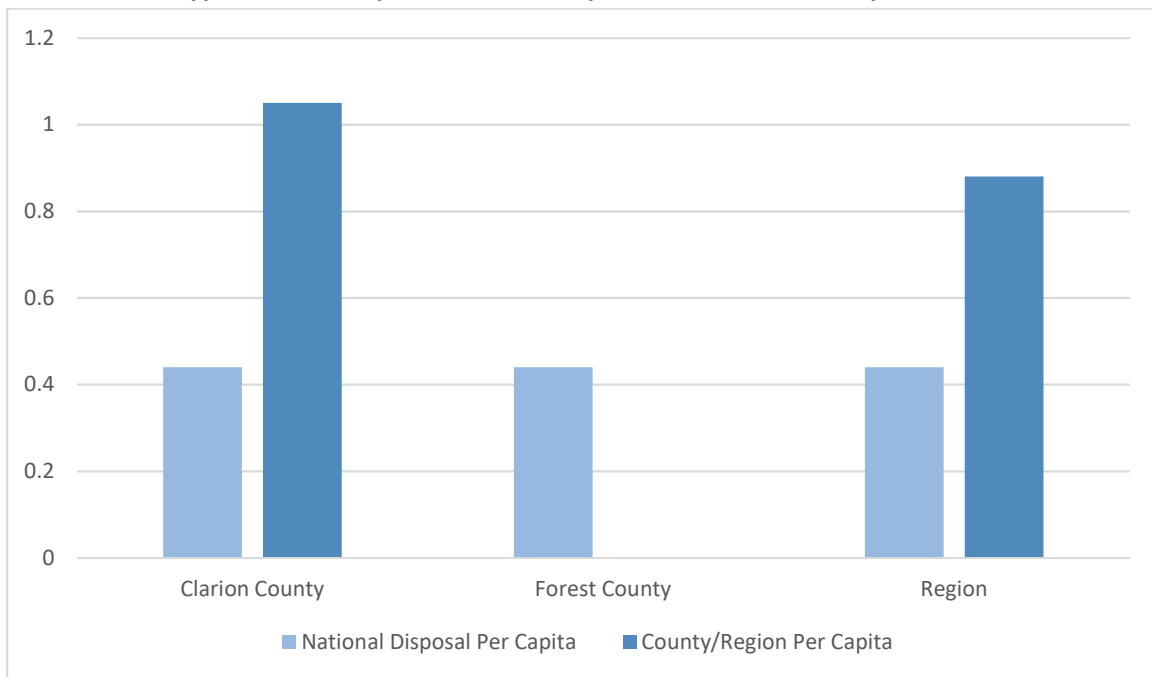
3.3 Per Capita Waste Disposal Rates

Typical MSW Per Capita Rate

Typical MSW disposed by residents, which includes residential, commercial and institutional waste, but does not include recyclables/organics diverted from disposal, has been relatively steady across the Region, with the exception of 2021 as noted above. Using a five-year average, 2016-2020, and the US Census Bureaus reported population in 2020 for each County, the **typical MSW per capita rate for waste disposal is approximately 1.05 tons/capita/year for Clarion County and 0.001 tons/capita/year for Forest County.**

The national average per capita waste disposal landfilling rate is 0.44 tons per capita per year or 2.4 pounds per capita per day. This data is based on the EPA’s most recently published Sustainable Materials Management Report, dated December 2020. The MSW evaluated by the EPA Report includes residential waste and waste from commercial and institutional sources, such as businesses, schools and hospitals. Figure 3-2 below displays the average disposal rates for Clarion and Forest Counties, individually and as a Region, compared to the national average rate.

**Figure 3-2
Typical MSW Disposal Rate Per Capita vs. National Per Capita Rates**



Source: EPA Sustainable Material Management Report, December 2020

The higher MSW disposal per capita rate as compared to the national average can be attributed to several things and without a more detailed study into this per capita rate comparison, the following observations are offered as to why the per capita disposal rate is higher than the national average. A lack of recycling

can cause an increase in the per capita disposal rate, while subsequently resulting in a lower per capita recyclables diversion rate.

Recycling Per Capita Rate

The amount of recyclables/organics diverted from disposal within the Region, has been relatively steady. Using a five-year average, 2016-2020, and the US Census Bureaus reported population in 2020 for each County, the **recycling per capita rate is approximately 0.01 tons/capita/year for Clarion County and 0.0002 tons/capita/year for Forest County.**

The national average per capita recycling rate is 0.35 tons per capita per year or 1.9 pounds per capita per day. This data is based on the EPA's most recently published Sustainable Materials Management Report, dated December 2020. The recycling efforts evaluated by the EPA Report include typical recycling methods, such as curbside and drop-off, as well as composting and other food management techniques.

C&D Disposal Per Capita Rate

Using a five-year average, 2016-2020, and the US Census Bureaus reported population in 2020 for each County, the **typical C&D disposal per capita rate is approximately 0.01 tons/capita/year for Clarion County and 0.003 tons/capita/year for Forest County.**

Sewage Sludge Disposal Per Capita Rate

Using a five-year average, 2016-2020, and the US Census Bureaus reported population in 2020 for each County, the **sewage sludge disposal per capita rate is approximately 0.02 tons/capita/year for Clarion County and 0.05 tons/capita/year for Forest County.**

Asbestos Disposal Per Capita Rate

Using a five-year average, 2016-2020, and the US Census Bureaus reported population in 2020 for each County, the **asbestos disposal per capita rate is approximately 0.001 tons/capita/year for Clarion County and 0.0006 tons/capita/year for Forest County.**

Ash Disposal Per Capita Rate

Using a five-year average, 2016-2020, and the US Census Bureaus reported population in 2020 for each County, the **ash disposal per capita rate is approximately 0.0001 tons/capita/year for Clarion County and 0.002 tons/capita/year for Forest County.**

Residual Waste Disposal Per Capita Rate

Non-hazardous industrial waste (residual wastes) tonnages are not a component of municipal wastes, and this Plan is intended to cover municipal wastes as defined by Act 101 of 1988. However, residual waste generated within the Region totaled approximately 25,000 tons in 2021 and is therefore worth noting in this Plan Revision. Using a five-year average, 2016-2020, and the US Census Bureaus reported population in 2020 for each County, the **residual waste disposal per capita rate is approximately 0.78 tons/capita/year for Clarion County and 0.04 tons/capita/year for Forest County.**

3.4 Future County Municipal Waste Generation for Disposal Projections

Tables 3-3, 3-4, and 3-5 present the annual MSW waste disposal and recyclables diversion estimates/projections for the Region from 2022 through 2032, including 2035 and 2040. These projections are tied to the population projections presented in Figure 3-1 as well as the per capita waste disposal rates developed in Section 3.3. It is believed that the average per capita waste disposal rates for the multiple fractions of MSW generated is a valid basis for projecting future waste disposal tonnages.

As presented in Tables 3-3, 3-4, and 3-5, net Region-generated MSW, including residential, commercial, and institutional waste requiring disposal (after waste diversion and recycling), is projected to increase slightly over the 10- year planning period, due to a projected increase in population in Clarion County, but still a projected decrease in population in Forest County.

Nationwide, there is a growing trend to recycle more C&D waste. “Deconstruction and recycling” is becoming more common than the old “demolition and disposal” practices. The Plan Revision projects that disposal of C&D waste will decrease over time with the declining population. Although an increase in C&D recycling is anticipated due to the introduction and growth of programs to recycle this material, this trend has not been included in the recycling diversion tonnages projected in Tables 3-3, 3-4, and 3-5, since it is highly dependent on private industries within the Region and may be hard to predict over the planning period.

Special handling waste categories of MSW (those that require special handling provisions), including sewage sludge, processed medical waste, ash residue, and asbestos, are projected to remain relatively steady over the 10-year planning period, largely due to the minimal amount currently generated in the Region and the projection that the generation will remain low over the planning period.

When considering the disposal capacity needs for the Counties MSW, and when procuring this disposal capacity through a Solicitation of Interest (SOI) (discussed further in Section 3.6 of this Plan Revision), it was prudent to consider the need to accommodate approximately 45,000 TPY of MSW disposal capacity, which accounted for some additional allowance for disposal of currently diverted recyclables and organics (all categories of municipal waste), and provided for contingencies over the 10-year planning period from 2023 through 2032. Conservative disposal capacity requirements were included in the SOI for disposal capacity, which is further discussed in Section 3.6.

3.5 Possible Variations in Future Waste Generation for Disposal Projections

The primary variables which may affect actual MSW waste generation/disposal tonnages in the Region in the future are:

- Population loss or gain.
- Changes in recycling activities and opportunities in the Region.
- Changes in foreign markets for recyclables exportation.
- Changes in product packaging trends.
- Increases in waste reduction programs (source reduction strategies).

- Addition of non-mandated municipality recycling programs and drop-off facilities.
- Increases in recyclable materials recovery rates.
- Expansion of materials diverted/recycled, including implementation/expansion of HHW and e-waste programs.
- Development of new technologies.
- Economic factors; the Plan's waste generation for disposal estimates reflect a stable level, but not growth, in commercial/business development.

E-commerce is on the rise and with it, comes increased cardboard. There is no denying that companies such as Amazon have grown over the past 10-years. Their growth has directly impacted the amount of cardboard recycled on a residential level annually in the United States. Residents are interested in receiving goods at an accelerated pace and with the ease of shopping online using a phone or a tablet. It is not anticipated that online shopping will slow over the 10-year planning period; if anything, online shopping is forecasted to grow. Companies are making efforts to reduce cardboard packaging and over packaging of products as a means to reduce the amount of material received by the consumer. These efforts are beneficial, but, while these efforts are being implemented, it's important to consider cardboard recycling as part of the 10-year planning process.

The challenge of increased curbside cardboard recycling is the space available to collect this material in the collection vehicles. If curbside cardboard recycling continues to increase, haulers may be forced to increase collection frequency, which may increase the cost to residents to provide this service. Additionally, many communities that are still utilizing the bins for recyclables collection, versus a cart system, may see the increased need to move to a cart based system.

Local recycling activities and programs have been fairly consistent over the past few years. The recycling program throughout the Region currently consists of a network of public and privately owned and operated drop-off recyclables collection facilities; curbside collection conducted by the private sector and periodic e-waste and HHW collection events. The County is interested in evaluating options, during this planning process, to provide convenient waste and recycling to more residents and offer additional waste and recycling opportunities to residents on a more consistent timeframe, if financially feasible. The Plan Revision takes into account that the waste and recycling programs offered are dependent on funding and public private partnerships that may be implemented over the course of the 10-year planning period.

In July 2017, China announced a series of new restrictions on imported materials, including an outright ban on 24 different categories of recyclable materials to be phased out by the end of 2017. This was a result of the National Sword 2017 Program that called for investigations of shipments of recyclables at the port, including weighing and X-raying. In China's filing with the World Trade Organization, they expressed a desire to protect human health and safety. According to their data, the vast majority of the solid recyclables it accepted were contaminated with dirty material, which cannot be recycled, and even dangerous compounds, like mercury, which can compromise any recycling operation. Though 24

materials were banned, the most impactful is plastic and unsorted waste paper. It is estimated that 70% of the recycling material sent to China is mixed paper. Some of the outcomes of this ban have been:

- Utilization of other countries for exportation of this material.
- Limiting the types of materials collected in the current recycling programs.
- Moving towards a concentration on quality (i.e. cleanliness) of the recycling stream versus quantity.

Any of these variations may cause the estimated waste tonnage requiring disposal to fluctuate up or down over the 10-year planning period.

In response to the “China Ban,” the waste industry has seen the following reactions in the state of Pennsylvania by some of the larger for-profit recyclers:

- Removal of items from the recycling streams (i.e. mixed paper, glass, etc.);
- Fine assessment for high contamination rates and/or materials in the recyclable stream that were banned (i.e. fines assessed for plastic bags in the recycling drop-off containers);
- Increase to service charges and/or surcharge fees (i.e. pull costs are increased to service drop-off locations).

China’s recycling ban came after many recycling programs had transitioned from source separated programs that required consumers to separate paper, plastics, cans, and bottles to single stream where all recyclables are placed into the same bin. As a result, contamination from food and waste has risen, leaving significant amounts unusable. In addition, plastic packaging has become increasingly complex, with colors, additives, and multilayer, mixed compositions making it more difficult to recycle. The U.S. and Europe, where many cities have longstanding recycling collection programs, have been especially hard-hit. Decades of reliance on China had stifled development of domestic markets and infrastructure. When the ban took effect, there weren’t many cost-effective options for dealing with the banned material. Many communities found without an efficient management of plastic and paper waste system in place, the cost-effective option was to landfill the material and/or send it to a waste-to-energy facility.

In the U.S., small town and rural recycling operations have been hit the hardest. While most continue to operate, rising costs and falling incomes are forcing some to shut down. Others have stopped accepting all plastics or suspended curbside pickup of recyclables. Many have had to make changes to their collection program, including eliminating hard-to-recycle materials from their programs. Other communities have found alternative markets or improved their municipal operations to process higher-quality and more marketable materials.

In Pennsylvania, many of the private sector waste contractors demanded higher fees for collecting and processing recycled materials. This resulted in drastic changes to the recyclables collection programs and, in some instances, resulted in recyclables being sent to landfills and/or waste-to-energy facilities.

It is envisioned over the 10-year planning period, if the China Ban remains in place or the quality of material is held at a higher standard, recycling programs will see a larger concentration on the type of material and quality of material being recycled by haulers and processors. This may result in increased program costs, reduction of materials accepted, renegotiated management of drop-off locations, increased contract costs for waste services to offset recycling program costs, continued fine assessments, etc.

**Table 3-3
Waste and Recycling Projections for Clarion County, 2016 – 2040 (in Tons)**

Waste Type	Year																		
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2035	2040
County Population	38,340	38,065	37,790	37,516	37,241	38,044	38,847	39,649	40,452	41,255	41,295	41,334	41,374	41,413	41,453	41,450	41,448	41,440	41,142
Typical MSW																			
Estimated Typical MSW (including C&D, not including recyclables) Requiring Disposal	38,891	38,961	42,655	41,280	39,116	40,102	41,831	42,696	43,560	44,425	44,467	44,510	44,553	44,595	44,638	44,635	44,632	44,624	44,303
Estimated Recyclables & Organics Diverted	258	275	783	360	334	411	419	428	437	445	446	446	447	447	448	448	448	447	444
Total Typical MSW, including C&D, and Recyclables	39,149	39,237	43,438	41,639	39,451	40,513	42,251	43,124	43,997	44,870	44,913	44,956	44,999	45,042	45,085	45,083	45,080	45,071	44,747
Recyclables Diversion, as a % of Typical MSW (including C&D) + Recycling	0.66%	0.70%	1.80%	0.86%	0.85%	1.01%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
Special Handling Waste																			
Estimated Sewage Sludge Generated	345	363	875	888	740	2,233	670	684	698	711	712	713	713	714	715	715	715	715	709
Estimated RMW Generated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Estimated Ash Generated	0	25	0	0	0	0	5	5	5	5	5	6	6	6	6	6	6	6	5
Estimated Asbestos Generated	36	2	163	14	0	336	45	46	47	48	48	48	48	48	48	48	48	48	48
Total - All Categories of Special Handling Waste	381	390	1,037	902	741	2,569	720	735	750	765	765	766	767	767	768	768	768	768	762
Total - Typical Municipal Waste + Recycling + Special Handling Waste	39,530	39,627	44,475	42,542	40,191	43,082	42,970	43,859	44,747	45,635	45,678	45,722	45,766	45,810	45,854	45,851	45,848	45,839	45,510
Total - All Categories of Municipal Waste (Net of Recycling)	39,271	39,352	43,692	42,182	39,857	42,671	42,551	43,430	44,310	45,189	45,233	45,276	45,319	45,363	45,406	45,403	45,400	45,392	45,065
Estimated Residual Waste Generated	36,437	28,904	30,708	25,236	23,981	23,727	30,306	30,932	31,558	32,185	32,215	32,246	32,277	32,308	32,339	32,337	32,335	32,329	32,096
Total - Municipal Waste, All Types + Recycling/Organics + Residual Waste	75,966	68,531	75,183	67,778	64,172	66,809	73,276	74,790	76,305	77,819	77,894	77,968	78,043	78,118	78,193	78,188	78,183	78,168	77,606
MSW + Special Handling Waste + C&D	39,271	39,352	43,692	42,182	39,857	42,671	42,551	43,430	44,310	45,189	45,233	45,276	45,319	45,363	45,406	45,403	45,400	45,392	45,065
MSW + Special Handling Waste + Residual	75,708	68,255	74,400	67,418	63,838	66,398	72,857	74,362	75,868	77,374	77,448	77,522	77,596	77,671	77,745	77,740	77,735	77,721	77,162

**Table 3-4
Waste and Recycling Projections for Forest County, 2016 – 2040 (in Tons)**

Waste Type	Year																		
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2035	2040
County Population	7,270	7,196	7,122	7,047	6,973	7,047	7,122	7,196	7,271	7,345	7,300	7,254	7,209	7,163	7,118	7,068	7,018	6,869	6,608
Typical MSW																			
Estimated Typical MSW (including C&D, not including recyclables) Requiring Disposal	109	131	128	15	4	6,341	79	80	81	82	81	81	80	80	79	78	78	76	73
Estimated Recyclables & Organics Diverted	0	0	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Typical MSW, including C&D, and Recyclables	109	131	128	16	4	6,346	79	80	81	82	81	81	80	80	79	78	78	76	73
Recyclables Diversion, as a % of Typical MSW (including C&D) + Recycling	0.00%	0.00%	0.00%	8.59%	0.00%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Special Handling Waste																			
Estimated Sewage Sludge Generated	351	255	357	333	408	1,203	348	352	355	359	357	354	352	350	348	345	343	336	323
Estimated RMW Generated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Estimated Ash Generated	0	0	0	28	25	34	11	11	11	11	11	11	11	11	11	11	11	11	10
Estimated Asbestos Generated	0	22	0	0	0	3	4	4	5	5	5	5	4	4	4	4	4	4	4
Total - All Categories of Special Handling Waste	351	277	357	361	433	1,240	363	367	371	375	372	370	368	365	363	361	358	350	337
Total - Typical Municipal Waste + Recycling + Special Handling Waste	460	407	486	377	437	7,586	442	447	452	456	453	451	448	445	442	439	436	427	411
Total - All Categories of Municipal Waste (Net of Recycling)	460	407	486	376	437	7,581	442	447	452	456	453	451	448	445	442	439	436	427	411
Estimated Residual Waste Generated	331	80	503	459	10	1,301	282	285	288	291	289	288	286	284	282	280	278	272	262
Total - Municipal Waste, All Types + Recycling/Organics + Residual Waste	791	488	988	836	447	8,887	725	732	740	748	743	738	734	729	724	719	714	699	673
MSW + Special Handling Waste + C&D	460	407	486	376	437	7,581	442	447	452	456	453	451	448	445	442	439	436	427	411
MSW + Special Handling Waste + Residual	791	488	988	835	447	8,882	725	732	740	748	743	738	734	729	724	719	714	699	673

**Table 3-5
Waste and Recycling Projections for the Region, 2016 – 2040 (in Tons)**

Waste Type	Year																		
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2035	2040
Region Population	45,610	45,261	44,912	44,563	44,214	45,091	45,968	46,846	47,723	48,600	48,594	48,588	48,583	48,577	48,571	48,519	48,466	48,309	47,750
Typical MSW																			
Estimated Typical MSW (including C&D, not including recyclables) Requiring Disposal	39,000	39,092	42,783	41,295	39,120	46,443	41,910	42,776	43,641	44,506	44,548	44,590	44,633	44,675	44,717	44,713	44,710	44,700	44,376
Estimated Recyclables & Organics Diverted	258	275	783	361	334	0	419	428	437	445	446	446	447	447	448	448	448	447	444
Total Typical MSW, including C&D, and Recyclables	39,258	39,368	43,566	41,656	39,454	46,443	42,330	43,204	44,078	44,952	44,994	45,037	45,079	45,122	45,164	45,161	45,158	45,147	44,820
Recyclables Diversion, as a % of Typical MSW (including C&D) + Recycling	0.66%	0.70%	1.80%	0.87%	0.85%	0.00%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
Special Handling Waste																			
Estimated Sewage Sludge Generated	696	618	1,232	1,221	1,148	3,437	1,018	1,035	1,053	1,070	1,069	1,067	1,066	1,064	1,063	1,060	1,058	1,050	1,032
Estimated RMW Generated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Estimated Ash Generated	0	25	0	28	25	34	16	16	17	17	17	17	17	17	16	16	16	16	16
Estimated Asbestos Generated	36	24	163	14	0	339	49	50	51	52	52	52	52	52	52	52	52	52	52
Total - All Categories of Special Handling Waste	732	667	1,395	1,263	1,174	3,809	1,083	1,102	1,121	1,139	1,138	1,136	1,135	1,133	1,131	1,129	1,126	1,118	1,100
Total - Typical Municipal Waste + Recycling + Special Handling Waste	39,990	40,034	44,961	42,919	40,628	50,252	43,413	44,306	45,198	46,091	46,132	46,173	46,214	46,255	46,296	46,290	46,284	46,266	45,920
Total - All Categories of Municipal Waste (Net of Recycling)	39,732	39,759	44,178	42,558	40,294	50,252	42,993	43,877	44,761	45,645	45,686	45,727	45,767	45,808	45,848	45,842	45,836	45,819	45,476
Estimated Residual Waste Generated	36,768	28,984	31,211	25,695	23,990	25,028	30,588	31,217	31,847	32,476	32,505	32,534	32,563	32,592	32,621	32,617	32,613	32,601	32,358
Total - Municipal Waste, All Types + Recycling/Organics + Residual Waste	76,757	69,018	76,171	68,614	64,618	75,280	74,001	75,523	77,045	78,567	78,637	78,707	78,777	78,847	78,917	78,907	78,897	78,867	78,278
MSW + Special Handling Waste + C&D	39,732	39,759	44,178	42,558	40,294	50,252	42,993	43,877	44,761	45,645	45,686	45,727	45,767	45,808	45,848	45,842	45,836	45,819	45,476
MSW + Special Handling Waste + Residual	76,499	68,743	75,389	68,253	64,284	75,280	73,582	75,095	76,608	78,121	78,191	78,261	78,330	78,400	78,469	78,460	78,450	78,420	77,834

3.6 Securing Waste Disposal Capacity

Historically, Clarion and Forest County's Municipal Solid Waste Management Plan has provided that municipal waste from the Region will be delivered to disposal sites based on:

- 1) Their listing as designated sites in the county municipal waste plan, secured through contracts with the Counties, and;
- 2) Prevailing market conditions. Haulers have been free to take municipal waste from a given municipality to any disposal site of their choosing, as long as the site is designated in the Counties' Plan.

Currently, under this modified "free market" waste system, approximately 80% of typical municipal waste generated in the Region is disposed of at one privately-owned and operated facility, Advanced Disposal Services Greentree Landfill.

Under Act 101, each county in Pennsylvania must secure municipal waste (MSW) disposal capacity to meet its needs for the next 10-years. There are a number of ways in which this requirement can be met. The Counties have elected for this Plan Revision to secure the minimum disposal capacity requirement at multiple disposal facilities.

An SOI for disposal capacity assurance was prepared and distributed to facilities currently contracted with the Region and those facilities that requested a copy of the SOI, as part of the advertisements. Refer to Appendix A for a copy of the SOI, a copy of the advertisements placed in the Clarion News, the Forest Press, and Waste Today, and the evaluation of the SOIs received. Five (5) disposal facilities responded to the SOI to provide disposal services to the Region, for a period of 10-years. The SOI stated that the Region will require a combined municipal waste disposal capacity of up to approximately 45,000 TPY of municipal waste (including residential/commercial/institutional waste, recyclables (if not diverted), C&D waste, RMW, asbestos, sewage sludge and other "special handling" waste) during the 10-year planning period.

Based on the current waste projections (Tables 3-3 through 3-5), the Region is projected to generate from the waste categories of residential/commercial/institutional MSW, C&D waste, sewage sludge, RMW, ash residue, and asbestos, a combined total need of approximately 44,000 tons in 2023; adding in residual waste disposal needs, this total need is approximately 75,000 tons in 2023. The equivalent projections for year 2032 are 46,000 and 79,000 tons of disposal needs, respectively.

This process to secure MSW disposal capacity was conducted in the spring of 2022 using a Solicitation of Interest (SOI) and subsequent submittal forms. Disposal capacity and ceiling tipping fees were solicited for conventional MSW (from residential, commercial, and institutional sources), as well as for sewage sludge (in dewatered cake form), asbestos, incinerator ash, processed medical waste (RMW), and construction and demolition waste (C&D) disposal.

The SOI also asked for respondents to indicate 1) their willingness to further discuss, apart from disposal capacity assurance, ways in which the facility may potentially support a public/private partnership with the Region, and 2) their willingness to offer free disposal capacity at their sites on an annual basis to help with open/illegal dump cleanups in the Region. These two items were optional, not mandatory, SOI requests of respondents.

The SOI also requested waste transfer stations handling municipal wastes from the Region to respond and agree to 1) manifest all municipal waste handled by original county of waste origin, and to 2) deliver any Regional municipal waste only to processing/disposal facilities approved in the Plan Revision.

Submission packages were received in March 2022, and were reviewed in accordance with evaluation criteria outlined in the SOI. A total of five (5) waste disposal facilities and four (4) waste transfer stations responded to the SOI.

Four (4) respondents agreed to accept waste at their facilities for a total of 10-years. Waste Management’s Northwest Sanitary Landfill noted that they have approximately four (4) years of disposal capacity remaining at their current volumes, but waste from the Region, accepted at this facility, will be redirected to a disposal facility through the use of transfer stations. The majority of responding disposal facilities agreed to donate capacity to county sponsored non-profit and/or public cleanup events. The donated tonnages are listed in Table 3-6.

**Table 3-6
Donated Disposal Tonnage for Non-Profit and/or Public Cleanup Events**

Facility	Tons Donated
AD Greentree Landfill	200
Seneca Landfill	1 (minimum)
WM Northwest Sanitary Landfill	50
WM Lake View Landfill	50
WM Mahoning Landfill	3% of MSW tonnage accepted from Region up to a maximum of 50

Source: Tons donated obtained from SOI responses

As part of the SOI, respondents were asked to identify a reserved capacity for the acceptance of sewage sludge, separate from MSW. All five (5) respondents agreed to accept sewage sludge at their facilities. Waste Management’s Lake View Landfill and Northwest Sanitary Landfill agreed to accept sewage sludge as a percentage of total MSW accepted from the Region at these facilities. Waste Management’s Mahoning Landfill, Advanced Disposal’s Greentree Landfill and the Seneca Landfill all agreed to accept a minimum amount of sewage sludge, regardless of the amount of MSW disposed by the Region at these facilities. The amount of reserved tonnages for sewage sludge only is listed in Table 3-7.

Table 3-7
SOI Respondents Guaranteed Minimum Tonnage for Sewage Sludge (in Tons per Year)¹

Respondent	Tons of Sewage Sludge Per Year
Advanced Disposal Greentree Landfill	5,200
Seneca Landfill ²	11,250
WM Lake View Landfill	10% of MSW up to 4,500
WM Mahoning Landfill	44,980
WM Northwest Sanitary Landfill	10% of MSW up to 4,500
Total³	61,430

¹ Tonnages obtained from Respondents SOI Submissions.

² Includes tonnage of sewage sludge, MSW, C&D, processed medical waste, residual, and other special handling wastes.

³ Does not include tonnages contingent on delivery of MSW.

Not all facilities agreed to accept all fractions of MSW, including special handling wastes; however, among multiple facilities, the needs of the Region were met. Additionally, all respondents to the SOI confirmed that they are properly permitted to accept municipal waste. All of the transfer station respondents agreed to the terms of the SOI.

Appendix A contains Table 2 and Table 3, which outline the SOI responses from the waste disposal and processing facilities, as well as the ceiling tipping fees provided by the waste disposal facilities, and Table 4, which lists the proposed backup disposal facility for each submittal.

All respondents' submission packages were reviewed and considered complete by B&L, the SWACs of each County and the Planning Departments of each County, upon further consideration/clarification of the submissions and SOI requirements. A review memorandum contained in Appendix A documents a summary of all submittals and the facilities that were recommended for inclusion in the Plan Revision, based on review, discussion, and recommendation by the SWACs. The selected facilities are listed in Chapter 6 of the Plan Revision.

The SWACs chose to recommend to the County Commissioners contracting with five (5) disposal sites, along with four (4) total transfer stations. Factors considered were proximity to the Region, current use of these facilities by the private sector haulers, and the need to contract with multiple sites in order to provide for acceptance of all categories of municipal wastes. The details related to those selections are presented in Chapter 6 and in Appendix A. The five respondents will provide more than the required minimum municipal waste disposal capacity assurance for the Region for the next 10-years.

The facilities selected through the SOI process will enter into a waste disposal capacity agreement fully aware of the amount of waste they have to accept and the ramifications this may have on the life of their facilities

and their permit status. Disposal facilities are also aware that they may receive limited amounts of waste or no waste at all from sources as explicitly stated in the agreement.

It is the intent of the Region to enter all new waste transfer and waste disposal agreements with selected facilities no later than June 2023 to coincide with the expiration of the current contract agreements in June 2023. At that time, copies of the executed transfer and disposal contracts will be placed in Appendix E of this Plan Revision.

The MSW and sewage sludge tonnage guaranteed from the respondent disposal facilities in the SOI is shown in Table 3-8. Based on the projected needs, the SOI respondents guaranteed tonnage is adequate to meet the MSW disposal needs during the 10-year planning period. Chapter 6 contains a summary of the results of the SOI and the decisions made regarding selection of processing/disposal sites.

Table 3-8
Waste Disposal Capacity Assurance (in Tons)¹

Facility	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Northwest Sanitary Landfill	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
Lake View Landfill	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
Mahoning Landfill	179,920	179,920	179,920	179,920	179,920	179,920	179,920	179,920	179,920	179,920
Greentree Landfill	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000
Seneca Landfill	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250
Total Disposal Capacity Assurance for MSW and C&D¹	423,170	423,170	423,170	423,170	423,170	423,170	423,170	423,170	423,170	423,170
Total Disposal Capacity Assurance for Sewage Sludge	50,180	50,180	50,180	50,180	50,180	50,180	50,180	50,180	50,180	50,180
Total Disposal Capacity Assurance for MSW, C&D and Sewage Sludge	473,350	473,350	473,350	473,350	473,350	473,350	473,350	473,350	473,350	473,350
Projected Generation For Disposal (MSW, C&D and Recyclables)	42,878	43,745	44,612	44,655	44,697	44,739	44,781	44,824	44,820	44,817
Projected Recyclables Diverted	102	104	106	106	106	107	107	107	107	107
Projected Capacity Needs for MSW and C&D Wastes (Net of Recycling)	42,776	43,641	44,506	44,548	44,590	44,633	44,675	44,717	44,713	44,710
Projected Capacity Needs For Sewage Sludge	1,035	1,053	1,070	1,069	1,067	1,066	1,064	1,063	1,060	1,058
Total Potential Capacity Needs (MSW, C&D, Special Handling Waste, and Recyclables)	44,306	45,198	46,091	46,132	46,173	46,214	46,255	46,296	46,290	46,284
Capacity Needs Met	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

¹: Several facilities committed tonnages that included MSW, C&D and sewage sludge capacity.

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CHAPTER 4 - DESCRIPTION OF RECYCLING PROGRAM

This chapter describes the recycling activities currently taking place in the Region, the goals for recycling over the 10-year planning period, and the impact of recycling on the amount of municipal waste requiring disposal/processing capacity.

4.1 Materials Addressed by Act 101

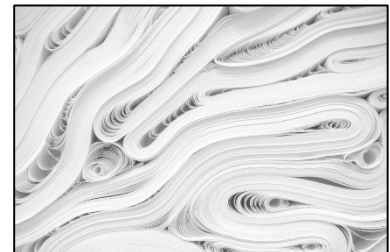
Newsprint – Newsprint or newspaper is primarily generated in the residential sector. Post-consumer waste newspaper is called “old newspaper” or “ONP”. ONP can be recycled back into newsprint. It can also be made into cellulose insulation, animal bedding, mulch, low-grade copy and computer paper, and paperboard. Paperboard is a trade term that includes all cardboard types, such as corrugated cardboard and tablet backings, as well as the paper lining on gypsum wallboard. ONP can also be shredded and used as a bulking agent in composting wet organic wastes, such as sludge, manure, or food waste.



Corrugated Paper – Corrugated paper, sometimes referred to in the recycling industry as “old corrugated containers” or “OCC”, composed primarily of corrugated cardboard boxes, also comprises a significant portion of the municipal waste stream. The majority of it is generated in the commercial sector, although

growth in on-line shopping has resulted in increased OCC from growing use of shipping boxes for home deliveries. Recovery of OCC is conducted by the commercial waste generators and private haulers, and is now collected in many residential curbside collection programs to reduce disposal costs and potentially earn modest sales revenue. Recovered OCC is mixed with virgin pulp to make new corrugated cardboard. It can also be used in the manufacture of other types of paperboard.

High Grade Office Paper – High grade paper includes computer print-out, office papers, and ledgers. Most of it is found in the commercial sector, particularly in office buildings, where it can comprise the majority of the office’s waste stream. Computer printout and white ledger can be made back into high grade paper. However, to make bright white paper requires that the recycled fiber be supplemented with a large percentage of virgin pulp. A common use is in the manufacture of tissue products such as paper towels and toilet paper. High grade paper is also used to make paperboard.





Mixed Paper – Mixed paper refers to a mixture of the above three types of waste paper plus other waste papers such as junk mail, phone books, magazines, cereal and pizza boxes. Roofing material and boxboard manufacture are traditional uses of mixed paper, and for the production of low grade tissue and toweling products.

Glass – Although glass is found in a variety of forms and colors (e.g. clear, green and amber) in the municipal solid waste stream, container glass (i.e. bottles and jars) is the most commonly recyclable type of glass. The majority is generated in the residential sector. Waste container glass can be melted and mixed with virgin glass ingredients to make new container glass.



Steel and Bimetal Cans – There are two types of steel cans: tin-coated cans commonly known as “tin cans” and “bimetal” beverage cans. Bimetal cans have a coated steel body and aluminum ends. Bimetal beverage cans are easily mistaken for aluminum cans.

Aluminum Cans – Aluminum cans or used beverage cans (UBC) are among the most easily recoverable aluminum products. Aluminum cans are very readily reprocessed into new aluminum sheet. Other products containing aluminum, such as cookware, use a different type of aluminum and are not accepted at recycling centers since the different varieties are not readily substitutable. The cost savings from using scrap aluminum rather than virgin inputs has provided for a strong scrap aluminum market.





Plastics – Plastic is a generic term that defines a wide variety of materials that are made up of one or a combination of plastic resins. The two (2) most common, recyclable types of plastic are PET (Polyethylene terephthalate - #1) and HDPE (high density polyethylene - #2). PET (#1) is most commonly used to produce soft drink bottles. HDPE (#2) is most commonly used to produce milk and water containers, colored and opaque detergent bottles, and motor oil containers.

Plastic bags and plastic wraps make up the category “plastic film.” Plastic film is thin polyethylene plastic used for wraps, packaging, or commercial/retail use bags. It’s sometimes called stretch film. Plastic film may be labeled with a #2 HDPE or #4 LDPE marking. Plastic film includes everything from grocery and bread bags to shrink wrap and paper towel film, while items such as pre-washed salad mix bags and frozen food bags are often considered non-recyclable plastic film. Although plastic bag recycling is prevalent at many grocery store chains, plastic film is not always collected with the plastics bags.

Yard and Leaf Waste – Mandated municipalities are required to separate yard and leaf waste from other municipal waste. Also, since September 26, 1990, PADEP regulations do not allow any waste disposal facility to accept shipments comprised primarily of yard and leaf wastes unless a separate composting facility has been provided. Organic materials can be ground into mulch, or processed to create compost, and has been proven to be beneficial in many municipal, residential and agricultural applications, while removing a substantial quantity of waste stream material from landfill disposal.



Other Recyclable Materials Not Specifically Addressed by Act 101 – Large appliances or “white goods” can be shredded and the steel separated for recycling. Some scrap dealers in the county accept white goods. In addition, many appliance stores will accept appliance trade-ins when selling a new appliance or pickup of an old appliance for a fee. Residents can bring their old appliances to the Clarion County Recycling Day, which accepts Freon containing devices at a cost, as well as washers, dryers, dishwashers, stoves, etc. that do not contain Freon at no cost.



Provided markets can be found, various other types of materials in the municipal waste stream can be recycled. Tires, used motor oil, and automotive batteries are examples of recyclable items that pose disposal problems. Used tires can be retreaded, shredded and processed into crumb rubber for use in rubber plastic products, or they can be used to produce a durable ingredient in the production of asphalt. Alternatively, tires can be shredded and burned as a source of fuel. Garages and local tire retailers in the Region that sell tires offer to properly dispose of tires for a fee. Residents are responsible for transporting the tires to those facilities.

A program, founded in 2012, that encourages the recycling of textiles, as well as other accessories and household goods is the Give Back Box® program. Many retailers currently participate in this program, such as Amazon and Overstock, just to name a few. When residents receive packages from a participating retailer, they can pack their shipping box with donation items, such as clothing and household goods, print a free shipping label from the website listed below and send their donations to one of several participating charities. The charities stock their shelves with the donations and the revenues help fund its mission of helping people. The charities also recycle every box that arrives at their facilities. The Give Back Box program has created a new method of waste diversion for retailers by not only creating a secondary use for the shipping box and guaranteeing that it will be recycled, but also by helping clear out closets and recycle even more textiles and household goods. More information on this program can be found at the following location: www.givebackbox.com.

Other programs have also been implemented by companies such as H&M, J. Crew, and DSW to recycle clothing, textiles, shoes and other products.

Household Hazardous Waste, Batteries, and E-waste

Clarion County currently offers a one or two collection events per year for residents and small businesses to dispose of certain e-waste, household hazardous waste, and universal waste items.



Household Hazardous Waste

HHW includes items such as automotive batteries, used motor oil, antifreeze, car care products, CFL bulbs and fluorescent tubes, latex paint, oil based paints, oil based paint cleaners, adhesives, gasoline, diesel, kerosene, pesticides, herbicides, insecticides, pool chemicals, drain cleaners, acids, mercury, etc. that are generated at the residential level.

The metal in automotive batteries and the polypropylene plastic case are recyclable. Used motor oil can be refined to produce heating fuel, industrial lubricants and even new motor oil. Automotive batteries,

oil filters, and automotive fluids, such as antifreeze, used oil, etc. can be taken at many of the local auto stores at no cost to the residents. Many of these same locations will accept automotive batteries at no cost to the resident or the resident can sell their automotive battery to a scrap yard. Per Section 1510 (c) of Act 101, a retailer that sells lead acid batteries is required to accept used lead acid batteries equal to the number of new lead acid batteries purchased so anyone that buys a new lead acid battery can recycle their old one in this way.

CFL and fluorescent bulbs are accepted at no cost at many home improvement stores, additionally, bulbs can be recycled at smaller specialty stores.

Residents can drop off the following materials at the Clarion County Recycling Day:

- Common batteries (alkaline and zinc-carbon), lantern batteries, button cell batteries, reactive batteries at a cost.
- Bulbs – incandescent, compacts, fluorescents, neon, UV lamps, spot lamps, HID, Sodium & Mercury Vapor lamps, straight U-shape lamps at a cost.
- Paint – oil based and latex at a cost.
- Bleach, household cleaning products, acid household cleaning products, stain, thinner and finishes, gas, diesel, kerosene and additives, wood/metal cleaners and polishes, pesticides, herbicides, fungicides at a cost.



E-Waste

Electronic waste contains metals that, if not properly managed or contained, can become hazardous wastes. The “Covered Device Recycling Act” (House Bill 708), PA Act 108 of 2010, established a recycling program for certain covered devices; imposed duties on manufacturers and retailers of certain covered devices; provided for the powers and duties of PADEP including enforcement; established the Electronic Materials Recycling Account in the General Fund; and prescribed penalties for noncompliance.

In January 2013, a disposal ban on covered devices went into effect, after which no person was allowed to dispose of a covered device or any of its components with their municipal waste.

Residents can drop off the following materials at the Clarion County Recycling Day:

- Televisions and monitors at a cost.
- All other electronics at a cost. This includes desktop computers, laptop computers, microwaves, cellphones, printers, scanners, faxes, copiers, computer peripherals, CD players, DVD players, VCR players, CDs, DVDs, Blue Ray Discs and more.

Additionally, the Waste Management Transfer Station, located in Paint Township, may accept e-waste from residents in both Clarion and Forest County. As this program is managed by the private sector,

municipalities and residents are encouraged to check with Waste Management on the materials accepted and cost for disposal at this location, as this is subject to change without County control.

4.2 Amount of Materials Recycled

Current recycling activities within Clarion and Forest Counties have an impact on the amount of solid waste being disposed of in the Region. A total of approximately 100 tons of recyclable material was reportedly diverted from the Regional waste stream and recycled in 2020. This included both residential and commercial recycling tonnage totals. The recycling rate is calculated by dividing the recyclables tonnage total for both the residential and commercial sector (as reported to each County) by the total tons of municipal solid waste (MSW), construction and demolition (C&D) and recyclables generated for a given year (from PADEP Waste Destination Reports and recyclables tonnage reports submitted to the Counties). The recyclables tonnage total may include the following materials from the residential and commercial sector:

Residential recyclables include:

- Single stream recyclables
- Commingled recyclables
- Glass
- Cardboard
- Newspaper, mixed paper and office paper
- PET, HDPE and mixed plastics
- Aluminum and bimetallic cans
- Scrap and mixed metals
- White goods
- HHW and e-waste (i.e. antifreeze, batteries, e-waste, lightbulbs, oils, etc.)
- Tires
- Organics (food, wood, leaf and yard waste)

Commercial recyclables include:

- Single stream recyclables
- Commingled recyclables
- Glass
- Cardboard
- Magazines, newspaper, mixed paper and office paper
- PET, HDPE, LDPE, PP, PS and mixed plastics
- Aluminum and bimetallic cans
- Scrap and mixed metals
- White goods
- HHW and e-waste (i.e. antifreeze, batteries, e-waste, lightbulbs, oils, etc.)
- Tires
- C&D material

- Clothing/textiles
- Asphalt shingles
- Organics (food, wood, leaf and yard waste)

Per Capita Recyclables Diversion Rate

The Region’s 2020 recycling rate was 0.85% for the Region. The amount of material recycled or otherwise diverted from disposal in the Region has been steady since 2016. The majority of recyclables collection and processing in the Region is managed by the private sector, thus requiring municipalities and/or the Counties to obtain the recycling tonnages from private industry for accurate reporting.

Based on the estimated 2020 County populations, the per capita diversion rates for recyclables and organics, is approximately **0.01 tons per capita per year (Clarion County), and 0.00016 tons per capita per year (Forest County).**

The national average recyclables diversion rate is 0.35 tons per capita per year (1.9 pounds per capita per day). This is based on the EPA Sustainable Materials Management Report dated December 2020. This recyclables diversion rate includes materials recycled using typical methods, i.e. curbside and drop-off, as well as those materials composted and those food waste materials recycled using other management initiatives.

The recycling projections calculated for the Counties were computed based on the per capita recyclables/organics diversion rate and a steady continuation of the current rate of recycling factored in over the 10-year planning period.

Waste Composition Study

Act 101 requires each municipality to submit to the County in which it is located a report “...describing the weight or volume of materials that were recycled by that municipal recycling program in the preceding calendar year.” The data for those reports generally comes from three (3) sources:

- Residential curbside programs – from reports submitted to the municipality by the private sector hauling firms with whom the municipality or individual residents had contracted for recycling services.
- Residential drop-off programs – from reports submitted to the municipality or County by the sponsoring entity, hauler who collects the material, and/or the recycling facility that receives and processes the material.
- Commercial/Institutional programs – from each individual establishment which had initiated a recycling program or from the private sector waste hauling firm providing the recycling service.

In 2001, PADEP retained RW Beck to perform a statewide municipal solid waste characterization study to understand the composition of solid waste being disposed in Pennsylvania. The study was designed to estimate the composition of disposed MSW generated in the commonwealth’s six regions, as well as the statewide aggregate composition. RW Beck completed the study in April 2003. The northwest regional

data was utilized for the Plan Revision. Results from the study are shown in the pie graph below. Each section indicates the tons of material landfilled annually as well as the percent of the total waste disposed for each category.

Figure 4-1
Clarion County Waste Composition Based on RW Beck Statewide Study in Tons (%)

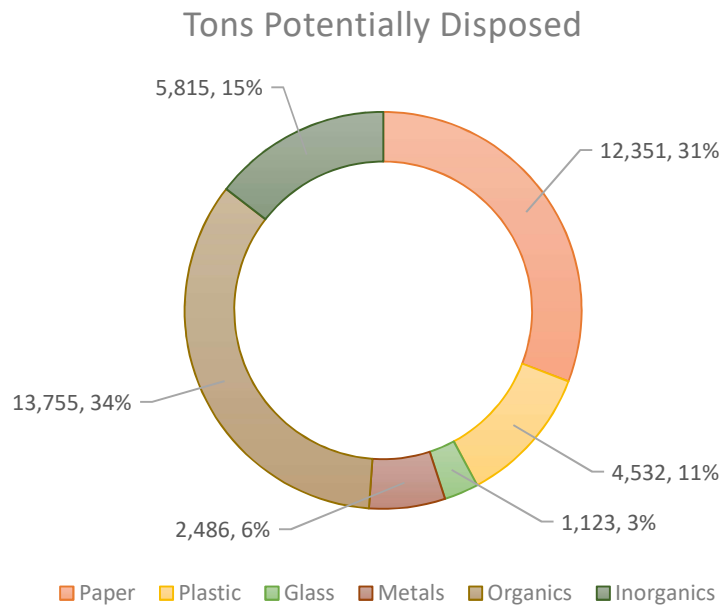


Figure 4-2
Forest County Waste Composition Based on RW Beck Statewide Study in Tons (%)

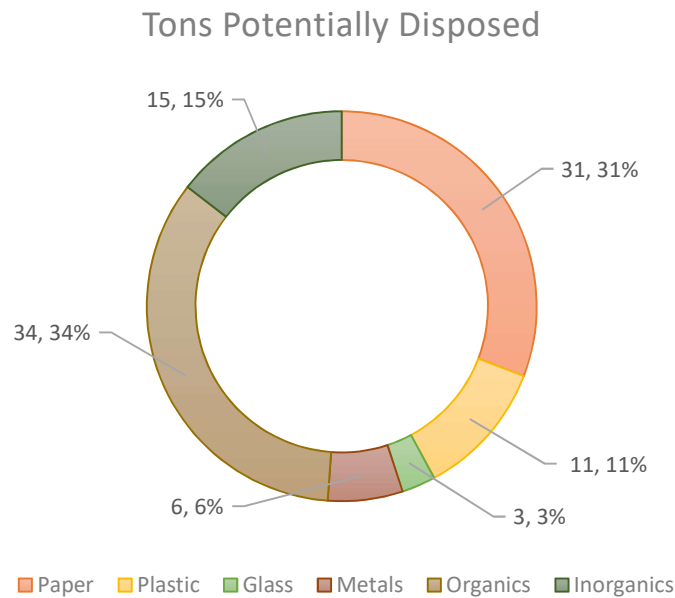
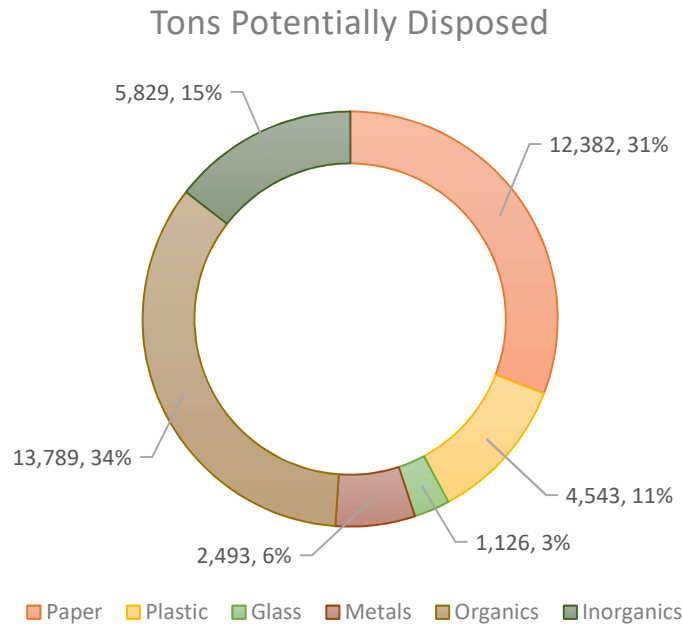


Figure 4-3
Regional Waste Composition Based on RW Beck Statewide Study in Tons (%)



An examination of data from the RW Beck statewide waste composition study, suggests that of the remaining municipal waste currently being disposed of in Pennsylvania, there is additional discarded waste that can potentially be recycled. However, there are many factors that determine which materials are actually removed from the waste stream. These factors include, but are not limited to:

- availability of markets for the materials;
- economics of a recovery system;
- competing options;
- the percentage of people that participate in recycling;
- how easily the materials can be segregated for recovery; and
- how efficient people are in diverting the materials for recycling.

The statewide waste composition tables located in Appendix C, present an estimate of the current composition of the discarded municipal waste stream (after source separation) by material as well as an estimate of the potential remaining tons of recyclables in the discarded waste stream, according to the 2003 RW Beck Statewide Study for Clarion County, Forest County, and the Region as a whole. The national waste composition tables located in Appendix C present an estimate of the current composition of the discarded municipal waste stream in Clarion County, Forest County, and the Region (after recycling and composting) by material and an estimate of the potential remaining tons of recyclables in the discarded waste stream according to the EPA Advancing Sustainable Materials Management 2018 Fact Sheet, written in December 2020. These composition studies are a good side-by-side comparison as to the

amount of material potentially available for recovery in the discarded waste stream over the ten-year planning period.

This information shows that there is still room for improvement in recycling for certain commodities. For counties and municipalities to increase their recycling of those commodities, they first need to establish a sustainable funding source to support recycling programs and investigate available markets for the recyclable material.

In order to reach the State's recycling goal of 35%, the Region will need to increase their recycling tonnages annually, while decreasing the amount of waste landfilled each year. Based on their current waste disposal rate, projected over the 10-year planning period, the Region will need to increase their recycling tonnages by approximately 14,000 tons to reach 35% recycling by 2032.

The Plan Revision is providing the tools (via ordinance templates) to expand optional curbside recyclables collection programs for private "subscription" customers to municipalities in the Region. If curbside recyclables collection programs, in non-mandated communities, increase across the Region, the recycling rates may increase over time.

As noted above, the last statewide waste composition study was started in 2003, nearly 20 years ago. The Pennsylvania Department of Environmental Protection (DEP) is conducting a new statewide waste and recycling composition study with a goal to create a targeted recycling program, optimize collections and provide guidance and assistance to local municipalities, haulers and material recovery facilities (MRFs). Data from the study hopes to help the DEP adjust funding and prioritize grant programs, as well as help local governments focus their programs on what material is in the stream. When asked about the study, Larry Holley of the PADEP stated that they think the study will reaffirm the need to look at OCC in the waste stream and have everybody collect that material. Holley said local governments and waste and recycling facilities have been subject to the same challenges as the rest of the nation, including rising recycling costs and changes in the marketplace; however, MRFs in the state have been able to withstand programs because they were depending on domestic markets. Holley believes this study and data is the foundation to start a conversation on changes to how we collect material and implementing regulations or recommendations and other changes that will result in the reduction in the amount of waste we generate and targeted recycling programs. Approximately 12 waste facilities and 6 to 12 recycling facilities will participate in the statewide audit. The study will look at six geographic regions of Pennsylvania and include more than 1,200 samples of waste and recycling. Holley stated that the information gained from this will help modify PADEP programs, whether a MRF, a landfill operator or a recycler. It will let an entity know what they are collecting and how better to structure their programs, including their education programs.

One goal of the new study is to understand how much organics is being disposed of in the state. This is of interest not only to landfills that have energy recovery systems, but also to local governments interested in diverting organics from landfill and creating organics collection programs. The study will allow the DEP to focus grants on those targeted materials and materials to increase in the recycling stream.

Pennsylvania has previously launched an education campaign around recycling, which cost millions of dollars per year on educational efforts, including public service announcements and commercials. The DEP will work to launch a new education campaign as a result of this study that appeals to the next generation of recyclers.

4.3 Existing Material Recovery Operations

In the past two decades, communities and businesses in the Region have made notable strides in reducing the amount of municipal waste requiring disposal. Two municipalities have implemented a curbside recyclables collection program (Clarion Borough in Clarion County and Tionesta Borough in Forest County) and four (4) municipalities have access to a recyclables drop-off programs, located within their municipality, for the benefit of their residents and businesses. One of these drop-off locations is private, owned by Waste Management and located in Paint Township. It is available to any resident, living in or out of the municipality where the facility is located. The remaining municipalities do not currently have access to municipal-wide public or private curbside or drop-off recycling. Tables 4-3 and 4-4 list the materials that are accepted by municipal recycling curbside and drop-off programs in the Region.

4.3.1 Recyclables Processing Facilities

There are no permitted material processing facilities (MRFs) located in Clarion or Forest Counties. The permitted MRFs located in contiguous Counties are listed in Table 4-1 below.

Table 4-1
Material Processing Facilities (MRFs) Located Near the Region

Facility	County	Open to the General Public	What Forms of Materials are Accepted	Materials Accepted
Tri-County Recycling LLC 120 Hutchman Rd. Mars, PA 16046	Butler	No	Single Stream	Plastic bottles 1 and 2; news and office paper; corrugated cardboard; aluminum and tin cans
Armstrong County Recycling Center 139 Armsdale Rd. Kittaning, PA 16201	Armstrong	Yes	Source Separated	Plastic bottles 1 through 6; 3 colors of glass; tin and aluminum cans; office paper; cardboard; newspaper; waste oil
Leechburg Borough Recycling Center 260 Market Street Leechburg, PA 15656	Armstrong	Yes	Source Separated	Plastic bottles 1 and 2; 3 colors of glass; tin and aluminum cans; office paper; corrugated cardboard; chipboard; newspaper; magazines; junk mail; telephone books

Elk County Community Recycling Center 850 Washington Street St. Mary's, PA 15857	Elk	Yes	Source Separated	Aluminum and tin cans; mixed paper (newspaper, magazines, catalogs, junk mail, books, office paper, paperboard, cardboard); plastics 1, 2 and 5
RecycALL 4832 Route 155 Port Allegheny, PA 16743	McKean	Yes	Source Separated	3 colors of glass; mixed cullet; wooden pallets

Source: PADEP

4.3.2 Organics Management Facilities in the Region

There is one (1) publicly operated yard waste drop-off facility located in Clarion Borough, Clarion County. This location accepts leaves, grass clippings, brush and trees and is located at the Clarion Borough Public Works Building, 1148 Veterans Drive, Clarion, PA 16214. This location is open to Clarion Borough residents and/or property owners only.

4.3.3 Regional Recyclables Drop-Off Sites

There are currently four (4) drop-off sites for Act 101 and other various recyclable materials within the region. The public and privately operated drop-off sites are listed below in Table 4-2.

Table 4-2
Regional Drop-Off Facilities

FACILITY	LOCATION	Materials Accepted
Clarion County Transfer Station (Paint Township)	18380 Paint Boulevard Shippenville, PA 16254	E-waste, aluminum, steel and tin cans, #1 plastic PET and HDPE bottles and jars
Paint Township Municipal Building Drop-Off	22139 Route 66 Shippenville, PA 16254	Aluminum cans, steel and tin cans, plastic PET and HDPE bottles and jugs
Clarion Borough Drop-Off Facility	1148 Veterans Drive Clarion, PA 16214	Leaves, grass clippings, brush and trees
Tionesta Borough Drop-Off Facility	631 Elm Street Tionesta, PA 16353	Bottles, cans and newspapers

Source: PADEP RecycleSearch

4.3.4 Other Private Regional Facilities

There are a number of operations in or near the Region accepting and processing electronics, HHW, and C&D waste materials, as well as other hard-to-recycle materials.

4.3.5 Reuse

Reuse means to use something again rather than throwing it out. Reuse conserves energy and raw materials needed to make new products, and doing so saves energy and reduces the amount of pollution released into the air and water. By recycling or reusing plastic, metal, or glass items, you can reduce the need to mine, transport, and manufacture natural resources to make new products.

4.4 Summary of Municipal Recycling Programs

The 2020 U. S. Census figures indicate that there are no municipalities within the Region with greater than 5,000 people and a population density greater than 300 people per square mile, thus mandated to implement a recycling program.

Recycling service is largely offered to residents in the Region through the use of recyclables drop-off locations. There are four (4) drop-off locations within the Region. One (1) is owned and operated by Waste Management, while the remaining three (3) are managed and operated by the public sector.

Although there are no mandated municipalities in the Region which requires commercial, institutional and retail establishments to recycle, the non-mandated municipalities in the Region should encourage commercial, institutional and retail establishments, as well as community events, to voluntarily participate in the Act 101 recycling program requirements. This may include the recycling of glass bottles and jars, aluminum cans, aerosol and steel cans, plastic containers and bottles, corrugated cardboard, newspapers, magazines, catalogs and high grade office and copy paper, plus leaf waste. Commercial and retail establishments are encouraged to contact their municipal officials to obtain information regarding recycling, solid waste management, and helpful guidelines for the proper disposal of many types of waste and recyclable materials.

Tables 4-3 and 4-4, located at the end of this chapter, list the municipalities in Clarion and Forest County, the type of residential recycling program used in each municipality in 2022, and the materials collected by the program.

The future recycling program within the Region will continue to utilize the existing drop-off facilities, encourage curbside collection of recyclable materials and encourage the use of local businesses for the management of hard-to-recycle materials.

4.5 Environmental Benefits of Recycling

The benefits of recycling stem from four (4) sources: the value of the recyclable material in its reuse; the reduction in the waste requiring collection, transportation, processing, and disposal; the reduction in raw materials required to manufacture new products; and the energy saved in processing the raw materials

to the point of manufacturing use. The reuse value of the material is reflected in its market price, although, the average recyclables net market value (after transportation and processing) is often close to zero; the chief financial benefit of recycling for consumers is usually the avoided cost of disposal.

B&L performed an EPA WARM model computer evaluation, which estimates the impacts and benefits of recycling activities on the environment based on 2020 Recycling Report Summary. The WARM model calculates various savings based on the tonnages of materials recycled. Appendix C contains the result tables of the EPA WARM model evaluation.

Using the PADEP Waste Destination Report and Re-TRAC tonnages, 2020 total recycling efforts provided environmental benefits that were the equivalent of the following estimated resource consumption savings and pollution reductions:

- A net reduction in greenhouse gas emissions by 851 metric tons of carbon dioxide equivalent (MTCO₂E) or 232 metric tons of carbon equivalent (MTCE);
- A reduction in the net energy consumption by 8,800 million BTUs (British Thermal Units);
- Conservation of 1,518 barrels of oil;
- Conservation of 71,000 gallons of gasoline;
- Reduction of annual emissions from 179 average passenger cars on the road (based on the equivalent amount of energy and fuel used by a passenger car each year and the average GHG emissions released by a passenger car per year);
- Conservation of 35,400 cylinders of propane used for home barbeques.

4.6 Recycling in Relation to PA Recycling Goals

Upon reaching the 25% recycling goal specified in Act 101 in 1997, the Governor's Office established a new goal of 35% recycling to be achieved by 2003. The Regional 2020 recycling rate was approximately 0.85%.

A trend in packaging has been occurring, away from heavier glass and metal containers to lighter, thinner-walled plastics and aluminum. This is a positive trend in source (tonnage) reduction, but also results in a lighter tonnage (and therefore, lower weight-based "percent recycled" tonnage) being recycled. Thus, the actual "percent recycled" rate is becoming of less importance than just taking steps to optimize recycling, where practical. Even maintaining the recycling rate over time may require increased recycling of lighter materials.

In an effort to increase recycling, the Counties may want to focus on strategies designed to expand or supplement existing recycling programs, educate residents on recycling practices, improve the quality of

recyclable materials, and improve current data collection efforts. Counties may want to provide advice to municipalities developing or expanding programs such as the establishment of yard waste collection (woody materials), curbside recycling collection, or food waste collection (curbside or drop-off).

The unfortunate perception in the past has been that recycling is “free”. The reality is that recycling costs money. In a curbside system, it costs money to obtain the totes used to collect recyclables curbside, it costs money to collect and transport those recyclables to a transfer station or material recovery facility (MRF), and it costs money to process this material at these facilities. It also costs money to dispose of the contamination that must be removed from the recycling stream (often more prevalent in single stream systems). At the end of the process, there is money to be made through the sale of the recyclables, but the recycling market is highly fluctuating and the value of the material is ever changing. This same model holds true for drop-off recycling. Additionally, recycling requires employees and space to process and sort this material. As noted in Chapter 5, it is recommended that future municipal recycling programs are offered at an appropriate rate to cover the costs associated with the service.

There are currently no regulations in place that require waste disposal facilities or haulers to provide a certain level of recycling to residents, other than the requirement that all disposal and transfer facilities must contain a drop-off which collects at least three (3) Act 101 materials. Any regulations regarding recycling service at a county or municipal level typically come from ordinances or contracts developed by the entity.

**Table 4-3
Municipal Recycling Programs – Clarion County**

MUNICIPALITY	2020 POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	#1 - #5 AND #7 PLASTICS	#1 AND #2 PLASTIC ONLY	YARD WASTE	OTHER
Ashland Township	1,119	No														
Beaver Township	1,833	No														
Brady Township	77	No														
Callensburg Borough	150	No														
Clarion Borough ¹	3,931	No	Curbside Drop-Off				X	X	X	X	X	X		X	X	
Clarion Township	3,645	No														
East Brady Borough	818	No														
Elk Township	1,434	No														
Farmington Township	1,781	No														
Foxburg Borough	181	No														
Hawthorn Borough	477	No														
Highland Township	534	No														
Knox Borough	1,093	No														
Knox Township	996	No														
Licking Township	577	No														
Limestone Township	1,871	No														
Madison Township	1,157	No														
Millcreek Township	365	No														
Monroe Township	1,487	No														
New Bethlehem Township	978	No														
Paint Township	1,645	No	Drop-Off							X	X			X		
Perry Township	919	No														

Table 4-3 - Continued
Municipal Recycling Programs – Clarion County

MUNICIPALITY	2010 POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	#1 - #5 AND #7 PLASTICS	#1 AND #2 PLASTIC ONLY	YARD WASTE	OTHER
Piney Township	399	No														
Porter Township	1,289	No														
Redbank Township	1,332	No														
Richland Township	469	No														
Rimersburg Borough	942	No														
Salem Township	896	No														
Shippenville Borough	442	No														
Sligo Borough	681	No														
St Petersburg Borough	336	No														
Strattanville Borough	537	No														
Toby Township	982	No														

Notes:

¹ Clarion Borough’s population was 5,276 as of the 2010 US Census, therefore making this municipality a mandated community at the writing of the last solid waste management plan. Since then, the population has dropped below the mandated community threshold of 5,000.

**Table 4-4
Municipal Recycling Programs – Forest County**

MUNICIPALITY	2010 POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	#1 - #5 AND #7 PLASTICS	#1 AND #2 PLASTIC ONLY	YARD WASTE	OTHER
Barnett Township	309	No														
Green Township	376	No														
Harmony Township	468	No														
Hickory Township	413	No														
Howe Township	194	No														
Jenks Township	3,858	No														
Kingsley Township	259	No														
Tionesta Borough	428	No	Curbside Drop-Off							X	X	X	X			
Tionesta Township	668	No														

Notes:

CHAPTER 5 - SELECTION AND JUSTIFICATION

The purpose of this chapter is to describe the process used to select and recommend components to the Region's overall waste and recyclables management system, and to provide justification for said selections and recommendations. Per PADEP regulations, the Region must ensure that the recommended system(s) provides the required capacity needed to properly process/dispose of all municipal waste generated within its boundaries over the next 10-years. This Chapter examines available and realistic processing and disposal alternatives for municipal waste; determines the compatibility of these alternatives with the existing waste and recycling systems in the Region; and makes recommendations for future adjustments to those systems.

5.1 Overview of Current Municipal Waste Management System

Processing and disposal of MSW is handled by private waste haulers for the vast majority of municipalities in the Region. The private sector handles the consolidation and shipping of mixed recyclables, collected curbside at privately operated transfer stations, as well as managing the processing and marketing of recyclables handled through their facilities. Processing and recycling/disposal of C&D waste is generally handled by the private sector. Biosolids (sewage sludge) and septage are mainly managed by a combination of wastewater treatment plants and private landfills, and regulated medical waste is managed privately through contracted collection and ultimate disposal at privately operated facilities.

Two municipalities in the region currently have access to curbside collection of recyclables. Clarion Borough offers yard waste drop-off for its residents, but there are no publicly owned yard waste composting facilities in the Region.

5.2 Waste and Recyclables Management – Alternatives

The following section briefly highlights waste collection, transfer, processing and disposal system alternatives that currently are or can be made available to the Region. This section focuses on alternatives that have specific compatibility or that show particular promise within the Region's waste management system that was described earlier in this chapter. Waste management alternatives that were not considered technically or financially feasible in the region have not been included.

5.2.1 Waste and Recyclables Collection

5.2.1.1 MSW Collection

There are four (4) basic methods for the collection of MSW (residential/commercial/institutional refuse) that are practical in this region.



Municipal Collection - Municipalities can provide refuse collection services to their residents using municipal employees and equipment.

Contracted Collection - Municipalities can contract via a public bidding procedure with a private waste hauler to provide refuse collection services to their residents (and typically institutions and small businesses as well.) This results in one waste hauler collecting from all residents along a collection route.



Subscription Collection - Individual households and businesses can each contract directly with a private waste hauler for refuse collection services, with limited or no municipal involvement. This often results in multiple waste vehicles from different waste collection companies collecting on the same route.

Self-Haul – Residents and businesses can self-haul wastes to a transfer station or disposal site.

Due to the capital costs associated with municipal collection, it is not recommended that a municipality change from subscription or contracted collection to municipal collection, unless a municipality has the capabilities in place, i.e. staff and vehicles.



Self-haul may be utilized by residents throughout the Region, regardless of the current collection system in the municipality. Often times residents utilize self-haul when disposing of larger bulk items, such as furniture and appliances, or when performing large home clean-up projects.

Contracted collection and subscription collection are the two most feasible options for this Region. Most municipalities currently utilize a subscription collection system, which allows residents to select their own

hauler. Benefits of this method include residents having the opportunity to choose the waste hauler that provides the services that best fit their needs and minimal to no government oversight which reduces the burden on municipalities and Counties, just to name a few. Some disadvantages with this method of collection include an increase in the number of waste vehicles on the roads, which can expedite the wear and tear on the roadways, and increase the frequency for repair, as well as potentially higher disposal costs for residents as there is no competitive bidding process.

Another feasible alternative for the Region is contracted collection. This option does require more oversight from either a municipality or a County depending on how the contract is implemented. If a municipality or County has the staff availability and the resources to manage the contract, field questions and manage billing, this can be an advantageous alternative for waste and recycling collection. Contracted collection typically ensures the most residents have access to curbside waste and recycling collection and often reduces the costs to residents as compared to subscription collection through the competitive bidding phase. Some disadvantages of this system are the oversight requirements, as well as the contract management. In recent years, the industry has seen major changes in a short timeframe to existing contracts for waste and recyclables collection due to the volatility of the markets. Oftentimes, communities are not in a position to change service providers and instead are left with acceptance of these changes or lengthy battles with the contracted agency. A well written contract is imperative to the success of a contracted collection program.

5.2.1.2 Recyclables

The collection methods for recycled materials are similar to the collection methods for residential waste. Recycled materials can be collected curbside through municipal collection, contracted collection, subscription collection, or by self-haul to central drop-off locations. The basic details of these collection methods are described above.

Regarding curbside collection of recyclable materials, three methods can be used: source-separated, dual-stream, and single-stream.

Source-separated recycling requires the resident to separate multiple streams of recycling at the curb (i.e. there may be a separate container for plastics, glass, paper and metal). This method makes processing much simpler and inexpensive, and tends to result in a cleaner recyclable material collected, which improves market value. Often this type of program has lower participation and material recovery and higher collection costs.

Dual-stream recycling, also known as commingled recycling, is similar to source-separated recycling, with the recyclables commonly separated into two categories: bottles/cans and paper fiber. Dual-stream recycling typically has the same benefits as source-separated recycling, but the collection method is

slightly different. For example, cans, glass and plastics may go in one container while paper fiber (cardboard, newspaper, etc.) go in another. This method of recycling often has lower processing costs and less contamination, but also may have lower participation and material recovery.

Single-stream recycling collects all of the recyclable materials in a single container at the curb. Some of the benefits of single-stream collection are ease of separating in the home, higher residential participation rates, higher quantities recycled, increased collection efficiency and the ease in which a municipality can incorporate small businesses and multi-family units into the program. Some of the disadvantages of single-stream recycling include lower recyclable material quality and market revenues, higher capital processing costs, decreased quality control at the curb, increased product contamination, and the potential to have to dispose of more material due to the contamination factor. Both dual-stream and single-stream collections require access to materials processing facilities in the Region that can receive and further process the collected recyclables.

There are many factors to consider when selecting a recycling program, such as what types and size of containers to give residents, what materials to collect, what type of truck will best suit the collection program, what types of recyclables processing infrastructure is available in the area, and how the recycling program will be funded (i.e. include in a subscription cost, pay through local taxes, fund through a pay-as-you-throw program, etc.). These considerations may be dependent on the type of waste collection program used.

5.2.1.3 Hauler Licensing or Oversight

In June 2002, Pennsylvania approved amendments to the existing solid waste management statutes (adopted as PA Act 90) that, among other provisions, established a statewide waste transportation safety program, including a licensing program for all waste haulers doing business in Pennsylvania. Any waste hauler with a GVW (gross vehicle weight) of over 17,000 pounds and trailers with a registered gross vehicle weight greater than 10,000 pounds that transports municipal or residual waste to a waste processing or disposal facility in Pennsylvania must have a valid Waste Transporter Authorization issued by PADEP. This program is administered by the State and prohibits counties or municipalities from implementing any new municipal waste or residual waste transportation authorizations or licensing programs. (Note – since the Act 90 program relates to licensing of larger waste vehicles, it leaves open the possibility of establishing a separate local licensing program for waste vehicles with less than a 17,000 pound GVW.) Based on this legislation, all larger haulers doing business within the Region need to meet the requirements of the State program. Hauler data collected from the State program is available on PADEP’s website at:

<https://www.dep.pa.gov/BUSINESS/LAND/WASTE/SOLIDWASTE/MUNICIPAL-RESIDUAL-WASTE--TRANSPORTATION/Pages/default.aspx>

It is up to individual counties to monitor waste hauling and disposal activities. The law prohibits processing and disposal facilities from accepting waste from regulated waste transportation vehicles that do not have a valid authorization.

Some counties in the Commonwealth continue to register (as opposed to licensing) haulers, usually with a minimal (or no) fee, to help ensure that basic information on the haulers, the municipalities served and the materials collected, is reported to the county or municipality regularly. The Region does not currently have a hauler registration program. Individual municipalities interested in establishing a hauler registration and/or licensing program for smaller haulers may contact the State for recommendations for the program.

5.2.2 Waste Transportation and Disposal

5.2.2.1 Transportation of MSW to Disposal Sites

Under Act 101, it is the responsibility of each municipality to provide for the proper collection and transportation of municipal waste generated from within their municipal borders to disposal facilities. A “disposal” facility in this context can be a regional transfer station, a landfill, a waste-to-energy facility, or another type of permitted processing, drop-off or disposal facility. All municipal solid waste generated within the Region must be transported to a duly permitted processing/disposal facility, with larger haulers duly licensed by the State as required by Act 90.

5.2.2.2 Transportation of Recyclables to Collection/ Processing Site

As with MSW, recyclables can be transported in three (3) ways to a collection/ processing facility or intermediate market: directly by residents and businesses, by waste haulers, or by municipalities. A “collection/processing” facility in this context includes a drop-off site, a transfer station, a materials recovery facility (MRF), or other suitable facility. Ultimately, the goal is for all segregated recyclables to be shipped to markets for reuse, or reused locally (such as inert materials for use as pipe bedding or aggregate).

Drop-off recycling sites can supplement curbside collection, and in areas where no curbside collection exists, provide the only opportunity for recycling. Drop-off recycling sites can enable a municipality to expand their current recycling program by enabling them to accept a broader range of materials from their residents than a hauler may collect. Typically, rural municipalities are not mandated to recycle under Act 101, and thus haulers may not offer curbside recyclables collection. Drop-off locations can provide residents the opportunity to recycle when their hauler does not offer it.

Segregated recyclable materials, such as those collected at the municipally operated drop-off locations throughout The Region, can be hauled directly to intermediate brokers or processors/ markets. Quantity, cleanliness and purity of the material, lack of contamination, and length of contract and contract terms are often factors that affect the prices paid (or owed) for recyclable materials delivery.

5.2.2.3 Alternative Disposal Technologies

There are a few alternative waste disposal technologies, in addition to landfilling and waste to energy, being utilized across the world that may be advantageous to the Region during the ten year planning period. Some of these technologies include:

- Anaerobic Digestion
- Gasification
- Composting



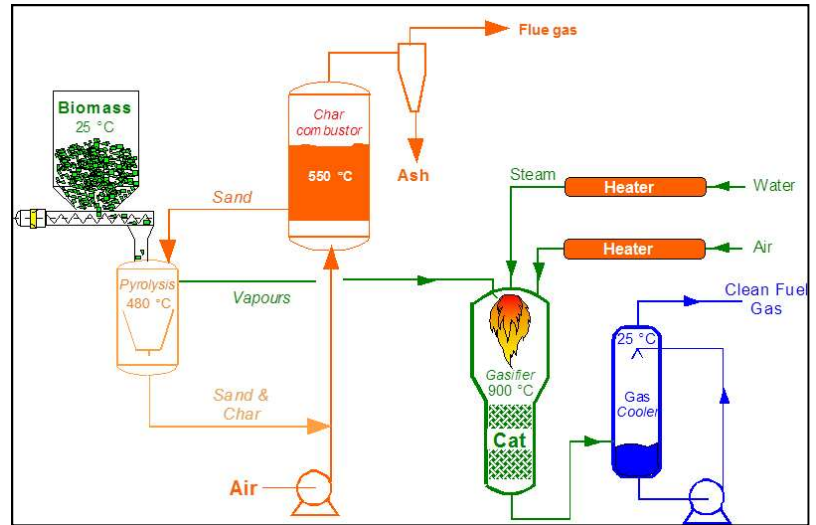
Anaerobic Digestion

Anaerobic digestion is a process by which microorganisms break down biodegradable material in the absence of oxygen. Anaerobic digestion is often used to treat biodegradable waste and sewage sludge. The photo to the left illustrates anaerobic lagoons and generators at the Cal Poly Dairy in the United States. Anaerobic digestion produces a biogas, consisting of methane, carbon dioxide and trace amounts of other gases. This biogas can be utilized as a renewable energy source. With new technological approaches that have lowered the capital costs of this type of system, anaerobic digestion has gained increased interest in the past few years.

If the Region or individual municipalities were interested in exploring anaerobic digestion, the feedstock available must be evaluated in order to determine if the project is financially viable. Almost any organic material can be processed with anaerobic digestion, but if biogas production is the intent, the level of putrescibility is important to the success of the system. Feedstocks can include biodegradable waste materials, such as waste paper, grass clippings, leftover food, sewage and animal waste. Woody wastes are the exception, because they are largely unaffected by digestion. As the cost of disposal continues to rise and outlets for these types of feedstocks become more limited, exploring a Region, County, or municipally owned and operated anaerobic digester, in conjunction with wastewater treatment plants and/or farms in the area, may be beneficial.

Gasification

Gasification is a process that converts organic or fossil fuel based carbonaceous materials into carbon monoxide, hydrogen, and carbon dioxide. This is achieved by reacting the material at high temperatures, without combustion, with a controlled amount of oxygen and/or steam. The resulting gas mixture is called syngas and can be used as a fuel



source. Feedstocks for this process include wood pellets and chips, waste wood, plastics and aluminum, municipal solid waste, refuse-derived fuel, agricultural and industrial wastes, sewage sludge, switch grass, discarded seed corn, corn stover and other crop residues.

One of the biggest challenges of gasification is achieving a positive gross electric efficiency. A large amount of power consumption is needed in the waste preprocessing, the consumption of large amounts of pure oxygen and gas cleaning. Additionally, this system requires servicing frequently to clean the reactors. This down time affects the financial gains of the system.

The main product of gasification is a syngas, which contains carbon monoxide, hydrogen and methane. The other main product produced by gasification is a solid residue of non-combustible materials (ash) which contains a relatively low level of carbon. Syngas can be used in a number of different ways, for example:

- Syngas can be burned in a boiler to generate steam which may be used for power generation or industrial heating.
- Syngas can be used as a fuel in a dedicated gas engine.
- Syngas, after reforming, may be suitable for use in a gas turbine.
- Syngas can also be used as a chemical feedstock.

The most important reason for the growing popularity of thermal processes for the treatment of solid wastes has been the increasing technical, environmental and public dissatisfaction with the performance of conventional waste disposal methods, i.e. landfilling and waste to energy. While evaluating gasification or other thermal technologies, the degree of pre-processing required in conversion of MSW into a suitable feed material is a major criterion. Unsorted MSW is not suitable for most thermal technologies because of its varying composition and size of some of its constituent

materials. It may also contain undesirable materials which can play havoc with the process or emission control systems.

The main steps involved in pre-processing of MSW include manual and mechanical separation or sorting, shredding, grinding, blending with other materials, drying and pelletization. The purpose of pre-processing is to produce a feed material with consistent physical characteristics and chemical properties. Pre-processing operations are also designed to produce a material that can be safely handled, transported and stored.

There are numerous solid waste gasification facilities operating or under construction around the world. Gasification has several advantages over traditional combustion processes for MSW treatment. It takes place in a low-oxygen environment that limits the formation of dioxins and of large quantities of SO_x and NO_x. Furthermore, it requires just a fraction of the stoichiometric amount of oxygen necessary for combustion. As a result, the volume of process gas is low, requiring smaller and less expensive gas cleaning equipment. The lower gas volume also means a higher partial pressure of contaminants in the off-gas, which favors more complete adsorption and particulate capture. Finally, gasification generates a fuel gas that can be integrated with combined cycle turbines, reciprocating engines and, potentially, with fuel cells that convert fuel energy to electricity more efficiently than conventional steam boilers.

Some disadvantages of this technology are during gasification, tars, heavy metals, halogens and alkaline compounds are released within the product gas and can cause environmental and operational problems. Tars are high molecular weight organic gases that ruin reforming catalysts, sulfur removal systems, and ceramic filters and increase the occurrence of slagging in boilers and on other metal and refractory surfaces. Alkalis can increase agglomeration in fluidized beds that are used in some gasification systems and also can ruin gas turbines during combustion. Heavy metals are toxic and accumulate if released into the environment. Halogens are corrosive and are a cause of acid rain if emitted to the environment. The key to achieving cost- efficient, clean energy recovery from municipal solid waste gasification will be overcoming problems associated with the release and formation of these contaminants.

As gasification technologies continue to advance, this may be an option for municipal waste management for the Region, County or individual municipalities to explore. While gasification of a mixed MSW waste stream may not be advantageous to the Counties at this time, gasification of other feedstocks, such as agricultural and industrial wastes and sewage sludge, may be worth exploring during the ten-year planning period in partnership with local farmers, wastewater treatment plants and commercial businesses.



Composting

Composting is an aerobic method of decomposing organic solid waste, such as leaves, grass, and food scraps into a fertilizer material. Composting requires carbon, nitrogen, oxygen and water. The feedstock for composting is most often placed in piles, also called windrows. These windrows are then turned, either mechanically or by hand depending on the size, which provides a sufficient supply of oxygen and

moisture. As the windrows are turned, the feedstock breaks down into the compost or fertilizer material.

Composting has been around since the early Roman Empire and is a successful process. Composting at a municipal or county level can be highly beneficial to communities with large population densities because often large population densities equals smaller footprints for residential homes, reducing or limiting a resident's ability to do backyard composting. One of the most important things to consider when evaluating a municipal or county operated compost facility is location. There are offset requirements in the Commonwealth that will restrict the location of a compost facility and there may be similar restrictions at a municipal level as well. Additionally, compost facilities require space to process the incoming feedstock and properly turn the windrows.

Once a composting facility is established, collection of the material may also be evaluated. Communities with access to a compost facility will often provide residents with optional curbside collection of leaves, grass and yard debris (with size restrictions). Residents are often encouraged to drop this material off at the compost facility as well, especially when bringing larger material.



Although curbside collection of yard and leaf waste has been largely successful across the Commonwealth, curbside collection of food waste is relatively new. A study conducted by BioCycle in 2021 found 272 curbside and drop-off collection programs for food waste, as compared to their 2017 study that found 148 curbside collection programs and 67 drop-off programs (total of 215 programs) for residential food waste collection across the country. These two studies show that access to food waste collection is on the rise.

The Counties, rather than individual communities administer most of the curbside food waste collection programs. Curbside programs are classified as either standard, opt-in, or mandatory. Standard means

that organics collection is offered curbside alongside trash and recycling, with no extra steps needed for residents to participate. Opt-in programs require residents to sign up to receive food waste collection service. Mandatory programs require all residents to participate. Programs are also characterized by their scale of service, pilot, partial, full-scale single family dwelling, or full-scale all. Pilot programs often serve a small community or portion of a community to test the collection program prior to implementation on a larger scale. Partial programs are utilized prior to full roll-out.

The materials most often collected in a curbside program include: fruit and vegetable scraps, meat, fish, and dairy. Most programs also accept paper bags and uncoated food-soiled paper. There are few programs currently accepting compostable plastic products.

A growing phenomenon is food waste drop-off locations. The types of drop-off locations varies from 24/7 access, to weekly availability in conjunction with farmers markets. Some are located at transfer stations or recycling centers, where residents can bring their food scraps along with their household recyclables. Like the curbside programs, the majority of the drop-off programs accept fruit and vegetable scraps, meat,



fish, and dairy. Additionally, the majority of drop-off programs accept uncoated food-soiled paper, paper bags, and compostable plastic bags. The majority of drop-off programs do not accept yard trimmings. Composting programs have been widely successful for both yard and leaf waste as well as food waste. As new legislation is introduced for the management and collection of food waste in States surrounding Pennsylvania, it is believed that Pennsylvania will also introduce regulations on the collection and management of food waste during the ten-year planning period. For that reason, it is recommended that the Region consider an evaluation of the collection and management of food waste during the ten-year planning period, if new legislation is introduced.

5.3 Waste and Recycling Program Goals and Recommendations

It is always a challenge, for any County or municipality, to increase recycling. In an effort to provide residential and commercial recycling opportunities in areas of Clarion and Forest County and increase the amount of material recycled, B&L, in coordination with the Recycling Coordinators for both Counties, developed a number of initiatives and programs that may potentially enhance recycling in the Region over the ten (10) year planning period. These recommendations were shared with the SWAC and members

were asked to provide input on the recommendations. The following recommendations were deemed the most feasible for the Region.

5.4 Waste and Recycling System Recommendations

The overarching goal of the 2023 Regional Municipal Solid Waste Plan Update for Clarion and Forest County is to offer an integrated program of waste management and recycling programs to the residents and businesses of the Region that:

- Is efficient
- Is affordable
- Protects the environment
- Maximizes the availability of practical recycling and waste reduction opportunities, and
- Is sustainable in the long term.

The following recommendations were considered with these goals in mind.

5.4.1 Waste and Recyclables Collection Recommendations

5.4.1.1 Recommendation C1 Contracted Waste/Recycling Collection – The availability of cost-effective waste and recyclables collection services is recommended. Most areas of the Region currently have contracted collection. Municipal bid collection services have been shown in other areas of Pennsylvania to be cost-effective and to provide an opportunity to include recycling, bulky waste pickup, and other services to be bundled with waste collection services in the bid package. Bidding often results in competitive pricing. While this is currently a local municipal decision, this Plan Update recommends that municipalities consider bidding for contract services as a means to expand services, provide services to all residents, and ensure competition for cost-effective services. It is recommended that municipalities with contracted collection and those interested in contracted collection include in their request for bids, options that require haulers to provide pricing for services such as curbside recyclables collection, curbside HHW collection, curbside e-waste collection, curbside food waste collection, pay-as-you-throw options, etc. It is also recommended as part of this Plan Update that all contracts for waste and/or recycling include a mandatory requirement for haulers to provide education to residents, quarterly, through flyers, electronic mail and website content, that describe recycling opportunities, materials accepted, waste minimization techniques, grasscycling, backyard composting, etc. This material shall be required to be approved by Clarion and Forest Counties Planning Departments prior to distribution. A template bid document for municipal bidding of services is provided in Appendix D.

5.4.1.2 Recommendation C2 Standardization of Recyclable Materials – It is a recommendation of this Plan Update that the Region consider the standardization of recyclable materials collected within the Region during the ten-year planning period. It is recommended to work with local waste haulers and material recovery facilities (MRFs) to collect the same recyclables materials curbside across the Region, as well as standardize the materials accepted at drop-off facilities. Once the standard list of materials is established, it is recommended that this list be distributed to all municipalities and required to be utilized when developing a contract for recyclables collection. This recommendation will allow the Region to develop educational material, i.e. TV and newspaper ads, that may be used in all municipalities, therefore saving time and money. It will also aid in educating residents on the materials that can be recycled based on current market conditions and over time result in a cleaner recyclables stream.

5.4.2 Waste and Recyclables Transportation

5.4.2.1 Recommendation T1 Transfer of Waste – The Plan Update supports the continued reliance largely on the private sector for waste hauling services, including the option of waste transfer to take the Region’s municipal waste to out-of-county disposal sites. The Plan Update recommends the Region enter contracts with the four (4) private transfer stations that responded to the SOI to provide waste transfer services and recordkeeping in accordance with the Plan Update.

5.4.2.2 Recommendation T2 Transfer of Recyclables – The private sector largely provides recyclables transfer services for materials that it either collects or that are dropped off to its system. Some municipalities also collect recyclables through drop-offs. The Plan Update recognizes the variety of public and private sector means used to collect and transport recyclables to processors, and to intermediate and end-markets. As the term of this Plan Update is ten years, the Counties recognize that the recycling infrastructure within the Region may change significantly by the end of that term. Clarion and Forest County, therefore, reserve the option to explore and implement a greater role in the recycling system if the circumstances make such a change to be in the best interest of their recycling program. Until that time, the Region will continue to rely on the currently utilized public and private sectors for the collection and transportation of recyclable materials.

5.4.3 Waste Disposal

5.4.3.1 Recommendation D1 Waste Disposal Capacity – The Plan Update calls for all municipal waste generated in the Region, including Special Handling Waste, to be disposed at duly-permitted disposal sites for these wastes by the state in which they are located that have entered contracts with the Region. To meet the minimum requirements of municipal waste capacity assurance, and for related

reasons explained in Chapters 5 and 6, this Plan Update recommends the Region enter contracts with at least the five (5) SOI respondents to assure disposal capacity over the ten (10) year planning period. Additional facilities may be considered for addition in to the Plan Update based on disposal capacity needs, current acceptance of Regional waste, and their proximity to the county, if the facility petitions the County.

5.4.4 Management and Sustainability of Programs

5.4.4.1 Recommendation MS1 Responsibilities of Clarion and Forest County – In order to implement the recommendations in this Chapter, it is important to ensure everyone in the Region has an understanding of the goals and initiatives of the Plan Update. In order to do this, it is recommended that the Region conduct meetings with as many Clarion and Forest County staff as possible, Clarion and Forest County Commissioners, municipal officials, etc. to go over the “goals” of the Plan Update, short term and long term. During this meeting, the Regional representatives can address questions from the staff and ensure all parties in attendance know where to go for information. This recommendation shall be the first thing implemented as part of this Plan Update.

5.4.4.2 Recommendation MS2 Support of Public/Private Partnerships – The Region may support public/private partnerships by encouraging municipalities to partner with private entities to provide services to their residents. The Counties may offer support to these municipalities by providing sample contract language and ongoing support through the bidding phase. Additionally, the Counties may provide free advertisement in various forms at County sponsored or attended events to those entities that have entered a public/private partnership with the Region. Additional ideas for increasing public/private partnerships in the Region are included in this section under various recommendations.

5.4.4.3 Recommendation MS3 Program Support and Funding Options – All of the SOI respondents indicated a willingness to further discuss ways to support the sustainability of the Region’s integrated waste and recycling programs in the future and develop a public/private partnership with the Region. This Plan Update recommends the Region initiate a public/private partnership with the SOI respondents, initially through an Agreement with the Region, and subsequently by supporting those facilities that in turn support the Region. This may be conducted through free advertisement, posting information to social media platforms, taking part in events, and much more.

It is also recommended that the Region continue to work with municipalities, haulers and other stakeholders to help facilitate new sponsorships of current or new recycling and waste diversion programs and educational efforts. As an example, a partnership was created between ClearStream

Recycling Systems and Ad Bin Sponsorships that created an interchangeable advertising display that can be affixed to a ClearStream Recycling System container. These containers and advertising may be utilized by the Region at various events or purchased by the Region and loaned out to event organizers. Private entities may be willing to sponsor some of these containers for the Region, in exchange for advertising their information on the bins.

Local groups and organizations may also offer support through volunteering at drop-off locations, helping with waste sorts, spreading education to residents and businesses regarding recycling, etc.

One option available to municipalities and private businesses to fund the collection, processing, and communication projects that are intended to increase recycling access and rates is through Closed Loop Partners. Closed Loop Partners has several funding mechanisms. The Project-Based Financing offers financing for recycling and circular economy infrastructure across North America. This is accomplished through the Closed Loop Infrastructure Fund, the Closed Loop Beverage Fund and the Closed Loop Circular Plastics Fund. There is also the Venture Capital mechanism, which deploys early stage capital into companies developing breakthrough solutions for the circular economy. This is accomplished through the Closed Loop Ventures Group. Lastly, the Private Equity mechanism acquires companies along the value chain to build circular supply chains via the Closed Loop Leadership Fund. More information on these programs and current investments can be found on their website at: <https://www.closedlooppartners.com>

An additional option for funding recycling programs in the Region is to include a recycling fee in contracts used by municipalities to solicit waste and recycling collection. If a hauler is unable to provide curbside recycling to residents of the municipality, a municipality may require, as part of the contract, that a hauler provide a fee (to be determined by the municipality) that may be used to provide recycling programs to the residents of that municipality, i.e. drop-offs.

Another funding source for municipalities is The Recycling Partnership. They have various grant programs that often assist municipalities in implementing curbside recycling programs or converting a current bin/bag program to a cart based program. These grant programs may also be used to support food waste collection curbside.

The **Section 901** grants are available to all Pennsylvania counties for the cost of preparing municipal waste management plans; the cost of carrying out related studies, surveys, investigations, inquiries, research and analyses; Environmental mediation; feasibility studies and project development for municipal waste processing, disposal or composting facilities, except for facilities for the combustion of municipal waste that are not proposed to be operated for the recovery of energy; educational

programs or pollution prevention, other technical assistance to small business for pollution prevention and educational programs on household hazardous waste. Educational programs may include, but are not limited to, development of a Facebook or other social media platform, updating these platforms, production and distribution of flyers, etc. A county may not request nor receive more than \$75,000 per calendar year for planning nor exceed more than 80% of approved project costs. A county may request up to \$75,000 every two years for costs associated with HHW educational programs. HHW educational costs incurred on January 1, 2016 or beyond will be eligible for grant funding. Applications may be submitted at any time during the year. Prior to applying, the applicant must meet with the appropriate DEP Regional Planning and Recycling Coordinator to discuss the proposed project and the grant requirements. The applicant must be the governing body of the county.

The Act 101, **Section 902**, Recycling Program Development and Implementation Grants reimburse counties and municipalities 90 percent of eligible recycling program development and implementation expenses. Pre-application conferences with Regional Recycling Program Contacts are required. Eligible Applicants are both municipalities and Counties in Pennsylvania.

The Department of Environmental Protection (DEP) awards **Section 903** grant funds to eligible counties of Pennsylvania for 50 percent reimbursement of the approved cost of their county recycling coordinator's salary and expenses. The grants are authorized under Section 903 of the Municipal Waste Planning, Recycling and Waste Reduction Act (Act 101 of 1988, P.L. 556).

The **Section 904** Municipal Recycling Program Grants were developed to assist municipalities and counties for developing and implementing recycling programs. Recycling is mandated in municipalities with more than 10,000 residents and those with populations between 5,000 and 10,000 that have population densities greater than 300 people per square mile. Through the grant program, municipalities and counties in Pennsylvania are eligible for up to 90 percent funding of approved recycling program costs. Municipalities that are designated financially distressed under the Financial Distressed Communities Act are eligible to receive funding for an additional 10 percent of approved costs.

Both municipalities and Counties in Pennsylvania are eligible applicants for this grant program.

Additionally, there are two EPA grant initiatives for recycling infrastructure and recycling education. These programs will supply funding for recycling infrastructure and education programs over the next five years, starting in 2023 and continuing through 2027.

It is recommended that the Region consider these grant programs over the ten-year planning period in conjunction with the recommendations in Chapter 5.

5.4.4.4 Recommendation MS4 Municipal Ordinances – Enacting an ordinance at the municipal level ensures that residents, commercial entities, waste and recycling haulers, disposal facilities and processors work together to meet the goals of the municipality, County, and Region. This ordinance becomes the governing document for how waste and recyclables are handled in the municipality. Though these ordinances can be as comprehensive as the municipality deems necessary, it is a recommendation of this Plan that any existing or new municipal ordinances consider inclusion of the following:

- Language on the residential and commercial management of waste and recyclables. This shall:
 - Prohibit the illegal disposal of waste and recycling material.
 - Define what illegal disposal means, i.e. disposal of waste material at a location that has not been deemed appropriate for this use or disposal of waste material at a location other than your residence.
 - Specify that burning or backyard burying of waste and/or recyclable materials is also considered illegal disposal.
 - Require that commercial entities in the municipality recycle. You may specify in the ordinance what materials must be recycled, such as corrugated cardboard and office paper or all Act 101 materials.
- Language that requires waste and recycling haulers to deliver materials to those facilities outlined in the most recent Regional Municipal SWMP or specify a facility as part of the ordinance (as long as that facility is part of the Regional SWMP).
 - Require the haulers to provide education to residents on a semi-annual basis and/or when collection practices change.
 - Require the types of education, i.e. door hangers and website content, or a newsletter, magnet, and website content, etc.
- Language that requires disposal and processing facilities to be included in the Regional Municipal SWMP if accepting material from within Clarion and/or Forest County.
 - Require these entities to report tonnage totals to the municipality on a quarterly basis.
- *Voluntary Residential Curbside Recycling Collection* –Where a municipality does not require curbside recycling, this Plan Update recommends that “optional curbside recycling” be required via municipal adoption of an ordinance that requires any subscription hauler operating within the municipality to provide curbside recycling services to a customer that requests it. This may be at an additional cost to the customer or the municipality may require

that fully integrated service be the standard service offered by the hauler. A template ordinance to implement this recommendation is included in Appendix D.

5.4.4.5 Recommendation MS5 County Ordinances – A county ordinance for waste and recycling is very similar to the municipal ordinances described above. The largest difference is the county ordinance, once approved and recorded, is applicable for all municipalities in the county, eliminating the need for individual municipal waste and recycling ordinances. If a county ordinance for waste and recycling were to be explored over the ten-year planning period, the county shall consider including language on:

- Illegal dumping
- Open burning of waste and recyclables
- Restrictions on where waste and/or recyclable material can be taken when generated within the Region (i.e. to a designated disposal facility listed in the Plan)
- Education requirements for waste and recycling haulers operating in the Region (may also be done through a registration program)
- Reporting requirements for haulers, disposal and processing facilities accepting Regional waste
- Enforcement actions for offenders of the ordinance
- A fine structure to coincide with the enforcement section

5.4.5 Recyclables Drop-Offs

5.4.5.1 Recommendation DO1 Drop-Off Recycling – This Plan Update recommends that the Region continues to work with the private and public sector to maintain the current recyclables drop-offs in the Region. Additionally, it is recommended that the Region provides information to any municipality interested in establishing a new drop-off location. This may include information on recycling infrastructure grant opportunities and/or encouraging municipal partnerships to establish or expand recyclables drop-off facilities that are open to residents of multiple municipalities.

5.4.6 Yard and Food Waste/ Organics Composting

5.4.6.1 Recommendation OC1 Food Waste Sharing Program for Clarion and Forest County Residents in Need – Many communities across the Commonwealth of Pennsylvania are becoming part of a bigger movement to reduce food waste and feed the hungry. These programs connect businesses, institutions, and residents that have food waste with residents in need. Oftentimes these programs work through an app program on a smart phone or device. Both the entities that have excess food and the residents in need join the app program. When an entity has excess food, they simply post what they have, how much, and where they are located and residents who have signed up for notifications through the app program will be notified that the food is available. This has proven quite successful

for entities that host catered events and don't want to waste the leftover food. This program can also incorporate supermarkets, bakeries, delis, restaurants, businesses and corporations, hotels, colleges, hospitals, and so much more.

It is a recommendation of this Plan Update that the Region considers an evaluation of this type of food waste sharing program and potentially establish a partnership with local entities that have excess food waste to provide this food to residents in need. This can be accomplished by using an existing app program, such as OLIO, and a two-phase roll-out program. The first phase includes outreach to entities in the Region to join the program and educating them on the type of food that can be donated, how to use the program, benefits, etc., while the second phase includes reaching out to residents and students to join the program and educating them on how to use the program.

5.4.7 Increasing Recycling

5.4.7.1 Recommendation R1 Corrugated Cardboard and Paper Recycling – It is recommended that corrugated cardboard and paper recycling be maximized, and that all reasonable efforts be employed to avoid the disposal of this valuable resource. Based on the waste composition study, there is an estimated 5,186 tons of newspaper, corrugated cardboard, and office paper in the Regional waste stream. Increased recycling of corrugated cardboard and paper may be done by encouraging businesses in the Region to establish cardboard and office paper recycling programs. It is a suggestion of this Plan that these programs collect cardboard and office paper source separated to ensure the highest quality cardboard and office paper product for end markets. Additionally, it is recommended that drop-off programs in the Region that do not currently collect cardboard, consider adding this material to their program during the ten-year planning period. It may also be beneficial to establish drop-off programs for just cardboard and/or office paper. For municipalities with contracted collection, this drop-off location for cardboard and/or office paper may be provided by the waste hauler as part of the contract with the municipality.



5.4.7.2 Recommendation R2 Electronics Recycling – Further information on the Covered Device Recycling Act (Act 108 of 2010) and electronics recycling may be found on PADEP's website. It is a recommendation of this Plan Update that the Region continues to work with local municipalities to offer guidance and support, when available, for safe electronics handling and recycling.

This Plan Update encourages municipalities in the Region that currently contract for municipal waste collection and for those municipalities that consider this option in the future, to include an option in the bid document, when requesting bids for a new contract/term, for curbside collection of electronics. This will require the waste hauler to bid on this portion of the waste collection contract. Additionally, a separate bid may be developed that separates e-waste curbside collection from curbside collection of MSW and recyclables, thus allowing entities that only collect e-waste to bid on this portion of the requested service. Depending on the cost to residents for this service, a municipality may decide whether or not to include this option in their waste and/or recycling collection contract.

Additionally, it is recommended that municipalities with contracted service include an option in their bid documents that requires the bid respondent to establish a residential drop-off location for electronic material. A municipality may offer a drop-off location as part of the bid documents (i.e. municipal building, drop-off center, etc.) thus only requiring the respondent to propose a price for permitting the location, outfitting the location in accordance with State and Federal regulations, and operating and maintaining the location over the course of the contract. This option may result in longer contract terms, i.e. 5-10 year contracts instead of 3 year contracts. Requiring the respondents to provide a drop-off location for e-waste material will allow residents from apartment, condo, and townhome complexes, as well as residents from mobile home parks (if not included in the curbside service route), and possibly collegiate students and faculty in some cases to recycle electronic material more conveniently. This requirement may be a collaboration opportunity between existing haulers and existing e-waste recyclers in the Region.

5.4.7.3 Recommendation R3 Household Hazardous Waste Collections

– The Region will continue to work with municipalities and private industry to offer HHW collection days during the calendar year and to add HHW collection at drop-off sites and/or events, where feasible. There are elements to be considered when adding HHW collection to a drop-off center. Due to the nature of the material, it is recommended that HHW only be accepted at a monitored drop-off center, by an attendant to ensure non-compatible materials are stored appropriately. Additionally, it is recommended that HHW collection occur at a drop-off center within a building or, at minimum, under roof cover. Again, due to the nature of this material, stormwater shall not come in contact with HHW material. It is a recommendation of this Plan Update that the Region provides guidance to municipalities and the private sector on HHW collection at drop-off centers, if these entities are interested in adding this material.



The Region will continue to educate residents on available outlets for HHW items through their website, flyers, public announcements, etc., as funding for education is available. It is a recommendation of this Plan Update for the Region to work with the private sector, both haulers and disposal facilities, to provide such education for residents of Clarion and Forest County.

It is also a recommendation of this Plan Update to consider an investigation for curbside HHW collection options for residents of the Region over the ten-year planning period. For the municipalities in the Region that currently contract for municipal waste collection and for those municipalities that consider this option in the future, it is recommended to include an option in the bid document, when requesting bids for a new contract/term, for curbside collection of HHW. This will require the waste hauler to bid on this portion of the waste collection contract. Depending on the cost to residents for this service, a municipality may decide whether or not to include this option in their waste collection contract. Municipalities are encouraged to consider partnering with neighboring municipalities to offer this service to more residents, while potentially reducing the costs to residents due to the larger demographic service area.

5.4.7.4 Recommendation R4 Tire Recycling – Residents of Clarion and Forest County are encouraged to contact one of several local tire dealers that will accept tires for a fee or recycling old tires when purchasing new tires. Forest County residents may dispose of tires at a municipal clean-up day. Residents are encouraged to reach out to their municipality to confirm the materials accepted at the clean-up day.

5.4.7.5 Recommendation R5 C&D Waste and Recycling – The Region currently relies on existing, largely private, infrastructure for managing C&D waste that involves a combination of recycling and disposal. Several private sector entities accept materials that can be recycled including drywall, concrete/masonry, and clean wood waste. The remainder is landfilled or used as clean fill by both private and public sector operators.

One option for the Region is to consider the implementation of a blighted property program over the ten-year planning period. As part of this program, demolition projects shall be required to recycle or reuse as much of the C&D material as possible. This material may be sold to local residents and builders for reuse or given away at no cost. There are organizations that deconstruct buildings versus demolishing them. They salvage components for reuse and recycling. While complete deconstruction is the preferred and most sustainable method for removing or renovating a structure, it is not always possible due to the type of building and/or its components. According to the Department of Housing and Urban Development, highly deconstructable buildings:

- Are wood-framed. Wood-framed buildings, especially those with heavy timbers and beams or with unique woods such as Douglas fir, American chestnut, and old growth southern yellow pine, have “stick-by-stick” construction that lends easily to the deconstruction process. These kinds of lumber also have highly versatile reuses.
- Contain specialty materials with high resale value. These include items such as hardwood flooring, multi-paned windows, architectural moldings, and unique doors or plumbing/electrical material fixtures.
- Have high-quality brick-laid construction with low-quality mortar. This construction allows for relatively easy break-up and cleaning.
- Are structurally sound. Buildings with less rotted and decayed materials maximize the potential for deconstruction.

For buildings that do not meet one or more of these criteria, partial deconstruction is an excellent option. In these cases, a combination of deconstruction and demolition can be used. EPA’s Deconstruction Rapid Assessment Tool assists in prioritizing structures for deconstruction and salvage, and allows managers to make critical decisions in allocating time and resources. More information may be found on EPA’s Sustainable Materials Management page.

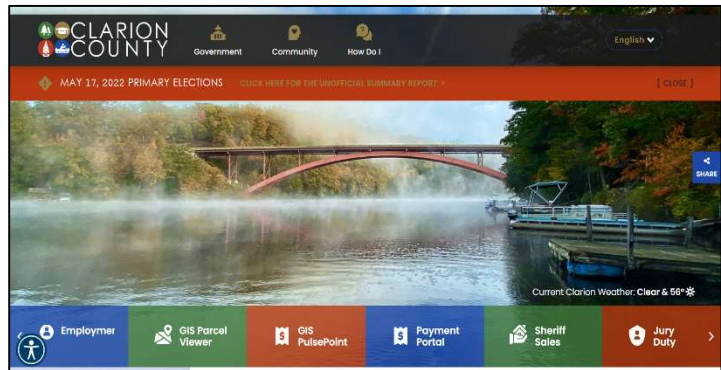
5.4.7.6 Recommendation R6 Education – This Plan Update recognizes that education of the public on proper waste management and recycling is crucial to the success of a growing, sustainable integrated waste and recycling programs in the Region. The continuation and expansion of such educational efforts by the public and private sectors are recommended in this Plan Update. Support from both municipal and private sector partners is crucial for a sustainable educational effort.

Some educational programs that may be considered for implementation/expansion during the planning period include:

- A mobile app to notify residents of waste and/or recycling related programs and events. The notifications to residents may include HHW and e-waste collection information, curbside yard waste collection information, etc.
- Newsletter distribution (electronic and/or hard copy). Again, there are companies that offer their services to develop a newsletter to be distributed to selected recipients. This newsletter may be targeted at specific markets, i.e. commercial businesses, apartment complexes, single family residents, etc. The newsletters may be structured with information from



recyclables collected, service providers available, to source reduction strategies, and virtually everything in between. Oftentimes, these newsletters may be partially or completely funded through the sale of advertising in the newsletter. Additionally, many marketing companies will not only develop the newsletter, but obtain the advertising as well. This makes the newsletters virtually free for a municipality or county to generate, besides the potential cost of distribution. It is



recommended that this type of service be managed at the municipal level as recipient information is more manageable and it is recommended that private participation is solicited in the development of a newsletter, whether it is verification of information, contribution of content, or funding from the sale of advertising space within the newsletter.

- Social media presence. The Counties currently utilize their websites to share information with their residents and businesses. It is recommended that Clarion and Forest County consider adding/expanding their Facebook, Twitter, and Instagram over the ten-year planning period to reach a larger audience and help spread information on waste and recycling activities in the Region for minimal costs, as well as increase the presence of waste and recycling news on their current social media platforms. This may be as simple as including a list of locations in each County that accept hard to recycle items, such as tires, scrap metal, HHW, e-waste, etc.



- Sector specific education. Education shall be focused on reaching residents, students and businesses in the Region. How these entities are best reached and the message that is conveyed to them is different.

Residents are often best reached with repetitive information that is short and doesn't get directly thrown in the trash (or recycling). This may include things like magnets for the refrigerator with a visual guide for recycling, monthly postcards that focus on one recyclable and one unacceptable item (as to not overwhelm the residents), utilization of municipal and/or county websites to promote the same message as the postcards, and utilization of municipal newsletters to also promote this educational campaign. Additionally, neighborhoods may designate recycling ambassadors that disseminate information to fellow residents, create specific education programs for their communities, develop social media campaigns, etc.

Students are typically transient in nature, recycling at school, at home, and possibly on the go. Since the programs may vary, developing education at the location of recycling is more beneficial. This may include stickers on the recycling receptacles that show pictures of items to be recycled, as well as an evaluation to ensure there are enough recycling receptacles on the school campus. Additionally, schools may benefit from developing recycling ambassadors that encourage fellow students to recycle. These ambassadors may create specific education programs that encourage student recycling, such as competitions, social media campaigns, presence at sporting and activity events, etc.

Commercial businesses often benefit from having a committee and/or leader that spearheads the education of others. Prior to developing educational material for the employees, it is beneficial for this committee to take an audit of the current waste stream and/or recycling stream. What does the business produce the most of, i.e. office paper, plastic bottles, etc. Education may then be tailored to the business and the materials most utilized/expended by the employees. Education may include signage in the office, emails, and newsletters. Additionally, businesses may benefit from creating incentives for employees to participate in recycling. Due to the nature of businesses, it is important that these programs are reassessed frequently, as employee participation can fade over time and may be impacted by frequent employee turnover.

- Generational education. Most advertising must be tailored to four distinct generations: Baby boomers, Gen X, Millennials and Gen Z. This is really the first time in history that different generations have to be marketed to, so distinctly. Each generation has its own distinct patterns of behavior and preferences for engagement. Baby boomers and Gen X seem to still respond well to what is considered typical marketing strategies. Reaching these generations through newspapers, television and radio will most likely work well. Though the number of people reading newspapers overall has fallen drastically over the past several years, media, such as TV and radio are still available for advertising. It is recommended to limit the amount of newspaper advertising for general waste and recycling information and instead focus on advertising events such as HHW and/or e-waste collection events, spring/fall cleanup days, etc. Utilize TV and radio to advertise these events as well and possibly utilize these two media streams to educate residents on waste and recycling in the Region. This may include a running radio advertisement encouraging residents to visit Clarion and Forest County's websites to

learn more about recycling, or possibly a monthly or quarterly spot on the local news discussing waste and recycling initiatives in the Region.

Millennials rely heavily on an online presence to find information when researching a topic. If a millennial is in need of information on recycling, they are more likely to go to the internet first. They are also likely to seek the advice of other millennials, so working towards having a steady number of millennials that retweet or share waste and recycling information posted by the Region may be a goal of the Plan Update. Millennials have an approximately eight second attention span, so keep the information short and precise to capture their attention. Often this can be accomplished with a short message or even video.

Lastly, Gen Z are digital natives, raised on tablets, smartphones, and social media. This generation responds well to opt-in text alerts, YouTube short videos, and repetitive exposure to the same message. They are more likely to gather information from peers and relatives, so reaching not only this demographic but the older demographics is beneficial. Again, this demographic has a short attention span for information, so repetitive exposure to the same message is key to reaching them and allowing them to absorb information.



- **Bilingual Education.** Based on the population of the Region and the transient nature of the visitors to the Region, it may be beneficial to generate bilingual education. Oftentimes, education can be created in two languages, while utilizing one educational piece, thus saving the Region time and money. It is recommended for the Region to consider an evaluation of their existing educational material to determine if it can easily be converted to a bilingual message. Additionally, it is recommended that any education created over the planning period, be created in a minimum of two languages to reach the greatest population possible. It is also recommended that municipalities consider creating education in multiple languages for their residents, based on their anticipated resident needs. Lastly, it is a recommendation that any education required by private haulers and/or private facilities be provided to residents in a minimum of two languages as chosen by the Region. This requirement may be written in to new curbside collection contract, agreements with the County/Region, registration programs, event sponsorship agreements, etc.

5.4.7.7 Recommendation R7 Fairs, Festivals and Universities Waste and Recycling – Special events with over 200 anticipated participants are required to have recycling in mandated municipalities. It is a recommendation of this Plan that, if a municipality becomes mandated during the ten-year planning period, the Region establish a list of events that occur in that mandated municipality and consider setting up an event registration program. The registration program may require those wishing to hold

an event in a mandated community with an anticipated attendance of over 200 people to register the event with the respective County.

Special event coordinators may be required to submit a registration to the municipality prior to the event taking place (a copy of this registration may be sent to the county by the municipality). The registration can be rather simplistic, but it shall include at a minimum:

- Name of event
- Location of event
- Event coordinator information (name, telephone and email)
- Date of event
- Time of event
- Name of waste and recycling hauler
- Copy of contract with waste and recycling hauler (contract must include a requirement to submit waste and recycling tonnage receipts to event coordinator within 30 days of event)
- Site sketch of location of waste and recyclables receptacles at the event
- Disposal location for waste
- Processing facility for recyclables
- A check in a specified amount. This check may be used similarly to a security deposit by the municipality. It can be minimal, such as a \$50 flat fee, or it can be calculated based on estimated number of attendees. This amount may be retained by the municipality as a registration cost and not returned to the event coordinator, or used as financial assurance that the event site will be clean upon completion of the event, if not, the municipality may use this fee to clean up the event site, it may subsequently be returned to the event coordinator upon submission of waste and recycling receipts and inspection of the event space.

If a municipality enacts a registration program for special events, it is recommended that the municipality also update or enact an ordinance that lists enforcement for failure to register an event.

It is also a recommendation of this Plan Update that non-mandated municipalities consider a requirement for special events with over 200 anticipated participants to recycle. Additionally, it is recommended that both mandated and non-mandated municipalities encourage smaller special events taking place to also recycle.

5.4.8 Biosolids and Septage

5.4.8.1 Recommendation B&S1 Biosolids – The Region shall continue to rely on the current system for managing biosolids, which involves processing of wastewater at publicly-operated facilities and the handling of WWTP biosolids (i.e. sewage sludge) through landfilling, composting, or through otherwise recycling the materials back into a productive use (land application). The current system is anticipated to be sufficient to manage the biosolids generated from Regional sources over the next ten (10) years, although increases in tipping fees and reduction of available capacity may require the Region to investigate alternative management options.

5.4.8.2 Recommendation B&S2 Septage – The Region shall continue to rely on private haulers for the collection of septic tank pumpings (i.e. septage), for eventual disposal as treated biosolids as noted in Recommendation B&S1. As indicated with biosolids, the current system for septage management is anticipated to be adequate over the next ten (10) years, but increases in tipping fees and reduction of available capacity may require the Region to investigate alternative management options in the future.

5.4.9 Regulated Medical Waste and Home Health Waste

5.4.9.1 Recommendation MW1 Regulated Medical Waste – The Region shall continue to rely on the current system for managing regulated medical waste, which involves licensure of haulers through the State program and generators of this material often contracting with a private hauling company that transports this material to a permitted autoclave facility or disposal facility. The current system is sufficient to manage regulated medical waste generated from Regional sources over the next ten (10) years.

5.4.9.2 Recommendation MW2 Pharmaceutical Waste – The Region shall continue to rely on the current system for managing pharmaceutical waste. This involves drug take back drop-off boxes sponsored by the Pennsylvania Department of Drug and Alcohol, the Pennsylvania Commission on Crime and Delinquency and the Pennsylvania District Attorneys Association, as well as local companies that offer residents collection of this type of waste. The current system is sufficient to manage pharmaceutical waste generated from Regional residents over the next ten (10) years.

5.4.9.3 Recommendation MW3 Home Health Waste – The Region shall continue to rely on the current system for managing home health waste. This system encourages residents to ask a doctor if he or she will accept properly containerized sharps for safe disposal, contact a local hospital to see if it will accept sharps that have been properly secured in a container, check with a pharmacy to see if they sell specially designed containers for use by residents or mail-back containers, or check with curbside

and/or drop-off HHW events to see if they accept this type of material. If home health waste is prepared appropriately, it may be placed with the regular residential curbside waste collection. The current system is sufficient to manage home health waste generated from Regional residents over the next ten (10) years.

5.4.10 Ash and Asbestos

5.4.10.1 Recommendation AA1 Ash and Asbestos – The Region shall continue to rely on the current system for managing ash and asbestos, which requires generators of this material to properly dispose of this material at a permitted disposal facility. The current system is sufficient to manage ash and asbestos generated from Regional sources over the next ten (10) years.

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CHAPTER 6 - LOCATION OF FACILITIES AND PROGRAMS

This chapter identifies the location of each municipal waste processing, disposal and recycling facility.

6.1 Location of Disposal/Processing Facilities

There are no municipal waste disposal facilities currently located in the Region. The Region has decided for this SWMP it will allow municipal waste generated in the Region to be taken, at the generator's or hauler's option (as appropriate), to any permitted waste processing or disposal facility in the Commonwealth of Pennsylvania or Out-of-State facility listed in this SWMP as a Designated Disposal Facility with a signed Agreement.

With this approach, Act 101 still requires that the Region contract with at least one (1) processing/disposal site to secure the minimum municipal waste disposal capacity needs of the Region for the next 10-years. To meet this minimum contracting obligation under Act 101, the Counties advertised a Solicitation of Interest (SOI). The SOI also solicited municipal waste transfer stations that handle municipal waste to agree to minimum procedures to comply with the Plan Revision, including proper reporting, waste manifesting, and delivery of generated municipal waste to processing/disposal facilities approved in the Plan Revision and under contract with the Region.

A summary of the submittals received in response to the SOI, and the results of the submittal reviews by the SWACs, including the selection of multiple sites for waste transfer and contractual waste disposal capacity assurance, are documented in a memorandum in Appendix A.

The disposal facilities listed below have entered, or are expected to enter, into contract agreements with the Region to accept waste from the Counties for a period of five (5) years. The Counties retain the authority to extend these contracts for an additional five (5) years, for a total of ten years. The facilities selected through the SOI process will enter into a waste disposal capacity agreement fully aware of the amount of waste they have to accept and the ramifications this would have on the life of their facilities and their permit status. Disposal facilities are also aware that they may receive limited amounts of waste or no waste at all from the Region as explicitly stated in the agreement. Appendix A contains a copy of the draft disposal agreement from the SOI. Fully executed agreements will be in Appendix E when executed. Facilities identified below that do not finalize and execute contracts with the Counties will be removed from this list of Designated Disposal Facilities.

Designated Disposal Facilities

Greentree Landfill LLC

Advanced Disposal
635 Toby Road
Kersey, PA 15846
814-265-1744

Seneca Landfill

Vogel Holding Inc.
421 Hartman Road
Evans City, PA 1633
724-625-9000

Lake View Landfill

Waste Management
851 Robison Road East
Erie, PA 16509
814-824-7800

Northwest Sanitary Landfill

Waste Management
1436 West Sunbury Road
West Sunbury, PA 16061
724-637-3552

Mahoning Landfill

Waste Management
9954 Old State Rd.
Chardon OH, 44024
440-226-6321

Designated Transfer Stations

Clarion County Transfer Station

Waste Management
18380 Paint Blvd
Shippenville, PA 16254
814-226-4602

Warren County Transfer Station

Waste Management
32870 Route 6
Pittsfield, PA
800-338-8971

Tri-County Transfer Station

Vogel Holding, Inc.
159 TCI Park Dr
Grove City, PA 16127
724-748-4705
Mercer County

Valley Waste Service Inc. Transfer Station

Vogel Holding, Inc.
261 Wallace Run Road
Beaver Falls, PA 15010
724-843-9373

These facilities were chosen based on the following perceived needs over the 10-year planning period:

- The most geographically convenient
- The facilities most-utilized at the time the Plan Revision was drafted
- Multiple facilities are required to assure the disposal capacity for all types of “special handling” municipal wastes generated in the Region (such as asbestos, ash, and regulated medical waste)

It is noted that all five (5) disposal capacity assurance contractors chosen under this Plan Revision include an allowance for public and non-profit groups to dispose of limited quantities of dump cleanup materials at the disposal sites for free.

It is the intent of the Region to enter all new waste transfer and waste disposal agreements with selected facilities no later than May 31, 2023. At that time, copies of the executed transfer and disposal contracts will be placed in Appendix E of this Plan Revision.

6.2 Location of Drop-Off Recycling Centers

There are three (3) public and privately operated drop-off recycling centers available to residents of the Region.

6.3 Organics Management Facilities

There are no organics management facilities in the Region.

6.4 Material Recovery Facility (MRF) Locations

There are no material processing facilities (MRF) located in the Region, according to PADEP’s website.

6.5 Petition Information for Non-Designated Facilities

Haulers, disposal and transfer facilities, and/or municipalities have the option to petition to use another disposal and/or transfer facility not designated in the Plan Revision, if that facility is legally permitted and operating within the provisions of its permit, and can provide the Region with a 10-year capacity assurance for that portion of the waste stream expected to be generated in the Region. Any disposal facilities added to the Plan Revision after the original 2022 SOI submission deadline, must pay any and all costs to revise the Plan and its documents as needed to include the respective facility, unless other arrangements are made. The procedure to add a facility is as follows:

- First, an entity must petition the Clarion County Planning Department using the petition form to use a non-designated facility shown in Appendix A.

- After receiving the petition form, the Clarion County Planning Department will forward a packet for petitioning including submittal forms to the facility requesting addition to the Plan. (See Appendix A)
- Upon receipt of the completed packet for petitioning from the facility in question, the Clarion County and Forest County Planning Departments will review and respond to the information in the form within sixty (60) days.

The Planning Departments will notify, in writing, the County Commissioners for each County that a hauler, municipality, disposal, or transfer facility has petitioned the Planning Departments to utilize a facility not currently designated in the plan. The Planning Departments will convey, in writing, their recommended decision on the request to the County Commissioners for both Counties. The Commissioners will notify the Planning Departments of their acceptance or rejection of the Planning Department's recommendation. The Planning Departments will then notify the hauler, municipality, disposal, or transfer facility of the decision in writing. MSW may not be delivered to the facility until an agreement has been signed.

Beginning June 1, 2023, if a hauler or municipality uses a non-designated facility without first petitioning, they will be in violation of the Solid Waste Management Plan. Violations will be handled in accordance with the current County ordinances. As a result of the violation, the hauler or municipality shall be required to obtain tonnage reports from the disposal and/or transfer facility and submit the reports to the Counties with weight slips. The Counties will provide a written letter requesting this information and any other additional information it deems necessary.

Appendix A contains a complete packet with instructions to complete the process of petitioning to use a facility not designated in the Plan Revision. Again, the process is set-up to allow the Counties to monitor where county generated municipal waste is being disposed to minimize risk of liability and to guarantee disposal capacity at the facility for Region generated municipal waste for at least 10-years.

CHAPTER 7 - IMPLEMENTING ENTITY IDENTIFICATION

Clarion and Forest County have chosen to work cooperatively with each other in the development of a municipal waste management plan and of a waste management system to implement the plan. Act 101 requires the designation of a county implementing entity to oversee this phase of the waste management program. The Clarion and Forest County Planning Departments are the implementing entities for the solid waste management plan, respectively. The Planning Departments are responsible for implementing parts of the SWMP that involve the processing and disposal of municipal waste and recyclables. More specifically, the Planning Department's oversee agreements executed (or to be executed) by the Region to secure adequate disposal capacity for municipal wastes that will be generated within the Region over the next ten years. The Planning Departments will also be responsible for exploring and implementing additional recycling programs and facilities as deemed necessary or as cost-effective and affordable opportunities arise in the future. The Counties recycling programs are administered by full-time Recycling/Solid Waste Coordinators, who are both members of the Planning Department's.

The County Commissioners will continue to be the contracting party in the major contracts such as waste disposal capacity. The Counties will continue to offer assistance to the existing and proposed municipal recycling programs. Likewise, the Counties will continue to offer technical assistance to the non-mandated municipalities that currently recycle on a voluntary basis or to those that may choose to establish a voluntary or mandatory recycling program in the future.

The Counties are authorized under Act 101 to take any and all actions and to exercise all such powers as are necessary to design, develop, finance, construct, own, operate and manage a Region-wide, assured long-term integrated municipal solid waste (MSW) management system that is environmentally safe, economical and uses proven technology. Such powers and actions include but are not limited to the power to promulgate rules, regulations, fees and penalties applicable to the collection, storage, transportation, processing, recycling and disposal of municipal waste generated, collected, stored, transported, recycled, processed or disposed of within the Region.

These specifically include the power to:

- a. Develop, adopt, revise and implement a municipal waste management plan for the Region.
- b. Maintain disposal contracts over the 10-year planning period.
- c. Approve or deny petitions to be added to the Plan Revision from disposal facilities.
- d. Approve or deny requests to utilize back-up facilities.
- e. Develop and implement an integrated municipal waste management system for the Region to ensure the proper collection, transportation, processing and disposal of all municipal waste generated within the Region.

- f. Adopt ordinances, resolutions, regulations and standards for the processing and disposal of MSW, as long as it is not less stringent or in violation or inconsistent with Act 97 or Act 101.
- g. Require that all MSW generated within its boundaries shall be properly collected so as to ensure it is processed and disposed at designated facilities contained in the Regional plan.
- h. Administer and enforce a registration program for haulers and vehicles transporting waste collected within the Region.
- i. Promulgate rules, regulations, fees and penalties applicable to the collection, storage, transportation, processing, recycling and disposal of municipal waste generated, collected, stored, transported, recycled, processed or disposed within the Region.
- j. Prepare reports to PADEP as required by Act 101.
- k. Apply for and receive grants under Chapter 9 of Act 101 to develop and implement the Plan.

Local governments also have implementing responsibilities, including, but not limited to:

- a. Implementation of mandates specified in Act 101 and the Plan.
- b. Inclusions in their bid specifications for collection services that stipulate materials designated by the municipality for inclusion in the municipal recycling program not be collected and disposed of with the municipal waste.
- c. Preparation of reports to the County as required by Act 101.
- d. Adoption of ordinances, resolutions, regulations and standards for the processing and disposal of MSW, as long as it is not less stringent or in violation or inconsistent with Act 97 or Act 101.
- e. Development and implementation of an integrated municipal waste management system for the municipality that conforms to the recommendations of the most recent Regional Solid Waste Management Plan Revision.

The types of activities that will be involved in implementing the Plan, and the entity that will carry out each activity, are listed in Table 7-1.

**Table 7-1
Institutional Structure of Plan Implementation**

Function	Implementing Entity
Financing	Planning Departments/Commissioners
Municipal Waste Planning	Planning Departments
Recycling Initiatives	Planning Departments
Budget	Planning Departments/Commissioners
Party to Contracts	County Commissioners
Rulemaking	County Commissioners
Designated Implementation Responsibility	County Planning Departments

The following time schedule is presented for the planning and implementation of the component parts of this Plan:

November 2022	Draft Non-Substantial Plan Revision is released, thirty (30) day municipal review period begins.
December 2022	Municipal comment period ends.
December 2022	Comment/Response document prepared, final plan modifications are made based on municipal input and PADEP comments.
February 2022	Final Plan Revision adoption by County Commissioners for both Counties.
March 2023	Adopted Plan is submitted to PADEP for final approval.
April 2023	Anticipated PADEP Plan approval.
Spring 2023	Plan recommendations are formally conveyed to municipalities.
April 2024	Plan Implementing Documents executed – one (1) year from PADEP approval date.
June 2023	Former Disposal Capacity Assurance Contracts with expire.
June 2023	New Disposal Capacity Assurance Contracts with commence.

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CHAPTER 8 - PUBLIC FUNCTION

8.1 Public Function

The Clarion and Forest County Commissioners are the contractual signatory to the waste disposal capacity assurance agreements with other entities that were solicited under this SWMP. The Clarion and Forest County Planning Departments will retain responsibility for implementation of disposal-related elements of the plan, including, but not necessarily limited to, execution and oversight of disposal capacity agreements. The Clarion and Forest County Planning Departments may also apply for grant funding to help finance future planning and implementation efforts to promote and implement elements of this SWMP.

It is the position of the Region that the most suitable and cost-effective method of disposal of the municipal waste generated throughout the Region is at multiple disposal facilities. In addition, it is the position, at this time, that the waste transfer facilities serving the Region meet the current waste transfer needs of the Region. The majority of the waste transfer facilities and the waste disposal facilities identified for contracts with the Region in this SWMP are currently owned and operated by the private sector. The Region and its municipalities reserve the right to consider a public option for waste processing, transfer and/or disposal in the future should the needs of the residents and the position of the Region change.

The Clarion and Forest Counties, and other municipalities within the Region, reserve the option to own or operate recyclables processing facilities, recyclables drop-off facilities, materials transfer facilities, and/or composting facilities in the future if it becomes in the best interest of the residents of the Region, or the individual municipalities to do so.

8.2 County Ownership

Pursuant to Act 101, public interest requires that waste collection, transport, storage, processing, disposal and recycling be a public function. Public function does not require County ownership or operation of equipment or facilities. Clarion and Forest Counties do not currently own or operate disposal facilities (landfills) or processing facilities (transfer stations).

Pursuant to Act 101, the public interest requires that waste collection, transport, storage, processing, disposal and recycling be a public function. Public function does not require County ownership or operation of equipment or facilities. Clarion and Forest Counties do not currently own or operate disposal facilities (landfills) or processing facilities (transfer stations) at this time. The Counties, and/or the Counties municipalities reserve the right to own a disposal and/or processing facility in the future if it meets the needs of the Region's residents. There are no municipalities in the Region that own and operate composting facilities. There are three (3) municipalities that sponsor a permanent recyclables drop-off

site in the Region. The Counties and its municipalities reserve the right to lease, own and/ or operate additional recycling, processing and/or disposal facilities in the future to meet the needs of the Region and its residents and businesses as they may arise.

The Region has determined, as part of this SWMP, that its obligation to provide for the processing and disposal of all municipal waste generated within the Region continues to be best served by reliance on long-term Disposal Contracts with privately or publicly owned processing and disposal facilities. This approach meets the goals of the Region in that it is:

- Region-wide
- Long-term
- Assured
- Integrated
- Protective of public health and safety
- Environmentally safe
- Cost-effective

Through the planning process, the Region has met its obligation to provide for long-term assured disposal capacity through a Waste Disposal Capacity SOI and subsequent Waste Disposal and Transfer Agreements.

By contracting with five (5) disposal facilities, the Region has assured and confirmed sufficient disposal capacity and established ceiling tipping fees that are committed to the Region through executed Agreements through 2033.

8.3 Revenues and Expenses

The development and implementation of the Regional SWMP as required by Act 101 is a complex and time consuming task that requires professional expertise in waste management, engineering, administration, law and finance. To fulfill its duties under Act 101, the Region elected to engage the professional services of consultants, engineers and solicitors to advise the Region with respect to Act 101 and prepare the SWMP.

While these activities are eligible for partial funding reimbursement from the PADEP under Act 101 grants, a portion of the cost of Plan development and a substantial portion of the cost of implementing the Plan must be borne by the Counties.

CHAPTER 9 - COPIES OF ORDINANCES, RESOLUTIONS, AND IMPLEMENTING DOCUMENTS

A Waste Disposal Capacity Solicitation of Interest (SOI) for municipal waste transfer and processing/disposal services was sent directly to fifteen (15) waste disposal facilities and seven (7) transfer stations, as well as advertised in The Clarion News, The Forest Press, and Waste Today magazine. Five (5) disposal facilities and four (4) transfer station facilities in all responded to the SOI. A sample copy of the SOI and supporting submittal forms are provided in Appendix A. The responses to the SOI are presented in Chapter 5.

Legal instruments for the control of municipal waste stream are a requirement of Act 101 of 1988 which makes the Counties responsible for the proper disposal of the municipal wastes generated within their boundaries. The Plan Revision incorporates multiple implementation documents. It also offers many forms of template documents that can be used by municipalities to implement Plan recommendations.

Incorporated within this Plan Revision are the following documents:

- Sample Municipal Waste Disposal Capacity Agreement (Appendix A)
- Sample Municipal Waste Transfer Station Agreement (Appendix A)
- Samples of Various Forms of Municipal Bid Documents for Waste and Recyclables Collection and Disposal Contracting (Appendix D)

The following items are to be executed or approved within one year of Plan approval:

- County Resolutions (Appendix E)
- Waste Disposal Capacity Agreements and Transfer Station Agreements (Appendix E)

In this Plan Revision, municipal waste collectors are permitted to deliver Regional waste to any one of the approved waste disposal facilities listed within this Plan Revision who have successfully entered into disposal capacity agreements with the Counties. Chapter 6 contains a list of transfer and disposal facilities that have contracted with, or intend to contract with, the Counties for the transfer or disposal of Regional municipal wastes. These contracts provide certain assurances and contain ceiling tipping fee pricing for various types of wastes throughout the 10-year planning period. Appendix A contains the ceiling tip fee pricing structures of the contracted disposal facilities (Table 3 – Ceiling Tipping Fees).

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CHAPTER 10 - ORDERLY EXTENSION

In the preparation of this Plan Revision, demographic information, in particular population projections, prepared by the Pennsylvania State Data Center were utilized for an orderly extension of data in such a manner as to be consistent with the needs of the Region. Additional background information required for the Plan Update was obtained from the Planning Departments of both Clarion and Forest Counties to provide for an orderly extension of data. This plan has also taken into consideration applicable planning, zoning, population estimates, engineering and economics. The requirements of Act 101 and Chapter 272 of the PADEP Regulations have been followed in this Plan Revision process, including the requirements for a Non-Substantial Plan Revision, which PADEP has determined applies to this Plan Revision.

Municipal waste generation is a function of a number of socio-economic factors, including population. Figure 3-1 shows the county population for Clarion and Forest Counties, based on the 2020 US Census Bureau information and population forecasts for the Counties from 2021 through 2040. These population forecasts were extracted from the Pennsylvania State Data Center, Center for Rural Pennsylvania projections.

Existing waste disposal facilities and transfer stations that responded to the Solicitation of Interest and were deemed acceptable are utilized and made part of this Plan Revision. The contractual arrangements resulting from the waste disposal capacity solicitation of interest for transfer and disposal services include facilities that currently handle the vast majority of municipal wastes generated by the Region.

Continued use of existing processors by the commercial, institutional, and industrial sectors is also encouraged. Over the years, these sectors have been the main source of materials for the processors.

As this Plan is implemented, continued effort will be focused on providing for orderly extension of the system including management of construction and demolition waste, waste-to-energy ash residue, asbestos, sewage sludge and septage and processed medical wastes. To that end, every 10-years, the Region will perform a comprehensive review of its plan and an analysis and description of the waste being generated in the Region to ensure that the system is performing as planned and waste is being recycled and disposed consistent with the plan and Act 101.

The Counties shall prepare and file revisions to this Plan as deemed necessary and in the manner provided for by Section 501(c) of Act 101. The Counties shall continue to implement the Regional municipal solid waste management system for the remaining years following adoption of this Plan. The Counties will monitor its capacity assurance if necessary and as required under Act 101. The implementing documents are distinct from the Plan and will remain in effect beyond any 10-year planning horizon.

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CHAPTER 11 - OTHER INFORMATION

11.1 Marcellus Shale

The Marcellus shale play is a geologic formation that is a source of natural gas located in deep (1-2 miles) shale deposits. It is being actively developed by scores of gas industries, thanks to drilling technology advances that make this gas development process technically feasible. These deep mine drilling operations generate drill cuttings and other residuals that currently require disposal at a proper landfill. The operations also require the handling of millions of gallons of chemically-treated fracturing, or “frac”, water at each drill site. The subsequent handling of drill residuals (and in some cases, wastewater from the operations) is typically classified as residual waste. These wastes may impact the available capacity of municipal waste landfills, should those residual wastes displace landfill capacity that is needed for municipal waste disposal.

According to PADEP, as of May 2022, there are 27 active and/or permitted Marcellus shale wells producing natural gas in Clarion and Forest County. This reiterates the need for the Region to secure long-term MSW disposal capacity as part of this planning process. MSW disposal capacity assurance contracts will assure adequate capacity to meet the needs over the 10-year planning period.

11.2 Illegal Dumping

11.2.1 Background

Keep Pennsylvania Beautiful (formerly PA Cleanways) has been working for the better part of the last two decades to survey, investigate and reduce illegal dumping throughout the State of Pennsylvania. In 2014, after surveying all of the Counties in Pennsylvania, KPB put together a report titled *Analysis of Illegal Dumping in Pennsylvania*. This report states to minimize, if not halt, illegal dumping, requires an intricate strategy orchestrated by a variety of stakeholders. The recommended framework for doing so, is summarized below.

11.2.2 Common Elements of Illegal Dumping

According to Keep Pennsylvania Beautiful and the 2014 Report, there are four categories of illegal dumping:

- Inactive legacy sites;
- Active commercial waste dumping;
- Active dumping of household waste; and
- Theft of service

KPB found that conditions and circumstances foster illegal dumping rather than specific personality profiles and that illegal dumping occurs most frequently in areas where the risk of detection and

penalties are low. Economic conditions and business opportunities lure individuals to dump illegally and often a lack of acceptable disposal or recycling outlets tempts people to dump illegally. Items frequently found in illegal dump sites include:

- Bulky items like furniture;
- Appliances;
- Mattresses;
- Construction and demolition waste; and
- Tires

11.2.3 Access to Services

Approximately 85% of Pennsylvania's residents claim to have curbside collection for waste, but where curbside is not available, a majority of people would be willing to deliver waste materials to a convenient outlet and pay for the service, if the outlet was made available. The cost per home is lower, where there is a universal waste and recycling collection program in a community, than where residents attempt to contract for these services on an individual basis. There is also less illegal dumping in areas where there is convenient universal access to waste and recycling collection.

11.2.4 Enforcement and Penalties

Cleaning up illegal dump sites in and of itself does not stop illegal dumping. Tangible proof, beyond a reasonable doubt, is necessary for prosecutors to successfully convict an alleged illegal dumper and the responsibility for enforcement and actions taken are inconsistent throughout Pennsylvania. Disposal bans and restricted access to disposal facilities as a form of enforcement, creates illegal dumping when there are no alternative measures available. The KPB report found that there is a lack of resources at the local level to provide for adequate enforcement and that the current penalties for illegal dumping are a poor deterrent because they are disproportionate to the actual cost of legal disposal and to remediate the site.

11.2.5 Cost

Investigating illegal dumping crimes is time consuming and labor intensive for state and local governments. KPB reports that each illegal dump site costs \$600 per ton for an average total of \$3,000 to remediate. When individuals place household waste in the receptacles paid for by businesses and individuals, as well as at the drop-off recycling sites of local governments, they are stealing service, and can cause process to increase to handle this extra volume of waste. To cover the fixed cost of services, honest residents pay more per home for waste and recycling collection to subsidize the loss of revenue from those who do not pay and dispose of their waste illegally or in undesirable manners.

11.2.6 Current Illegal Dumping Awareness

The KBP report revealed that the public has a poor understanding of what constitutes illegal dumping and that elected officials are often unsure of the scenarios and options available to ensure there is cost effective universal access to services in their communities. Lastly, the report noted that law enforcement and judicial officials may not always be aware of the full impact and cost to the community caused by illegal dumping.

11.2.7 Residential Access to Services

KPB recommends, in order to reduce illegal dumping, communities ensure that all residents have universal access to waste and recycling collection. The report also recommends shifting county municipal waste planning from disposal capacity to coordinate and demonstrate how local municipalities will plan for and attain universal access and to expand curbside collection to the greatest extent possible. The report recommends that communities allow for staffed convenient drop-off facilities in lieu of curbside and that they promote municipal contracts to control costs and universal services. KPB recommends that communities provide for collection of bulk items and appliances at curbside or at convenient facilities and institute a subsidy for waste and recycling collection for eligible low income households.

11.2.8 Deterrents to Commercial Dumping

KPB notes that the following are methods to deter commercial dumping in communities across Pennsylvania. It recommends instilling a requirement for proof of disposal for local building and demolition projects and prior to local occupancy permits being issued. The report recommends expanding waste transporter authorization to include small contractors, remodelers, and roofers and requiring waste tire transporters to submit logs. Lastly, the report recommends requiring manifests for loads of tires for transporters, processors and retailers.

11.2.9 Recommendations for Illegal Dumping Awareness

The KBP report recommends the implementation of a statewide multi-media education campaign on proper waste management and the establishment of an Environmental Law Training Program for Enforcement Officers and Justices. It also recommends the creation of a series of seminars for local officials on effective ordinances and collection contracts and that communities institute the use of crime scene tape at illegal dumping sites to signify it is a criminal activity. Lastly, the report also recommends the installation of barriers at illegal dumping “hot spots” to prevent entry and show it is monitored.

11.2.10 Enforcement

The KBP report provided the following recommendations for enforcement of illegal dumping. These enforcement recommendations included expansion of the use of surveillance cameras at illegal dumping sites throughout Pennsylvania, the creation of a Joint Code Enforcement Officer Program to support

local governments, the revocation of transporter licenses and authorizations and required forfeiture of equipment for certain violations, and the establishment of an Environmental Law Court Day to assign a Dedicated District Justice to expedite cases. The report also recommended the establishment of an Expert Witness Bureau to assist in the prosecution of suspected illegal dumping, the establishment of fines that significantly outweigh the avoided cost of disposal, requiring community service for some illegal dumping offenses, dedicating penalties for illegal dumping violations to a cleanup fund and finally, the amendment of the CDRA to require scrap dealers to report on receipt of certain components from covered devices, and improve and simplify other elements of implementation.

11.3 Funding for Clarion County Programs

As part of this Plan Revision, it is recognized that county support and funding for recycling and waste minimization programs is limited and may be limited over the 10-year planning period. As part of this SWMP, the SWAC discussed other funding opportunities for Clarion County to maintain and expand their recyclables collection program and waste minimization programs. Funding for Clarion County programs is recommended to come from partnerships with private industry, waste haulers, waste disposal facilities, municipalities and local businesses. It is a recommendation of this SWMP to encourage partnerships, wherever possible, for support of the recommended recycling and waste minimization programs in this SWMP. Funding recommendations are discussed further in Chapter 5.

11.4 Funding for Forest County Programs

As part of this Plan Revision, it is recognized that county support and funding for recycling and waste minimization programs is limited and may be limited over the 10-year planning period. As part of this SWMP, the SWAC discussed other funding opportunities for Forest County to maintain and expand their recyclables collection program and waste minimization programs. Funding for Forest County programs is recommended to come from partnerships with private industry, waste haulers, waste disposal facilities, municipalities and local businesses. It is a recommendation of this SWMP to encourage partnerships, wherever possible, for support of the recommended recycling and waste minimization programs in this SWMP. Funding recommendations are discussed further in Chapter 5.

11.5 Future Challenges of Waste Management

Research by PROP has confirmed that municipalities and counties that fail to adequately address solid waste management and recycling experience:

- A lack of education and enforcement to convey the importance of proper waste management practices
- Inconvenient, or a complete lack of, access to waste and recycling services
- Higher costs for waste and recycling services

This ultimately results in a significantly greater likelihood of:

- Illegal dumping

- Open burning
- Waste accumulation on private property
- Blighted properties

Specific initiatives of this Plan Revision hope to address better waste management, increased recycling, and ongoing education of residents and businesses, as presented in Chapter 5.

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CHAPTER 12 - NON-INTERFERENCE

The Municipal Waste Planning, Recycling & Waste Reduction Act of 1988, Act 101 instructs that the Regional plan must ensure that it will not affect the design, construction, operation, financing or contractual obligations of any municipal waste landfill or resource recovery facility located in the Region that meets certain criteria. This Plan will not affect any facility design, construction, operation, financing or any contractual obligations that may exist for any such facility.

This Plan does not substantially impair the use of the remaining permitted capacity, or the capacity that could be made available through reasonable expansion of existing facilities. The Counties will not interfere with, or attempt to interfere with, the efforts of existing facilities to find customers whose municipal waste does not comprise part of the Region's tonnage.

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CHAPTER 13 - PUBLIC PARTICIPATION

The Region has used a combination of means and methods to provide for public participation both in the preparation of and in the implementation of the 2023 SWMP. The Counties reactivated the Clarion and Forest County SWACs in the summer of 2021 at the start of the planning process. This reconstituted committee, representing a wide variety of public waste and recycling industry, and environmental groups and agencies in the Region, first met to discuss the SWMP on August 12, 2021, and has since met on January 26, 2022, and April 21, 2022 to provide feedback and input to the planning process. The SWAC has provided review and comment on draft plan materials, summary documents, and draft chapters of the SWMP as they were completed. Handouts and meeting notes from SWAC meetings are included in Appendix F.

The existing SWMP for the Region, ratified and adopted in 2010, and prepared through its own public participation process, was used as a basis for the 2023 SWMP. Changing conditions and updated information were evaluated and incorporated in the SWMP.

The 2023 Regional SWMP was released for a thirty (30) day comment period on December 2, 2022 to the SWAC members and the forty-two (42) constituent municipalities of Clarion and Forest County, as well as the PADEP.

The 2023 Regional SWMP was presented to the County Commissioners of both Clarion and Forest County on XXXXXXXXX, 2023 for review, comment and ratification.

The 2023 Regional SWMP was sent to the PADEP on XXXXXXXXX, 2023 for review, comment and approval.

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