

2019 MUNICIPAL SOLID WASTE MANAGEMENT PLAN

ALLEGHENY COUNTY, PENNSYLVANIA

September 2018



Allegheny County, Pennsylvania

2019 Municipal Solid Waste Management Plan

September 2018

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EXECUTIVE SUMMARY

Background

The Municipal Waste Management Plan for Allegheny County is being undertaken in response to the Pennsylvania Department of Environmental Protection's (PADEP) mandate that County Municipal Waste Management Plans must normally be updated every 10-years. The existing Municipal Waste Management Plan for Allegheny County was ratified and adopted by the County Executive in December 2008 and approved by PADEP in June 2009. The disposal capacity agreements that were executed between Allegheny County and multiple waste disposal facilities in accordance with the 2006 SWMP expire on December 31, 2018.

The major goals of this update were:

- Securing sufficient capacity for Allegheny County for the disposal of municipal waste generated from within its boundaries by residents, businesses and institutions of the County for at least a 10-year period.
- Showing how the County intends to continue to provide recycling opportunities for residents and businesses in an effort to move toward the 35% State recycling goal.
- Developing a Feasibility Study to evaluate the development of a centrally located, year-round, HHW and e-waste drop-off facility.

The Municipal Waste Management Plan Update for Allegheny County includes a term of 10-years, from 2019 through 2028. The plan combines waste reduction, recycling of materials and the transport of the remaining municipal waste to multiple disposal facilities contracted to accept Allegheny County's municipal waste.

It is with the aforementioned three primary (3) goals, along with the PADEP planning mandate, that this update of the Municipal Waste Management Plan for Allegheny County was conducted.

Benefits of the Plan

The Municipal Waste Management Plan Update will provide the following benefits to Allegheny County, its 130 constituent municipalities, its citizens and its 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

- Ninety-nine (99) out of the 130 municipalities currently have residential access to (both public and private) recyclables collection (both curbside and drop-off).
- Seventeen (17) municipalities operate yard waste composting facilities in Allegheny County.
- Twelve private entities operate yard waste composting facilities in Allegheny County.
- Thirty-four (34) municipalities with drop-off recycling centers sponsored by a combination of Allegheny County, various municipalities, and waste haulers to offer recycling to residents in rural areas and areas that don't otherwise have access to recycling;
- The availability of waste and recyclables transfer stations and disposal sites (landfills) to accept all municipal waste generated in Allegheny County, transported by waste haulers or individuals, to one (1) or more of the facilities designated as approved to accept Allegheny County's municipal waste;
- Waste reduction through backyard composting and recycling education efforts on reducing the generation of waste.
- HHW and e-waste recycling offered through a combination of Pennsylvania Resource Council/County sponsored drop-off events, ECS&R sponsored drop-off events, and curbside collection by local waste haulers.

Goals of the Plan

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

- Assure waste disposal capacity over the ten year planning period through long term contracts
- Assure the proper reporting of Allegheny County generated waste disposal through contracts
- Encourage contracted collection of waste and/or recyclables
- Encourage optional curbside recycling via municipal ordinance
- Consider the standardization of recyclable materials collected in the County as a joint effort with local material recovery facilities, haulers, processing facilities, municipalities, and the County
- Explore program support and funding options
- Maintain the current recyclables drop-off locations throughout the County
- Explore the feasibility of expanding the materials collected at the existing drop-off locations
- Maintain the existing yard waste composting sites located throughout the County
- Explore the opportunities to increase corrugated cardboard recycling in the County
- Encourage curbside collection of e-waste and HHW material through an optional bid item in the municipal contract/bid document

- Explore the development of a year-round permanent e-waste and HHW facility, dependent on funding opportunities
- Maintain support of HHW and e-waste collection events held in Allegheny County
- Encourage construction and demolition waste diversion and source reduction
- Maintain support of continuing education

Waste Disposal Capacity Assurance

As stated previously, Allegheny County is 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 10-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 Allegheny County:

Designated Disposal Facilities

Arden Landfill (WM)
Washington, PA
Washington County

Kelly Run Landfill (WM)
Elizabeth, PA
Allegheny County

Carbon Limestone Landfill (Republic)
Poland Township, Ohio
Mahoning County

Monroeville Landfill (WM)
Monroeville, PA
Allegheny County

Chestnut Valley Landfill (AD)
McClellandtown, PA
Fayette County

Northwest Landfill (WM)
West Sunbury, PA
Butler County
Seneca Landfill

Evergreen Landfill (WM)
Blairsville, PA
Indiana County

Mars, PA
Butler County

Greenridge Landfill (Republic)
Scottdale, PA
Westmoreland County
Imperial Landfill (Republic)
Imperial, PA
Allegheny County

South Hills Landfill (WM)
South Park, PA
Allegheny County

Valley Landfill (WM)
Irwin, PA
Westmoreland County

Joseph J. Brunner Landfill
Zelienople, PA
Beaver County

Westmoreland Waste (Tervita)
Belle Vernon, PA
Westmoreland County

The Municipal Waste Management Plan Summary for Allegheny County 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.

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 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 county 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 referenced as combustion ash).

- B -

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. The County’s curbside program handles many 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 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.

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.

County – Allegheny County, Pennsylvania

- D -

Department – The Allegheny County Health Department. The mission of the Department is to protect, promote, and preserve the health and well-being of all Allegheny County residents, particularly the most vulnerable.

Department of Conservation and Natural Resources (DCNR) – Established July 1, 1995, is 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.

- 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 included computers, televisions, VCRs, stereos, copiers, and fax machines.

Environmental Coordination Services & Recycling (ECS&R) – A dynamically diversified company providing environmental health and safety services to the industrial, academic and residential business sectors. ECS&R provides waste programs for household waste, universal wastes/e-waste, hazardous waste, residual waste, etc.

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

- F -

Facility – Land, structures 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, and 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.

Health Department – Allegheny County Health Department

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 may 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 -

Industrial Solid Waste – Means any liquid, gaseous, 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.

Institutional Establishment – An establishment engages 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 that 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 foregoing.

Municipal Solid Waste (MSW) – Garbage, refuse, industrial lunchroom or office waste and other material, including solid, liquid, semisolid, or contained gaseous material resulting from 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 -

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

Pennsylvania Department of Environmental Resources (PADER) – In operation until July 1, 1995, when the PADER was split into two new agencies, PADEP and

DCNR. Its functions included maintaining and preserving the state parks and forests, providing information on the state's natural resources, working with communities to benefit local recreation and natural areas, and protecting and preserving the land, air, water, and public health through enforcement of the state's environmental laws.

Pennsylvania Resource Council (PRC) - Pennsylvania's oldest grassroots environmental organization. They work to protect the Commonwealth's resources for future generations through environmental education, recycling and waste diversion programs, anti-litter campaigns and much more.

Permit – A permit issued by the Department 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 that contains medicinal drugs that are expired, unused, contaminated, damaged or no longer needed.

Plan Revision – A change that affects the contents, terms or conditions of a Department 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, to hold items, to act as barriers or as printable surfaces.

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 -

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 countywide and municipal recycling data.

Refuse – Synonymous with solid waste.

Regulated Medical and Chemotherapeutic Waste (RMW) – 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 (40CFR), 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.

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.

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 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.

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 that is used in an internal combustion engine as an engine lubricant, or as a product for lubricating motor vehicle transmissions, gears or axles that, 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 the Department 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 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.

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ACRONYM LIST

ACHD	Allegheny County Health Department
AD	Advanced Disposal
BTU	British Thermal Unit
B&L	Barton & Loguidice, DPC
CDRA	Covered Device Recycling Act
CFL	Compact Fluorescent Lamp
CMU	Carnegie Mellon University
COG	Council of Governments
CPU	Central Processing Unit
CRT	Cathode Ray Tube
CY	Cubic Yard
C&D	Construction and Demolition
DER	Department of Environmental Resources
ECS&R	Environmental Coordination Services & Recycling
EPA	Environmental Protection Agency
E-waste	Electronic Waste
GHG	Greenhouse Gas
GPD	Gallons Per Day
GVW	Gross Vehicle Weight
HDPE	High Density Polyethylene
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
PITT	The University of Pittsburgh
PP	Polypropylene
PRC	Pennsylvania Resources Council
PROP	Professional Recyclers of Pennsylvania
PS	Polystyrene
RFP	Request for Proposal
RMW	Regulated Medical and Chemotherapeutic Waste
SOI	Solicitation of Interest
SWAC	Solid Waste Advisory Committee
SWMP	Solid Waste Management Plan
TPY	Tons Per Year
UBC	Used Beverage Container
WARM	Waste Reduction Model
WM	Waste Management
WTE	Waste-to-Energy
WWTP	Wastewater Treatment Plant

INTRODUCTION

1.0 Introduction

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 SWMPs to the Pennsylvania DER for approval by January 1991. Among other requirements, the Plan must provide for assured disposal capacity for the processing and disposal of municipal waste generated within the county for at least ten years.

In conformance with its powers and duties under Act 101, at the direction of the Allegheny County Executive, the ACHD, a Department of the County, proceeded to fulfill its obligations under Act 101 to develop and implement a Municipal SWMP subsequent to municipal review and ratification.

The following timeline provides a summary of the prior Allegheny County SWMPs.

1946

- Plan prepared by Allegheny Conference on Community Development and Pennsylvania Economy League.
- Proposed six (6) collection districts.
- Recommended use of landfills and incinerators.
- Disposal Fee = \$2.00/ton.
- Use strip mines for disposal of ash.
- No recycling because of expense.

1963

- Prepared by Allegheny County because of a Pennsylvania Department of Health report, which stated that solid waste management in Allegheny County was one of the acute health hazards in the Commonwealth.
- Proposed seven (7) collection districts – one (1) for Pittsburgh and six (6) for the remainder of the County.
- Recommended use of:
 - Two (2) incinerators – rehabilitation of the Pittsburgh incinerator and construction of a new facility

- Two (2) transfer stations
- Three (3) landfills
- All facilities to be County owned and operated except for Pittsburgh incinerator.
- Plan voted down at a meeting of the boroughs in the County.

1970

- Prepared by Allegheny County as disposal price increased from \$20 to \$25/ton.
- Proposed ten (10) collection districts.
- Recommended use of:
 - Four (4) transfer stations to be County owned and operated
 - Seven (7) existing privately owned landfills – two (2) in one district.
- County to obtain land reserves for future landfills if private sector landfills closed.
- Transfer Stations:
 - Proposed North Hills Transfer Station built and began operation
 - Locations for other transfer stations investigated.
- Pittsburgh proposed to build a WTE incinerator.
- Negated need for two (2) of the transfer stations and further implementation activities halted.

1987

- Plan prepared by Allegheny County as disposal price reached \$30 - \$35/ton and permitted landfill space was diminishing.
- No definitive disposal districts proposed.
- Recommended use of existing landfills.
- County to obtain long-term assurances for disposal space.
- If sufficient long-term assurances not obtainable, County to acquire land reserves and open publicly owned landfill(s).
- Proposed development of a pilot recycling program.
- Proposed development of a pilot leaf-composting program.

1990

- Prepared by Allegheny County in response to requirements of Act 101 and as landfill prices continued to climb to \$35 - \$40/ton.
- No definitive collection districts proposed.
- Recommended continued use of privately owned landfills for disposal.

- County obtained assurances of capacity for 10-year planning period. No need for County to obtain land reserves.
- Pilot recycling program started with four (4) cooperating municipalities.
- County constructed and began operating leaf-composting area in North Park.
- Public education for elementary schools prepared and distributed to schools in County.
- County provided assistance to local governments, which were mandated to implement curbside collection programs for recyclables.

1993

- An additional landfill was added to the approved disposal facilities list included in the plan.
- Incorporated ACHD's amended regulation, Article VIII, "Solid Waste and Recycling Management" that all Municipal Waste generated in Allegheny County be disposed only in landfills included in the plan or any revision there to.

1994

- Updated basic information in the original Plan and extended landfill contracts through 2008.

2006

- Prepared by ACHD and Allegheny County in modification to the 1994 Plan, per Act 101 requirements to modify the SWMP every ten years.
- Used current and estimated population data to project the amount of waste and recyclables that will be generated over the term of the Plan.
- Reviewed disposal sites approved to accept municipal waste generated in Allegheny County.
- Extended assurances of disposal capacity to December 31, 2018 or ten years past the expiration date of current contracts.
- Looked at methods for enhancing recycling opportunities by expanding the types of materials collected at curbside or by drop-off, educating residents regarding the benefits of recycling and focus on increasing recycling in commercial, institutional and multi-family facilities.
- Explored alternative approaches to waste reduction and HHW disposal. The County sponsored a series of activities aimed at collecting and recycling a variety

of materials (i.e. electronics, phone books, used oil, Freon containing appliances, HHW, etc.).

- Allegheny County contracted with the PRC to complete a series of sustainability studies that focused on the recycling programs in several county facilities.

Given the expiration of the disposal agreements with the designated facilities on December 31, 2018 and its obligations under Act 101 to update the Plan on a regular basis, address the County's appropriate obligation under the Commonwealth's revised 35% recycling goal and to continue to provide for at least ten years of assured capacity, the County Health Department, in the fall of 2015, initiated steps toward the development of the current Plan Revision.

The purpose of the 2019 Plan Revision is to 1) provide for an additional ten years of disposal capacity to serve the needs of the County and its municipalities through an open, fair and competitive process, 2) address how the County will take steps to meet the statewide 35% recycling goal over time, 3) update relevant demographic data, waste generation and disposal trends and collection practices, 4) develop goals and recommendations to support recycling in Allegheny County while investigating alternative funding for these programs, and 5) develop a feasibility study to investigate the options available for the collection and recycling of HHW and e-waste throughout the County and the outlets available to help fund this type of program.

To provide assistance in this effort the Health Department applied for and was issued, in July 2016, 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 County to address the issue of improving the county recycling program, increasing the rate of recycling within the County and perform a feasibility study to investigate HHW and e-waste recycling and funding opportunities.

At the County Health Department's direction, the 2019 Plan Revision process was officially initiated via a letter from PADEP, dated November 20, 2015, where the Department agreed that the SWMP shall be non-substantial. A newly constituted SWAC was appointed in April 2016 and met for the first time in May 2016 to assist the County and its consultants and legal counsel in this effort.

This Plan Revision has been prepared so that the County can consolidate prior revisions in one comprehensive planning document that reflects the current Solid Waste Management System and the County's intended efforts in the next planning cycle to increase the opportunities for recycling within the County toward meeting the Commonwealth's 35% recycling goal and includes the feasibility study for the collection and recycling of HHW and e-waste material, as well as the consultant's recommendations from the feasibility study.

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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 MSW generated in Allegheny County 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:

- SWMP for Allegheny County (2006)
- PADEP Origin/County Waste Destination Reports for the period January 2010 through December 2016
- Allegheny County ReTRAC Reports for 2010 through 2016
- Allegheny County waste tonnage reports for Out-of-State Disposal Facilities (2011-2016)

1.2 Characteristics of Allegheny County

Allegheny County is located in western Pennsylvania and is known for the three (3) major rivers that flow through it, the Allegheny, the Monongahela and the Ohio. The Youghiogheny River flows into the Monongahela River at McKeesport. Water from these rivers eventually flows into the Gulf of Mexico via the Mississippi River. Although the County's industrial boom caused clearing of a substantial portion of their forests, significant woodland does remain for residents to enjoy. Most notable of the municipalities within Allegheny County is the City of Pittsburgh. Not only is it the County seat, it is home to nearly 306,000 residents. It is the second largest city in Pennsylvania, behind Philadelphia, and the 20th largest in the U.S. The County is best described as an urban community with a 2010 population of 1,223,348 according to the U.S. Bureau of the Census. Allegheny County is 745 square miles in area, with an estimated 2027 County population of 1,143,677. The County consists of one hundred and thirty (130) municipalities that include four (4) cities, eight-four (84) boroughs, and forty-two (42) townships. The majority of the population is concentrated in the City of Pittsburgh. Figure 1-1 shows Allegheny County and its municipalities.

Employment in the County is best known for being concentrated in the steel industry; hence, Pittsburgh's nickname of the "Steel City" for its more than 300 steel-related businesses, but with the decline of the steel industry in the U.S., the area has shifted to other industries, such as hospitals, universities, and industrial centers. Pittsburgh is ranked in the top ten (10) among U.S. cities hosting headquarters of Fortune 500

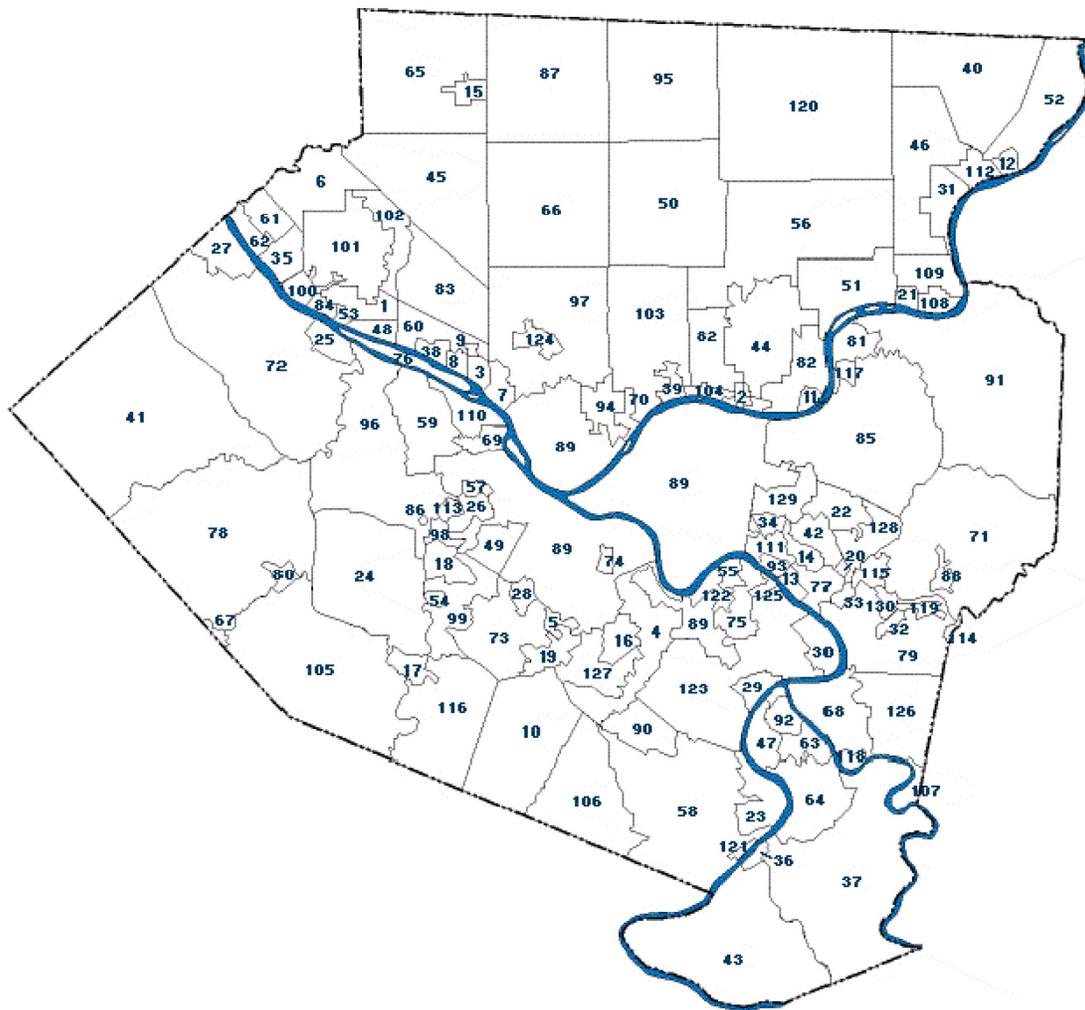
corporations; some of those corporations include U.S. Steel Corporation, PNC Financial Services Group, PPG Industries and H.J. Heinz Company.

Population factors are fundamental considerations in developing programs for the establishment or improvement of public services of any type. Existing and projected levels of population and business activity and the geographic concentrations of various human activities have a direct relationship on both the generation of solid waste and the strategies employed toward the collection and disposal of these materials.

Recent projections suggest the population of Allegheny County will decline over the 10-year planning period. Table 1-2 presents the projected population figures for Allegheny County through the year 2030.

The major transportation routes in the County are the Pennsylvania Turnpike (I-76), I-79, I-279, I-376, I-579 and US Routes 19 and 30. Allegheny County also has important state roads that include PA Routes 8, 28, 51, 65, 130, 380, and 837.

**Figure 1-1
Allegheny County Municipalities**



SOURCE: <http://apps.alleghenycounty.us/website/munimap.asp>
See municipality description in Table 1-1.

**Table 1-1
Allegheny County Municipalities**

ID	Municipality	ID	Municipality	ID	Municipality	ID	Municipality
1	Aleppo Township	34	Borough of Edgewood	67	Borough of McDonald	100	Borough of Sewickley
2	Borough of Aspinwall	35	Borough of Edgeworth	68	City of McKeesport	101	Borough of Sewickley Hts.
3	Borough of Avalon	36	Borough of Elizabeth	69	Borough of McKees Rocks	102	Borough of Sewickley Hills
4	Borough of Baldwin	37	Elizabeth Township	70	Borough of Millvale	103	Shaler Township
5	Baldwin Township	38	Borough of Emsworth	71	Municipality of Monroeville	104	Borough of Sharpsburg
6	Borough of Bell Acres	39	Borough of Etna	72	Moon Township	105	South Fayette Township
7	Borough of Bellevue	40	Fawn Township	73	Municipality of Mt. Lebanon	106	South Park Township
8	Borough of Ben Avon	41	Findlay Township	74	Borough of Mt. Oliver	107	South Versailles Township
9	Borough of Ben Avon Hts.	42	Borough of Forest Hills	75	Borough of Munhall	108	Borough of Springdale
10	Municipality of Bethel Park	43	Forward Township	76	Neville Township	109	Springdale Township
11	Borough of Blawnox	44	Borough of Fox Chapel	77	North Braddock Borough	110	Stowe Township
12	Borough of Brackenridge	45	Borough of Franklin Park	78	North Fayette Township	111	Borough of Swissvale
13	Borough of Braddock	46	Frazer Township	79	North Versailles Township	112	Borough of Tarentum
14	Borough of Braddock Hills	47	Borough of Glassport	80	Borough of Oakdale	113	Borough of Thornburg
15	Borough of Bradford Woods	48	Borough of Glenfield	81	Borough of Oakmont	114	Borough of Trafford
16	Borough of Brentwood	49	Borough of Green Tree	82	O'Hara Township	115	Borough of Turtle Creek
17	Borough of Bridgeville	50	Hampton Township	83	Ohio Township	116	Upper St. Clair Township
18	Borough of Carnegie	51	Harmar Township	84	Glen Osbourne Borough	117	Borough of Verona
19	Borough of Castle Shannon	52	Harrison Township	85	Municipality of Penn Hills	118	Borough of Versailles
20	Borough of Chalfant	53	Borough of Haysville	86	Pennsbury Village	119	Borough of Wall
21	Borough of Cheswick	54	Borough of Heidelberg	87	Pine Township	120	West Deer Township
22	Borough of Churchill	55	Borough of Homestead	88	Borough of Pitcairn	121	Borough of West Elizabeth
23	City of Clairton	56	Indiana Township	89	City of Pittsburgh	122	Borough of West Homestead
24	Collier Township	57	Borough of Ingram	90	Borough of Pleasant Hills	123	Borough of West Mifflin
25	Borough of Coraopolis	58	Borough of Jefferson Hills	91	Borough of Plum	124	Borough of West View
26	Borough of Crafton	59	Kennedy Township	92	Borough of Port Vue	125	Borough of Whitaker
27	Crescent Township	60	Kilbuck Township	93	Borough of Rankin	126	Borough of White Oak
28	Borough of Dormont	61	Leet Township	94	Reserve Township	127	Borough of Whitehall
29	Borough of Dravosburg	62	Borough of Leetsdale	95	Richland Township	128	Wilkins Township
30	City of Duquesne	63	Borough of Liberty	96	Robinson Township	129	Borough of Wilkinsburg
31	East Deer Township	64	Borough of Lincoln	97	Ross Township	130	Borough of Wilmerding
32	Borough of East McKeesport	65	Marshall Township	98	Borough of Rosslyn Farms		
33	Borough of East Pittsburgh	66	Town of McCandless	99	Scott Township		

**Table 1-2
Allegheny County Population Projections**

	2010 Actual	2015	2020	2027	2030
Allegheny County	1,210,748	1,189,978	1,169,207	1,143,677	1,132,736

SOURCE: Pennsylvania Population Projections 2000-2030 and the U.S. Census Bureau.

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

The typical municipal waste portion of the County's solid waste stream consists of waste generated by residential (homes, apartments), commercial (offices, retail stores, restaurants, industrial lunchrooms and offices, etc.), institutional sources (municipal buildings, libraries, schools, etc.), and community events. This material does not include sewage sludge generated by on-lot septic systems and WWTPs, RMW generated mainly from hospitals and other medical institutions, ash material generated from municipal waste incinerators and other industrial processes, asbestos material generated from industrial processes and demolition projects, and construction and demolition material generated from building construction and/or demolition projects. Recyclables generated/diverted from municipal waste sources are also included in the tonnages reported below. Table 1-3 reports the total quantities of residential, commercial, and institutional waste processed or disposed of from Allegheny County sources from the years 2010 through 2016.

**Table 1-3
Allegheny County Residential, Commercial, and Institutional Waste
and Recyclables Quantities for 2010 – 2016 (in Tons)**

Type of Material	Year						
	2010	2011	2012	2013	2014	2015	2016
Residential, Commercial, and Institutional Waste*	913,014	910,102	892,156	888,646	894,248	911,094	909,823
Recyclables (diverted)**	358,451	324,118	362,239	471,671	404,741	409,579	499,210
Total:	1,271,465	1,234,220	1,254,395	1,360,317	1,298,989	1,320,673	1,409,033

* Tonnages include MSW material taken to both in State and out-of-state landfills. In-state tonnages were obtained from PADEP Waste Destination Reports.

** Tonnages obtained from Re-TRAC Reports for Allegheny County for both residential and commercial recycling.

A review of Table 1-3 shows a steady state of the reported amount of municipal waste disposed of by Allegheny County residents and businesses over the past seven (7) years. Based on this information, an average of the waste disposed during the past four years (2013 through 2016) was used to estimate the per capita waste disposal rate. The per capita waste disposal rate was applied to the projected population of Allegheny County to develop the projected waste disposal tonnages during the planning period. In

order to move towards a 35% recycling goal, as implemented by the State of Pennsylvania, the waste generation tonnage will be decreased over the 10-year planning period to account for an increase in recycling, but that is discussed in a future chapter.

Using the 2010 U.S. Census population for Allegheny County and the average waste disposed by Allegheny County from 2013 through 2016, a MSW disposal rate of **0.75 tons/capita/year (4.1 lbs./capita/day)** is obtained (does not include special handling waste, C&D, or residual waste). According to the most recent Advancing Sustainable Materials Management: 2014 Fact Sheet (developed in November 2016) by the EPA, the national average disposal rate is **0.53 tons/capita/year**.

Using the amount of waste recycled by Allegheny County from 2013 through 2016, a recycling rate of **0.37 tons/capita/year (2.0 lbs./capita/day)** is obtained. Recycling tonnage totals were not available for 2017 at the time of narrative development. According to the most recent Advancing Sustainable Materials Management: 2014 Fact Sheet (developed in November 2016) by the EPA, the national average recycling rate is **0.27 tons/capita/year** (includes composting).

1.4 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. The amount of C&D waste collected for disposal on an annual basis from Allegheny County sources has been consistent over the past four (4) years, averaging 161,000 tons annually. The per capita disposal rate for C&D waste is expected to remain steady over the next ten years. Table 3-3 reports the total quantities of C&D waste disposed of from Allegheny County sources from 2010 through 2016. C&D waste disposal projections are included as part of the MSW requiring disposal projections.

1.5 Biosolids and Septage Waste

Twenty-nine (29) Municipal WWTPs were surveyed as part of this SWMP. Responses were received from fourteen (14) of the surveyed WWTPs.

The capacity of the WWTPs serving Allegheny County varies from a daily average of approximately 100,000 GPD to 250 MGD. The annual sludge produced (biosolids)

ranged from 227,500 gallons (liquid) to 120,600 tons (“wet” dewatered cake). The amount of dewatered sludge cake disposed of on an annual basis in landfills serving Allegheny County was approximately 600 tons over the past five (5) years. Dewatered sludge cake is sewage sludge that has been removed of water by one of many processes, which produces a cake like substance that can be land applied. The WWTPs listed WM Kelly Run Landfill, Allied Waste Imperial, Allied Waste Scottsdale Landfill, Arden Landfill, Greenridge Reclamation Landfill, Valley Landfill, South Hills Landfill, Carbon Landfill and WM Monroeville as the landfills that accept sludge. There are currently no land application sites permitted in Allegheny County, however, Allegheny County Sanitary Authority listed land application sites in Ohio as a final method of disposal for sludge.

Of the fourteen (14) facilities that responded to the survey:

- Eleven (11) reported landfill disposal of sewage sludge
- One (1) reported transportation of sludge to McCandless Township Sanitary Authority’s Pine Creek Sewage Treatment Plant for final processing and disposal
- One (1) did not specify where sludge is disposed
- One (1) reported land application of sewage sludge in Ohio

The County also used this survey to collect information on which treatment plants accept septage (on-lot system pumpings), and which plants are willing to consider accepting septage in the future. Of the fourteen (14) plants responding to the survey, three (3) of the public WWTPs reported acceptance of septage. This service may be provided either through 1) an agreement between individual septage haulers and the Municipal Authority owning and operating the plant or 2) acceptance by some facilities of septage from any properly licensed septage hauler. The majority of facilities responded that their facilities were not designed to receive and treat septage, so acceptance of this material is not an option in the future without significant upgrades to the site. Based on the survey responses, there are some municipalities that may be interested in accepting septage if the economics were viable. The survey responses are located in Appendix C.

In response to the SOI, respondents were asked to identify a reserved capacity for the acceptance of sewage sludge. Of the fourteen (14) respondents, one (1) respondent indicated that they do not accept sewage sludge, one (1) indicated that sludge may be

accepted at the facility, but did not provide a guaranteed minimum, and three (3) respondents stated that they accept sewage sludge, but included the minimum guaranteed capacity with the minimum guaranteed capacity for MSW and C&D waste. The SOI respondents provided the following minimum disposal capacities for sewage sludge:

Table 1-4
SOI Respondents Guaranteed Minimum Tonnage for Sewage Sludge (in Tons per Year)

Respondent	Tons of Sewage Sludge Per Year
WM Arden Landfill	10,400
WM Kelly Run Landfill	10,400
WM Monroeville Landfill	10,400
WM Valley Landfill	10,400
WM South Hills Landfill	10,400
WM Evergreen Landfill	2,600
Republic Greenridge Reclamation Landfill	31,200
Republic Imperial Landfill	31,200
Total	117,000

* Tonnages obtained from Respondents SOI Submissions.

1.6 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 twenty-seven (27) municipalities that have residential public or private drop-off locations for leaf and yard waste processing and composting. The material from the drop-off is taken to a compost facility or composted on site. Once composted, material is either used onsite, used on municipally owned lands, or offered to residents.

According to the PADEP, there are other options for composting leaf and yard waste if a compost drop-off or processing facility is not an option. Backyard composting and grasscycling are practices that residents can do at their own home. Grasscycling is a simple alternative to bagging grass clippings. Residents can simply leave the clippings on their lawn, where they break down in seven (7) to fourteen (14) days. Another option for recycling leaf and yard waste is backyard composting. A good mix of organic

materials needed for successful composting consists 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 prunings that are high in nitrogen). More information about backyard composting and grasscycling can be found in Appendix F.

The yard waste generation for Allegheny County was estimated using the EPA municipal waste generation rate of 0.8 tons/person/year (4.4 lbs/person/day) and the EPA estimated yard waste percentage of municipal waste generated of 13%. This resulted in an estimated yard waste generation tonnage total as listed below in Table 1-5 over the 10-year planning period.

The yard waste recycling rate of 5.2% was established based on the year 2016 commercial and residential yard waste recycling tonnages, as obtained from Allegheny County, and the municipal waste disposed in 2016. The estimated yard waste recycled was calculated using the 5.2% recycling rate multiplied by the estimated MSW requiring disposal over the ten-year planning period. The difference between the estimated yard waste generated and the estimated yard waste recycled is the estimated yard waste processed/composted on site or disposed. Per the April 2003 RW Beck study, discussed in detail in Section 4.2, 6.1% of the municipal waste disposed is yard waste material. Based on the total tons of yard waste material estimated to be sent to disposal facilities, yard waste may be a market to target to increase recycling over the 10-year planning period.

**Table 1-5
Estimated Yard Waste (YW) Generated, Disposed, Recycled, & Composted
in Allegheny County (in Tons)**

Type of Material	Year									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Estimated YW Generated	122,487	122,054	121,673	121,292	120,911	120,531	120,150	119,769	119,388	119,008
Estimated YW Recycled/Composted ¹	52,795	52,346	51,919	51,493	51,066	50,640	49,953	49,267	48,580	48,154
Estimated YW Composted On-site/Disposed	69,692	69,708	69,754	69,799	69,845	69,891	70,197	70,503	70,808	70,854
Estimated YW Landfilled (Available for Future Capture) ²	61,933	61,406	60,905	60,405	59,905	59,404	58,599	57,794	56,988	56,488
Estimated YW Composted On-site	7,759	8,302	8,848	9,394	9,941	10,487	11,598	12,709	13,820	14,366

¹Calculated using 5.2% yard waste recycling rate

²Calculated per the RW Beck Study, assuming 6.1% of projected municipal waste generated for disposal in Allegheny County (Table 3-4) includes yard waste material and is available for future recovery.

1.7 Regulated Medical and Chemotherapeutic Waste

RMW, formerly known as ICW, 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.

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

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

Surveys were sent out to a number of major haulers of RMW in Allegheny County, as well as a few major generators of RMW in Allegheny County. All generators reported using an outside contractor to manage their RMW waste, with Stericycle listed as the

predominant hauler. The survey results for RMW generators and haulers are located in Appendix C.

Today, medical facilities continue to manage RMW effectively through arrangements with commercial contractors to safely transport, process and dispose of this material. However, home-generated sharps, pharmaceuticals and infectious wastes are not technically regulated RMW, concerns over their safe and best disposal options remain and should be addressed in some way in this plan. Disposal of this waste stream is mentioned in Article VIII Section 812L. Sharps waste is a form of medical waste comprised of items that are used to puncture or lacerate the skin. Common types of sharps include, but are not limited to, syringes and injection devices, blades, contaminated glass and some plastics. See Section 1.12 for information on household pharmaceutical waste disposal.

1.8 Household Hazardous Waste

According to the PADEP, HHW are those wastes produced in our 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 such items as old paints and paint related products, pesticides, pool chemicals, drain cleaners, and 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.
- If the material is still useable (damaged/shelf life expired, etc.) 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. 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 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) on 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.

1.9 Covered Devices (Electronics) Recycling

According to PADEP, 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. In 2013, it was reported that the average number of devices that connect to the Internet, per household, was 5.7. This includes smartphones, tablets and consoles, as well as personal computers. According to manufacturers, a flat screen television has a lifespan between four (4) and ten years when in active use. Per Statista, the average U.S. household had between two (2) and three (3) TVs in 2015.

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. Information on the CDRA is presented in Appendix E.

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. There are several private industries, in and around Allegheny County, that accept electronics for recycling, such as e-Loop, Commonwealth Computer Recycling dba CyberCrunch, ECS&R, JVS Environmental, LLP, and Tri-County Industries, just to name a few.

1.10 Residual Waste

Allegheny County generates residual waste—that is, wastes (including sludges) generated by industrial, mining, agriculture, or water supply treatment facilities. While the County does not manage this waste for disposal, it bears mentioning because Allegheny County residual waste generators have disposed of 363,000 tons, on average, of residual waste annually since 2013. The total tonnage of residual waste disposed in 2016 (308,736 tons) represents approximately 21% of the overall total tonnage of waste disposed from Allegheny County for 2016 (1,503,884 tons). The majority of this waste stream was disposed of at six (6) disposal facilities, including Imperial Landfill, Kelly Run Sanitation, Monroeville Landfill, South Hills Landfill, Seneca Landfill, and Valley Landfill, as well as other facilities accepting smaller tonnages. Disposal facilities, as part of the SOI process, were asked to include their guaranteed tonnage, to Allegheny County, for residual wastes and their not to exceed tipping fees, over the 10-year planning period. Table 1-6 lists the tonnage of residual waste generated in Allegheny County between 2011 and 2016.

Table 1-6
Allegheny County Residual Waste Tonnages for 2011 – 2016*

Year					
2011	2012	2013	2014	2015	2016
352,762	430,066	401,424	403,178	336,610	308,736

*Source: PADEP Waste Destination Reports.

It is assumed the majority of residual waste is from the Marcellus drilling industry. Researchers at the University of Pittsburgh released a study in 2010, which showed that "7 percent of Allegheny County's land has been leased for drilling and extraction

since 2003" and the number of properties in the county leased for oil and gas exploration had grown exponentially in recent years. By 2008, the Marcellus Formation had become the focus of shale gas development, starting in Pennsylvania. Drilling continued to increase until 2012, when it ultimately slowed due to a decline in gas prices. We can observe this steady decline in the residual waste tonnages between 2012 and 2016. Additional information on Marcellus Shale is located in Chapter 11, Section 11.1.

1.11 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. Some municipalities conduct bulky waste collection programs either weekly, monthly, semi-annually, annually or on an as-needed basis. The municipal surveys conducted in 2016 concluded that twenty-six (26) of the responding sixty-eight (68) municipalities have some form of cleanup event for bulky items. Most bulky wastes are disposed of at a solid waste facility or processed for resource recovery. The County illegal dump survey confirmed that hard-to-recycle items, such as tires, appliances, furniture and other bulky waste items, made up a significant portion of the waste at the identified 486 illegal dump sites in the County.

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 these types of wastes are to be returned to a drug take-back program or follow the following steps for household disposal:

- Take the prescription drugs out of their original containers. Liquid pharmaceuticals shall remain in the original container.
- Mix drugs with an undesirable substance, such as cat litter or used coffee grounds.
- Put the mixture into a disposable container with a lid, such as an empty margarine tub, or into a sealable bag.
- 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.

- The sealed container with the drug mixture, and the empty drug containers, can now be placed curbside in your residential waste container.

There are currently thirty-nine (39) drug take back drop-off boxes in Allegheny County sponsored by the Pennsylvania Department of Drug and Alcohol Programs, the Pennsylvania Commission on Crime and Delinquency and the Pennsylvania District Attorneys Association. The following items are NOT accepted at the drop-off boxes:

- Intravenous solutions
- Injectables, syringes, and needles (i.e. EpiPens)
- Hydrogen peroxide
- Compressed cylinders or aerosols (e.g. asthma inhalers)
- Iodine-containing medications
- Thermometers
- Alcohol and illicit drugs (i.e. marijuana, heroin, LSD, etc.)

This information is located on the ACHD website under “Helpful Info” at the following location: <http://www.achd.net/recycling/index.html>. To locate a drug take-back location, municipalities may refer residents to this website: <https://apps.ddap.pa.gov/gethelpnow/PillDrop.aspx>

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:

- 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.
- Close the container with its original lid and secure with heavy duty tape.
- Place the tightly sealed container in a paper bag and discard it with the household waste.
- It is recommended to disinfect sharps with a solution of one (1) teaspoon of bleach in ½ gallon of water, prior to disposal.
- 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.
- Do not place this material with the recyclables.

More information on home health care wastes and a flyer that may be distributed to residents can be found on ACHD's website under "Helpful Info".

CHAPTER 2 - DESCRIPTION OF FACILITIES

This section describes the facilities that are currently being used to manage the MSW generated in Allegheny County.

2.1 Existing Waste Disposal Facilities

There are currently four (4) waste disposal facilities located in Allegheny County. They are Imperial Landfill, Kelly Run Sanitation Landfill, Monroeville Landfill and the South Hills Landfill. The majority of Allegheny County municipal waste has been disposed of at the Imperial Landfill and the Monroeville Landfill (nearly 700,000 tons annually) over the past five (5) years. The facilities that took over 25,000 tons of municipal waste from Allegheny County in 2016 are: Arden Landfill, Tervita Sanitary Landfill, Valley Landfill, Greenridge Reclamation Landfill, Seneca Landfill, South Hills Landfill, and Kelly Run Sanitation Landfill.

The following disposal facilities executed reserved capacity agreements with Allegheny County as part of the 2006 SWMP:

- Arden Landfill
- Brooke County Landfill (West Virginia)
- Carbon-Limestone Landfill (Ohio)
- Greenridge Reclamation Landfill
- Imperial Landfill
- Joseph J. Brunner Landfill
- Kelly Run Landfill
- Monroeville Landfill
- Northwest Sanitary Landfill
- Seneca Landfill
- South Hills Landfill
- Valley Landfill
- Westmoreland Waste (Tervita)
- Mostoller Landfill

Table 2-1 lists the amount of MSW accepted at facilities with executed disposal capacity contracts with Allegheny County from 2011 – 2016. Municipal waste in Table 2-1 includes typical MSW, C&D waste, sewage sludge, RMW, ash and asbestos. Table 2-2 provides information on those facilities with existing waste disposal contracts with Allegheny County.

2.2 Existing Waste Transfer Stations

There are currently seven (7) PADEP permitted waste transfer stations located in Allegheny County. These include ABC EZ Containers, Boyd Roll Off Service, Inc., Genesis Autoclave (RMW waste only), Michael Brothers Hauling, Inc., Reserve Park Transfer Station, McKees Rock Transfer Station, and Iron City Express. These facilities and the services they provide are in Table 2-3. Additionally, there are seven (7) transfer stations located in contiguous Counties that may accept Allegheny County waste. They are in Table 2-4.

Table 2-1
MSW Accepted at Landfills with Executed Contracts
with Allegheny County¹ (in Tons)

	2011	2012	2013	2014	2015	2016
Arden Landfill	100,164.3	102,511.8	100,451.7	77,636.8	88,890.6	74,990.6
Brooke County Landfill	0	785.2	1,527.4	1,833.1	1,273.3	1,063.2
Carbon-Limestone Landfill	0	12,790	25,726.9	21,658.7	9,228.17	6,400.6
Greenridge Reclamation Landfill	69,128.6	76,631.8	82,530.5	85,990.4	87,984.9	87,835.1
Imperial Landfill	382,739.9	390,540.9	391,578.3	334,203.8	380,659.9	359,162.9
Joseph J. Brunner Landfill	20,612.2	19,771.4	20,067.1	19,688.3	18,364.5	18,936.3
Kelly Run Landfill	64,319	54,626.2	62,012.7	58,656.4	48,332.7	56,357.4
Monroeville Landfill	292,641.5	277,006.9	265,967.8	273,044	313,008.9	316,965.8
Northwest Sanitary Landfill	3,330.6	3,492.3	19,227.7	8,904.2	3,921.1	3,400.8
Seneca Landfill	84,207	78,415.2	66,081.2	64,133.1	69,999	60,547.5
South Hills Landfill	51,880	60,734.9	65,209.3	75,166.5	57,486.1	60,028.6
Valley Landfill	74,068.9	62,164.4	55,659.7	47,128.1	44,338.3	38,023.9
Westmoreland Waste (Tervita)	64,074.2	67,965.1	63,386.4	68,764.9	65,713.2	51,739.1
Mostoller Landfill	14	13.2	14	73.9	0	2
Total	1,207,180.2	1,207,449.3	1,219,440.7	1,136,882.2	1,189,200.67	1,135,453.8

¹MSW includes typical municipal waste, C&D, Sewage Sludge, RMW, Ash and Asbestos

**Table 2-2
Allegheny County Contracted Disposal Facilities**

	PADEP Permit Number	Permitted Capacity	Remaining Capacity (as of 2016)	Available Capacity through Expansion	Recyclable Materials accepted at on-site drop-off
Arden Landfill ¹	100172	33,750,000 tons	23,395,842 tons	-	Newspaper, Cardboard, Plastic, Tin cans, Aluminum and Glass Bottles
Brooke County Landfill	-	9,586,518 tons	1,067,400 tons	7,194,000 tons	No on-site drop-off
Carbon-Limestone Landfill	-	67,912,755 CY	4,960,793 CY	2,100,000 CY	No on-site drop-off
Greenridge Reclamation Landfill	100281	12,006,898 CY	2,586,738 CY	41,000,000 CY	Newspaper, Cardboard, Plastic, Aluminum and Glass Bottles
Imperial Landfill	100620	17,679,050 CY	20,897,223 CY	-	Paper, Cardboard, Plastic, Metals, and Glass
Joseph J. Brunner Landfill ¹	101439	4,054,000 tons	2,162,181 tons	-	Tin, Metal, Aluminum, Glass, Plastic (PET & HDPE), Newspaper, Office Paper and Magazines.
Kelly Run Landfill ¹	100663	6,000,000 tons	1,236,610 tons	-	Newspaper, Cardboard, Plastic, Tin cans, Aluminum and Glass Bottles
Monroeville Landfill ¹	100594	25,290,600 tons	12,349,818 tons	-	Aluminum, Tin, & Steel Cans, Food & Beverage Cartons, Glass Bottles & Jars (Clear & Colored), Cardboard & Paperboard, Plastic Bottles & Containers (coded #1 thru #7), Newspapers, brown bags, magazines, & colored flyers
Northwest Sanitary Landfill ¹	100585	812,500 tons	562,500 tons	-	Newspaper, Cardboard, Plastic, Tin cans, Aluminum and Glass Bottles
Seneca Landfill	100403	3,396,937 tons	5,374,901 CY	40.85 acres	Paper, Cardboard, Plastic, Metals, and Glass
South Hills Landfill ¹	100592	17,563,000 tons	8,037,671 tons	-	Newspaper, Cardboard, Plastic, Tin cans, Aluminum and Glass Bottles
Valley Landfill ¹	100280	21,621,000 tons	6,138,068 tons	-	Newspaper, Cardboard, Plastic, Tin cans, Aluminum and Glass Bottles
Westmoreland Waste (Tervita)	100277	32,631,391 CY	27,425,236 CY	-	Single stream: Glass, Metals, Plastics, Paper and Cardboard
Mostoller Landfill ¹	101571	15,205,000 CY	6,500,000 CY	-	Newspaper, Cardboard, Plastic, Aluminum and Glass Bottles

¹ Based on phone conversations in November 2017, these facilities indicated that there are no planned expansions at this time.

**Table 2-3
Existing Permitted Transfer Stations in Allegheny County**

Transfer Station ¹	Description of Services Provided	Residential Access
ABC EZ Containers 1000 Island Ave. McKees Rocks, PA 15136	Provides roll-off dumpsters for spring-cleaning, moving debris, commercial C&D, roofing debris, and deck removals. Accepts wood, cement, metal, drywall, glass, brick, stone, large household appliances, HVAC material, plumbing fixtures, tires and C&D at their facility.	Yes
Genesis Autoclave Industrial Center of McKeesport McKeesport, PA 15132	Accepts RMW only	No
Michael Brothers Hauling 5331 McAnulty Road Pittsburgh, PA 15236	Provides dumpsters for commercial and residential waste removal for C&D, household debris, demolition, fire/water restoration, roofing debris, yard cleanup, scrap metal, clean fill, and green wastes. Residential recycling drop-off of for concrete, wood waste, cardboard, aluminum, cooper, car batteries, tin, electric motors, insulated wire and non-magnetic stainless steel. Accepts non-hazardous materials, such as construction debris, green waste, large household appliances (not containing Freon), tires, glass, drywall, HVAC materials, stone, brick, cement, and scrap metals.	Yes
Reserve Park Transfer Station 408 Hoffman Road Pittsburgh, PA 15212	Provides dumpsters for commercial and residential waste removal for C&D, household debris, demolition, fire/water restoration, roofing debris, yard cleanup, scrap metal, clean fill, and green wastes. Residential recycling drop off for concrete, wood waste, cardboard, aluminum, cooper, car batteries, tin, electric motors, insulated wire and non-magnetic stainless steel. Accepts non-hazardous materials, such as construction debris, green waste, large household appliances (not containing Freon), tires, glass, drywall, HVAC materials, stone, brick, cement, and scrap metals.	Yes
McKees Rock Transfer Station (formerly known as Penn Waste) 149 Nichol Avenue Stowe Township, PA 15136	Provides roll off dumpsters for commercial and residential customers for C&D material, roofing materials, empty paint cans, drywall, wood, yard waste, household debris, home renovation projects, and clean-outs. Accepts C&D and non-hazardous waste materials at their facility.	Yes
Boyd Roll Off Service, Inc. 1107 Thompson Road McKees Rocks, PA 15136	Provides roll-off dumpsters for home renovation projects and spring-cleaning for shingles, concrete/asphalt removal products, empty paint cans, batteries, household appliances, anything containing Freon, tires, scrap metals and car batteries. Accepts non-hazardous materials at their facility, such as refrigerators, air conditioners, and appliances.	Yes
Iron City Express 1308 Main Street Crescent Township, PA 15046	Accepts C&D only. Does not accept hazardous waste.	No

¹ Addresses obtained from PADEP

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

Waste Transfer Station	Address	County
Ambridge Transfer Station	2197 Duss Ave Ambridge, PA 15003	Beaver
Seneca Landfill Transfer Station	421 Hartmann Road Evans City, PA 16033	Butler
Weavertown Transfer Station	3866 Millers Run Road McDonald, PA 15057	Washington
LaTrobe Transfer Station	696 Mission Road Latrobe, PA 15650	Westmoreland
Valley Waste Services	261 Wallace Run Road, Beaver Falls PA 15010	Beaver
Brunner Transfer Station ⁽¹⁾	221 Brunner Road, Zelienople PA 16063	Butler
Atkinson Roll-Off and Sanitation	289 Lairds Crossing Road Worthington, PA 16262	Armstrong

¹ Transfer Station is located within landfill property and is for C&D materials only. Facility is not individually permitted through PADEP.

2.3 Sites for Agricultural Utilization of Biosolids

Chapter 1, Section 1.4, summarized the current biosolids management system. There are currently no land application sites located in Allegheny County.

2.4 Consideration of Existing Facilities

Section 272.224 of Title 25 of the Pa. Code mandates that the county plan must consider facilities that meet the definition of "existing facility". In Chapter 5 of the SWMP, the selection and justification of the municipal waste program is outlined. In order to minimize the effect on landfill capacity of reserving space for Allegheny County waste and to allow for flexibility for backup capacity, Allegheny County decided to use multiple disposal facilities. This action is also expected to help maintain competition in the area. Allegheny County's 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

Allegheny County includes four (4) cities, eighty-four (84) boroughs, and forty-two (42) townships with a population of 1,210,748 persons (2010 Census). Over a recent five (5) year period (2012 – 2016), the majority of Allegheny County municipal wastes were transported to two (2) landfills. A listing of these disposal sites, along with the tonnages of Allegheny County MSW accepted each year between 2012 and 2016, are presented in Table 3-1. The two (2) disposal facilities that accepted the majority of Allegheny County MSW for disposal during this time are shaded in Table 3-1.

**Table 3-1
Allegheny County MSW and C&D
Accepted at Disposal Facilities (2012 – 2016) (in Tons)**

Site Name	County	Year ¹					
		2012	2013	2014	2015	2016	5 year total
Arden LF	Washington	88,153.9	89,929.5	77,561.3	82,022.8	74,990.6	412,658.1
Tervita Sanitary LF	Westmoreland	59,193.2	55,259.9	59,709.1	59,636.9	45,426.1	279,225.2
Valley LF	Westmoreland	49,598.1	50,556.8	44,679.6	36,016.3	33,555	214,405.8
Greenridge Reclamation LF	Westmoreland	66,096.1	72,548.4	77,154	73,172.4	72,026.7	360,997.6
Seneca LF	Butler	73,525.9	61,473.6	58,674.8	64,742.6	58,701	317,117.9
ADS Chestnut Valley LF	Fayette	0	96	463.4	688.9	693.3	1,941.6
Northwest Sanitary LF	Butler	3,492.3	4,956.2	6,296.1	3,905.2	3,398.1	22,047.9
South Hills LF	Washington	58,200.7	62,509	63,994.1	50,454.3	58,907.7	294,065.8
Monroeville Landfill	Allegheny	262,314.8	253,423.6	261,919.1	296,085.5	300,279.9	1,374,022.9
Imperial LF	Allegheny	349,528.8	352,410.8	315,590.2	338,069	326,248.1	1,681,846.9
Kelly Run Sanitation LF	Allegheny	54,614.3	61,707.5	58,496.6	48,154.2	56,112.9	279,085.5
JJ Brunner LF	Beaver	19,005.8	19,075.9	18,558.6	17,469.1	18,065.5	92,174.9
Mostoller LF	Somerset	13.2	80.9	73.9	0	2	170
Evergreen LF	Indiana	41	50	36.6	8.3	9.2	145.1
Carbon Limestone LF	Lowellville, OH	2,813	664	851	207	-	4,535
Brooke County LF	Follansbee, WV	785	1,527	1,833	1,273	-	5,418
Total		1,087,376.10	1,086,269.50	1,045,891.40	1,071,905.50	1,048,416.10	5,339,858.60

Source: PADEP Waste Origin/ Out-of-State Tonnage Report as submitted to Allegheny County.

¹ Tonnages include typical MSW and C&D material. Tonnages do not include residual, sewage sludge, RMW, 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. Table 3-2 shows the County population, based on the 2010 Census information and population estimates and forecasts for Allegheny County from 2011 through 2030. These population forecasts were extracted from the Pennsylvania Population Projections Report for 2000 – 2030, as provided by the ACHD.

**Table 3-2
Historic and Projected Populations for Allegheny County**

Year	Population
2010 (US Census Bureau)	1,210,748
2011	1,206,594
2012	1,202,440
2013	1,198,286
2014	1,194,132
2015	1,189,978
2016	1,185,823
2017	1,181,669
2018	1,177,515
2019	1,173,361
2020	1,169,207
2021	1,165,560
2022	1,161,913
2023	1,158,266
2024	1,154,619
2025	1,150,972
2026	1,147,324
2027	1,143,677
2028	1,140,030
2030	1,132,736

Source: U.S. Census of Population, 2010.
Forecasts: Pennsylvania Population Projections Report 2000-2030

As Table 3-2 illustrates, the County is forecast to have a steady decline in population over the 10-year planning period. Allegheny County's projected population from 2019 to 2028 is projected to decrease by approximately 33,000 persons, or approximately 3% over ten years.

3.2 Waste and Recyclables Projections

The three (3) primary sources of data used in making projections of the amount of municipal wastes generated for disposal in the one hundred and thirty (130) municipalities of Allegheny County are: the population projections (Table 3-2); Re-TRAC data on recyclables and organics diverted from disposal through recycling/ composting (Table 3-3), and; Allegheny County-generated tons of MSW disposed, taken from PADEP Waste Origin/Destination Landfill Summary Reports from 2010 through the year 2016 (Tables 3-1 and 3-3) and Out-of-State waste tonnage reports provided by the disposal facility to the ACHD.

The estimates and projections of municipal waste disposed in Allegheny County, presented in Table 3-4, were computed by taking into consideration historic per capita waste and recycling disposal and diversion rates and applying these rates to the projected County population for years 2018 through 2030 (with some special considerations, that will be discussed in this chapter). The per capita waste disposal rates were calculated by taking the net waste disposal tonnage data contained in the PADEP Waste Origin/Destination Reports and the tonnage reports submitted by Out-of-State facilities to Allegheny County for years 2013 through 2016, and dividing the average of these tonnages (from Table 3-3) by the estimated population of Allegheny County during that time period, assumed for the purposes of these calculations to be the year 2010 U.S. Census population for Allegheny County.

The calculated waste disposal rates were compared to the national average as reported by the EPA. The waste disposal rates for Allegheny County (0.75 tons/person/year) exceed the national average (0.53 tons/person/year). Because there are four (4) waste disposal facilities located in the County, it is not believed that Allegheny County waste is being mislabeled as other County's waste at a transfer station or waste disposal facility. Additionally, Allegheny County has a countywide burn ordinance in place. As part of Ordinance No. 16782, Section 2105.50 addresses open burning in the County. This Ordinance states:

"No person shall conduct, or allow to be conducted, the open burning of any material, except where the Department has issued an open burning permit to such person in accordance with this Section or where the open burning is conducted solely for the purpose of preparation of food for human consumption,

recreation, light, or ornament, and in a manner which contributes a negligible amount of air contaminants...”

Considering the waste disposal facilities located within the County and the countywide anti-burn Ordinance in place, B&L does not believe there is a reason to investigate issues such as illegal burning or mislabeling of waste as part of the waste projections for the planning period. The illegal dump survey will be discussed in Chapter 11, Section 11.2.

The calculated per capita disposal and diversion rates for each waste and recyclables category was then multiplied by yearly population projections for years 2018 through 2030, to estimate waste and recyclables tonnages disposed or diverted by Allegheny County over the planning period (with some special considerations/ adjustments). These waste and recyclables/organics projections, through year 2030, are presented in Table 3-4.

3.3 Per Capita Waste Disposal Rates

Between 2013 and 2016, it is estimated that Allegheny County generated an average of approximately 1,612,000 TPY of MSW (all categories) and recyclables/ organics, of which approximately 1,166,000 tons were reportedly landfilled each year.

Typical MSW disposed by Allegheny County residents, which includes residential, commercial, institutional, but not including recyclables/ organics diverted from disposal, averaged approximately 903,000 TPY between 2013 and 2016. Using the 2010 U.S. Census population of 1,210,748 for Allegheny County, the **typical MSW per capita** rate for waste disposal averaged approximately **0.75 tons per capita per year**.

The national average per capita waste disposal rate is 0.53 tons per capita per year for typical MSW. The higher Allegheny County MSW per capita rate as compared to the national average makes sense when considering the amount of out-of-county visitors that frequent the County throughout the year for public events, such as visitors to the Pittsburgh Steeler’s stadium and the Pittsburgh Pirates Ballpark. Additionally, those that attend school at the University of Pittsburgh, for example, for the majority of the year may not be counted as residents in the census data. These students and visitors over the course of the year contribute to the waste generated in Allegheny County.

C&D averaged 161,000 tons annually between 2013 and 2016. Based on the year 2010 U.S. Census population, the average per capita waste disposal rate for C&D is **0.13 tons per capita per year**.

Sewage Sludge (the fraction that is dewatered and landfilled, but excluding land-applied liquid sludge) averaged 65,000 tons annually between 2013 and 2016. Based on the year 2010 U.S. Census population, the average per capita waste disposal rate for dewatered and landfilled sewage sludge was **0.05 tons per capita per year**.

RMW generated by Allegheny County and disposed in landfills averaged 5,000 tons annually between 2013 and 2016. Based on the year 2010 U.S. Census population, the average per capita waste disposal rate for this waste material was **0.004 tons per capita per year**.

The Ash Residue component of Special Municipal Wastes generated by Allegheny County and disposed in landfills averaged 23,000 tons annually between 2013 and 2016. Based on the year 2010 U.S. Census population, the average per capita waste disposal rate for this waste material was **0.02 tons per capita per year**.

The Asbestos component of Special Municipal Wastes generated by Allegheny County and disposed in landfills averaged 10,000 tons annually between 2013 and 2016. Based on the year 2010 U.S. Census population, the average per capita waste disposal rate for this waste material was **0.01 tons per capita per year**.

Non-hazardous industrial waste (residual wastes) tonnages are not a component of municipal wastes, and this plan deals with municipal wastes as defined by Act 101 of 1988. However, it is noted that residual waste generated within Allegheny County and disposed annually, averaged approximately 363,000 TPY between 2013 and 2016. Based on the year 2010 U.S. Census population, the average per capita waste disposal rate for this waste material was approximately **0.30 tons per capita per year**. Residual waste makes up a significant fraction of the overall waste generated and disposed in Allegheny County, therefore future generation of residual wastes in Allegheny County is included in the waste projection tables.

**Table 3-3
Allegheny County Waste and Recyclables/ Organics Disposed/Diverted 2010 – 2016 (in Tons)**

Waste Type	Year							
	2010	2011	2012	2013	2014	2015	2016	4 Year Average ¹
Typical Residential, Commercial, and Institutional MSW	913,014	910,102	895,755	890,837	896,932	912,574	909,823	902,541
C&D	199,464	188,809	191,622	195,432	148,959	159,331	138,613	160,584
Recyclables & Organics Diverted	358,451	324,118	362,239	471,671	404,741	409,579	499,210	446,300
SUBTOTAL - Typical MSW, C&D, Recyclables/ Organics	1,470,929	1,423,029	1,449,616	1,557,941	1,450,632	1,481,484	1,547,646	1,509,426
Recycling Diversion	24%	23%	25%	30%	28%	28%	32%	30%
Sewage Sludge	60,894	56,884	69,463	79,192	76,777	59,805	44,659	65,108
RMW	8,616	8,937	6,703	4,951	4,181	6,679	2,809	4,655
Ash Residue	12,786	28,744	32,203	21,667	16,335	34,702	16,676	22,345
Asbestos	6,147	7,733	5,859	21,382	7,719	6,884	5,717	10,426
TOTAL – All Categories of Municipal Waste + Recycling	1,559,372	1,525,327	1,563,843	1,685,132	1,555,644	1,589,555	1,617,507	1,611,959
Residual Waste	320,127	352,762	430,066	401,424	403,178	336,610	308,736	362,487
TOTAL – Municipal Waste, All Types + Recycling/ Organics + Residual Waste	1,879,499	1,878,089	1,993,909	2,086,556	1,958,822	1,926,165	1,926,243	1,974,446

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

¹Recycling Averages based upon tonnages from 2013-2016 only.

3.4 Future County Municipal Waste Generation for Disposal Projections

Table 3-4 presents the annual MSW waste generation for disposal and recyclables diversion estimates/ projections for the County, from 2018 through 2030. These projections are tied to the population projections from Table 3-2 and the per capita waste disposal figures developed in Section 3.3 of this chapter. The total waste generated in Allegheny County, including recyclables, requiring disposal is calculated to decrease slightly over the 10-year planning period, due to a steady decrease in the County's population over the 10-year planning period.

Municipal wastes that are not diverted/ recycled must be processed/ disposed. It is believed that the average per capita waste disposal rates for the multiple fractions of MSW generated (described in Section 3.3) is a valid basis for projecting future waste disposal tonnages.

As presented in Table 3-4, net County-generated MSW, including residential/ commercial/ institutional waste requiring disposal (after waste diversion and recycling), is projected to decrease steadily over the 10-year planning period, due to a projected increase in recycling efforts and a projected decrease in population.

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 SWMP projects that disposal of C&D waste will decrease over time, with the declining population and an increase in C&D recycling from the introduction and growth of programs to recycle this material. The growing C&D recycled tonnage has not been included in the recycling diversion tonnage totals projected in Table 3-4, since it is highly dependent on private industries within the County 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, RMW, ash residue, and asbestos, are projected to have a relatively steady decrease in combined disposal capacity need over the 10-year planning period ranging from approximately 100,000 to 96,000 TPY.

When considering the disposal capacity needs for Allegheny County's MSW, and when procuring this disposal capacity through a SOI, it was prudent to consider the need to accommodate approximately 1,500,000 - 1,600,000 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 2019 to 2028. Conservative disposal capacity requirements were included in the SOI for Disposal Capacity, further discussed in Section 3.6.

3.5 Possible Variations in Future Waste Generation for Disposal Projections

The primary variables that may affect actual MSW waste generation/ disposal tonnages in Allegheny County in the future are:

- Population loss or gain
- Changes in recycling activities and opportunities in Allegheny County
- 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

Product packaging is still very sensitive to the demands of the marketplace in relation to consumer convenience, consumer manufacturing protection, and retail theft, which, in turn, are in response to the pressures and demands of current day society. Product tampering and the attendant lawsuits have resulted in increased packaging of some food and medicinal products. Retail theft contributes to over packaging of smaller items, the blister pack being an outgrowth of this societal problem. This product packaging tendency along with a forecast of increases in "disposable" health care items and online purchasing will tend to offset waste reduction programs. Although an increase in waste disposal from this type of product packaging has not been accounted for in the projections, it is worth mentioning and worth accounting for when evaluating disposal capacity over the 10-year planning period.

E-commerce is on the rise and with it, comes increased cardboard. There is no denying that companies such as Amazon and Google have grown over the past ten years. Their growth has directly influenced the amount of cardboard recycled on a residential level annually in the U.S. over the past ten years. 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, it's forecasted to grow. Companies, such as Amazon and Google, are making efforts to reduce cardboard packaging and over packaging of products to reduce the amount of material received by the consumer. These efforts are beneficial, but while these efforts are being implemented, it is important to consider cardboard recycling as part of the 10-year planning process.

The County's recycling activities and programs have been consistent over the past few years. The recycling program throughout the County currently consists of drop-off locations; curbside collection conducted by the private/public sector and periodic HHW and e-waste collection events. The County is interested in exploring options, during this planning process, to provide convenient recycling to more residents, as well as offer additional recycling opportunities, such as HHW and e-waste collection to residents on a more consistent timeframe. These programs may increase recycling rates annually from an average four-year recycling rate of 30% to potentially 35% in 2027. The SWMP takes into account that the recycling programs offered in Allegheny County are dependent on funding, political will, 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 can't 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 ten year planning period.

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**Table 3-4
Waste and Recycling Projections, 2015 – 2030 (In Tons)**

Waste Type	Year															
	2015 Historical	2016 Historical	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
County Population	1,189,978	1,185,823	1,181,669	1,177,515	1,173,361	1,169,207	1,165,560	1,161,913	1,158,266	1,154,619	1,150,972	1,147,324	1,143,677	1,140,030	1,136,383	1,132,736
Typical MSW, C&D and Recyclables																
Estimated MSW (including C&D, not including recyclables) Requiring Disposal	1,071,905	1,048,436	1,037,592	1,023,944	1,015,297	1,006,649	998,447	990,244	982,042	973,840	960,637	947,435	934,232	926,030	922,827	919,625
Estimated Recyclables & Organics Diverted	409,579	499,210	435,581	444,050	447,519	450,988	454,643	458,299	461,955	465,610	474,266	482,921	491,577	495,233	493,888	492,544
Total MSW, including C&D, and Recyclables	1,481,484	1,547,646	1,473,173	1,467,995	1,462,816	1,457,637	1,453,090	1,448,543	1,443,996	1,439,450	1,434,903	1,430,356	1,425,809	1,421,263	1,416,716	1,412,169
Recyclables Diversion, as a % of MSW (including C&D) + Recycling	28%	32%	30%	30%	31%	31%	31%	32%	32%	32%	33%	34%	34%	35%	35%	35%
Special Handling Waste																
Estimated Sewage Sludge Generated	59,805	63,768	63,545	63,321	63,098	62,875	62,678	62,482	62,286	62,090	61,894	61,698	61,502	61,306	61,109	60,913
Estimated ICW Generated	6,679	4,559	4,543	4,527	4,511	4,495	4,481	4,467	4,453	4,439	4,425	4,411	4,397	4,383	4,369	4,355
Estimated Ash Generated	34,702	21,885	21,808	21,732	21,655	21,578	21,511	21,444	21,376	21,309	21,242	21,174	21,107	21,040	20,973	20,905
Estimated Asbestos Generated	6,884	10,211	10,175	10,139	10,104	10,068	10,036	10,005	9,974	9,942	9,911	9,879	9,848	9,817	9,785	9,754
Total - All Categories of Special Handling Waste	108,070	100,423	100,071	99,720	99,368	99,016	98,707	98,398	98,089	97,780	97,472	97,163	96,854	96,545	96,236	95,927
Total - Municipal Waste, All Types + Recycling/Organics	1,589,555	1,648,069	1,573,245	1,567,714	1,562,183	1,556,653	1,551,797	1,546,942	1,542,086	1,537,230	1,532,375	1,527,519	1,522,663	1,517,808	1,512,952	1,508,096
Total - All Categories of Municipal Waste (Net of Recycling)	1,179,976	1,148,859	1,137,663	1,123,664	1,114,665	1,105,665	1,097,154	1,088,643	1,080,131	1,071,620	1,058,109	1,044,597	1,031,086	1,022,575	1,019,064	1,015,552
Estimated Residual Waste Generated	336,610	355,025	353,781	352,537	351,294	350,050	348,958	347,866	346,774	345,682	344,590	343,499	342,407	341,315	340,223	339,131
Total - Municipal Waste, All Types + Recycling/Organics + Residual Waste	1,926,165	2,003,094	1,927,026	1,920,252	1,913,477	1,906,703	1,900,755	1,894,808	1,888,860	1,882,913	1,876,965	1,871,017	1,865,070	1,859,122	1,853,175	1,847,227
MSW + Special Handling Waste + C&D	1,179,976	1,148,859	1,137,663	1,123,664	1,114,665	1,105,665	1,097,154	1,088,643	1,080,131	1,071,620	1,058,109	1,044,597	1,031,086	1,022,575	1,019,064	1,015,552
MSW + Special Handling Waste + C&D + Residual	1,516,586	1,503,884	1,491,444	1,476,201	1,465,958	1,455,715	1,446,112	1,436,509	1,426,906	1,417,302	1,402,699	1,388,096	1,373,493	1,363,890	1,359,286	1,354,683

Source: 2017-2030 B&L estimated waste projections, 2015-2016 PADEP waste destination reports, Re-TRAC Reports and Out-of-State Landfill reports.

3.6 Total Contracted Disposal Capacity Needs and Solicitation

Realizing that the County must ensure long-term disposal capacity, a SOI for Disposal Capacity Assurance was prepared and distributed to facilities that took over 25,000 tons of Allegheny County MSW annually over the past five (5) years and those facilities that requested a copy of the SOI. Refer to Appendix A for a copy of the SOI, a copy of the advertisements placed in the local paper (Pittsburgh Post-Gazette), Waste Advantage and the PA Bulletin, and the evaluation of the SOIs received. Fourteen (14) disposal facilities responded to the SOI to provide disposal services to Allegheny County, for a maximum period of ten years, with a five (5) year initial term and an optional five (5) year renewal. The SOI stated that the County may require a combined municipal waste disposal capacity of up to 1,600,000 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 B&L’s current waste projections (Table 3-4), Allegheny County is projected to generate for disposal, 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 1,124,000 tons in 2018; adding in residual waste disposal needs, this total need is approximately 1,480,000 tons in 2018. The equivalent projections for year 2028 are 1,023,000 and 1,364,000 TPY of disposal needs, respectively. These projections include an increase in recycling from the implementation of new recycling programs aimed at targeting paper recycling (in particular cardboard recycling), education, and continuing increase of HHW and e-waste recycling due to existing and new collection events over the 10-year planning period (at a minimum).

Therefore, the waste tonnage guaranteed from the respondent disposal facilities to the SOI is adequate to meet the MSW disposal needs of the County during the 10-year planning period as shown in Table 3-5. Chapter 6 contains a summary of the results of the SOI and the decisions made regarding selection of processing/ disposal sites.

**Table 3-5
Waste Disposal Capacity Assurance (In Tons)¹**

Facility	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Chestnut Valley Landfill	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
Joseph J. Brunner Landfill	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Seneca Landfill	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000
Arden Landfill	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160
Kelly Run Landfill	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160
Monroeville Landfill	317,200	317,200	317,200	317,200	317,200	317,200	317,200	317,200	317,200	317,200
Northwest Landfill	No Guaranteed Capacity Provided					0	0	0	0	0
South Hills Landfill	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160
Valley Landfill	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160	160,160
Westmoreland County Landfill (Tervita) ²										
Carbon Limestone Landfill	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Imperial Landfill	187,200	187,200	187,200	187,200	187,200	187,200	187,200	187,200	187,200	187,200
Greenridge Landfill	156,000	156,000	156,000	156,000	156,000	156,000	156,000	156,000	156,000	156,000
Evergreen Landfill	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000
Total Disposal Capacity Assurance for MSW and C&D	1,522,040	1,522,040	1,522,040	1,522,040	1,522,040	1,522,040	1,522,040	1,522,040	1,522,040	1,522,040
Total Disposal Capacity Assurance for Sewage Sludge	117,000	117,000	117,000	117,000	117,000	117,000	117,000	117,000	117,000	117,000
Total Disposal Capacity Assurance for MSW, C&D and Sewage Sludge	1,639,040	1,639,040	1,639,040	1,639,040	1,639,040	1,639,040	1,639,040	1,639,040	1,639,040	1,639,040
Projected Generation For Disposal (MSW, C&D and Recyclables)	1,462,816	1,457,637	1,453,090	1,448,543	1,443,996	1,439,450	1,434,903	1,430,356	1,425,809	1,421,263
Projected Recyclables Diverted	447,519	450,988	454,643	458,299	461,955	465,610	474,266	482,921	491,577	495,233
Projected Capacity Needs for MSW and C&D Wastes (Net of Recycling)	1,015,297	1,006,649	998,447	990,244	982,042	973,840	960,637	947,435	934,232	926,030
Projected Capacity Needs For Sewage Sludge	63,098	62,875	62,678	62,482	62,286	62,090	61,894	61,698	61,502	61,306
Total Potential Capacity Needs	1,078,395	1,069,524	1,061,125	1,052,727	1,044,328	1,035,930	1,022,531	1,009,132	995,734	987,335
Capacity Needs Met	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

¹ The facilities that committed to sewage sludge disposal capacity include; Chestnut Valley, Arden, Kelly Run, Monroeville, South Hills, Valley, Westmoreland Sanitary, Seneca, Carbon Limestone, Evergreen, Greenridge, and Imperial.

² Provided capacity assurance of 500 tons per day. Operating days per year was not provided to calculate annual disposal capacity assurance. .

CHAPTER 4 -DESCRIPTION OF RECYCLING PROGRAM

This chapter describes the recycling activities taking place in Allegheny County, 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 The 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 printout, 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 MSW 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 (#1) and HDPE (#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 is 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. 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 have been 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. There are municipal recycling collection events that include major appliances, computers and electronics, pharmaceuticals, e-waste, household chemicals, tires, CFL bulbs and other items.

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 County that sell tires offer to properly dispose of tires for a fee. A few of these facilities are available to County residents: Mr. Tire, Pep Boys, Jurassic Junk Removal, PRC, and the City of Pittsburgh. Residents are responsible for transporting the tires to the facility. PRC, in conjunction with the County, holds county wide hard to recycle collection events, each year, which also include the collection of tires.

Residents are encouraged to visit <https://allegheycounty.us/Health-Department/Programs/Waste--and-Water-Related/Solid-Waste-Management-and-Recycling/Recycling.aspx> for up-to-date information on County collection events.

Used textiles can also be recycled. Textiles can be reused as rags, or reprocessed into filler products such as insulation or furniture padding. A local company that encourages the recycling of textiles is Goodwill of Southwestern Pennsylvania. Goodwill accepts a wide variety of items. For a list of the material that Goodwill can and cannot accept, visit their website at www.goodwillswpa.org.

A recent 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

HHW and E-Waste

The primary disposal/recycling resource for Allegheny County residents are the PRC and Allegheny County sponsored annual HHW and e-waste collection events.

In 2016, ECS&R hosted approximately 80 one-day collection events in western Pennsylvania. At the events held in 2016, ECS&R collected HHW (including lawn and garden chemicals, paints, automotive supplies), universal wastes, e-waste materials and Freon containing items.

In addition to the PRC and ECS&R collection events, forty-three (43) municipalities in Allegheny County have access to curbside collection of e-waste and HHW material (as of 6/2018) through a private hauler (WM or Republic Services). These municipalities include:

- Aleppo Township
- Aspinwall Borough
- Baldwin Boro
- Bellevue Boro
- Ben Avon Boro
- Bradford Woods
- Bridgeville Boro
- Churchill Borough
- Crafton Boro
- Crescent Township
- Dormont Boro
- Duquesne City
- Edgewood Borough
- Elizabeth Township
- Etna Boro
- Forest Hills Boro
- Franklin Park Boro
- Glassport Boro
- Sewickley Boro
- Shaler Township
- Sharpsburg Boro
- Tarentum Boro
- Versailles Boro
- West Elizabeth Borough
- West View Boro
- Glenfield Borough
- Hampton Township
- Indiana Township
- Ingram Borough
- Leet Township
- McCandless Town
- McKees Rocks Boro
- Millvale Boro
- Moon Township
- Neville Township
- O'Hara Township
- Ohio Township
- Penn Hills (e-waste Only)
- Pennsbury Village Boro
- Pitcairn Borough
- Plum Borough
- Robinson Township
- Ross Township

The Waste Management program allows subscribers to contact WM to request a kit and schedule a pick-up date for curbside collection of paints, automotive products, garden, household, and pool chemicals, electronics and universal wastes. As part of the program, residents place the HHW materials in designated containers and/or place stickered items outside on the designated collection day. Information on the “At your Door” program can be found at <http://www.wmatyourdoor.com/public-access/household-materials-pickup-.aspx>.

The Republic Services program allows residents to call a toll free number to request a kit containing a forty-two (42) gallon clear bag with packaging instructions, at which time the resident will be given a collection date. Residents may place various HHW materials such as paints, oils, automotive products, pesticides, mercury, batteries, and bulbs, and e-waste including televisions, computers, printers, computer peripherals, and audio and video equipment at the curb for collection by Republic Services. Information on the program can be found at <http://www.shaler.org/219/Hazardous-Waste-E-Waste>.

HHW

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, as well as some municipal drop-off locations.

The PRC and Allegheny County conducted three (3) HHW collections in 2017. The events are typically held from 9:00 AM – 1:00 PM, rain or shine. At the 2017 collections, the PRC accepted aerosol cans, automotive fluids, batteries, chemistry sets, CFL bulbs, gasoline and kerosene, small propane cylinders, household cleaners, mercury, paint products, pesticides and herbicides, photo chemicals, and pool chemicals. These items were accepted for a fee of \$3 per gallon.

Many items that fall under the definition of HHW can be recycled by appointment at the ECS&R location in Evans City, PA, approximately forty (40) miles north of Pittsburgh, as well as the ECS&R one-day collection events. This material includes oil based and latex paint, flammable liquids, deck stains, drain cleaners, fertilizers, pool chemicals, antifreeze and motor oil, adhesives, wood and metal finishing products, household cleaners, fluorescent lamps, CFL bulbs, all batteries, herbicides and pesticides, and electronics (VCR's, TV's, 8 Tracks, Desktop Computers, etc.).

In 2016, WM collected approximately 24 tons of HHW material through their curbside collection program in Allegheny County.

In 2016, Republic Services collected approximately 11 tons of HHW material through their curbside collection program in Allegheny County.

E-Waste

Electronic waste contains metals that, if not properly managed or contained, can become hazardous wastes.

Table 4-1
Residential and Commercial E-Waste Recycling Tonnage for 2011-2016¹

	2011	2012	2013	2014	2015	2016
Residential	617	1,150	703	491	943	897
Commercial	-	-	110,108	1,180	1,682	1,441

¹Tonnage provided by ACHD. These tonnages are inclusive of the one-day collection events held by the PRC and those tonnages reported to the County Health Department by municipalities.

The ACHD currently collaborates with PRC to hold hard-to-recycle collection events. In 2017, five (5) events were held throughout the County. Residents were able to bring items such as CPU (towers), laptops, mice, keyboards, cell and home phones, tablets, PDAs, UPS/servers, routers, modems, web and digital cameras, VCR/DVD players, paper shredders, clock radios, stereos, microwaves, printers, copiers, fax machines, scanners, zip drive, electronic cables video game consoles, expanded polystyrene packaging material, compact fluorescent light bulbs to these events at no cost. The PRC also accepted computer monitors for a fee of \$20, televisions for a fee of \$30, and projection or console TVs for a fee of \$40. For additional fees, PRC accepted alkaline batteries, CDs, DVDs and floppy discs, fluorescent tubes, small Freon appliances, small kitchen appliances, stereo speakers, and tires (car/truck) both with and without the rim.

Hard drive data destruction verification is also done at collection events. Information on the PRC events may be found at <http://prc.org/programs/collection-events/hard-recycle-collections/west/>.

In 2016, ECS&R hosted approximately 80 one-day collection events that included the collection of e-waste material in western Pennsylvania.

In 2016, WM collected nearly 270 tons of e-waste material through their curbside collection program in Allegheny County.

In 2016, Republic Services collected over 96 tons of e-waste material through their curbside collection program in Allegheny County.

Based on the volume of HHW and e-waste material received at the one-day collection events, the County has employed B&L to conduct a feasibility study to investigate the options for increased HHW and e-waste collection on a more year-round basis. Additionally, the SWAC determined HHW and e-waste collection and recycling is a critical issue in Allegheny County. The results of the HHW and e-waste feasibility study are discussed in Chapter 5.

4.2 Amount of Materials Recycled

Current recycling activities within Allegheny County have a significant impact on the amount of solid waste being disposed of by the County. A total of approximately 499,000 tons of Allegheny County recyclable material was reportedly diverted from the waste stream and recycled in 2016. Of the 499,000 total tons of recyclable material diverted from the waste stream in 2016, approximately 364,000 was from the commercial sector. As shown in Table 3-4, the County's recycling rate was 32% in 2016. The recycling rate is calculated by dividing the recyclables tonnage total for both the residential and commercial sector (as reported to Allegheny County) by the total tons of MSW, C&D and recyclables disposed for a given year (from PADEP Waste Destination Reports, Out-of-State tonnage reports and recyclables tonnage reports submitted to the County). The recyclables tonnage total includes 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 (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 (i.e. antifreeze, batteries, e-waste, lightbulbs, oils, etc.)
- Tires
- C&D material
- Clothing/textiles
- Asphalt shingles
- Organics (food, wood, leaf and yard waste)

This diversion rate is projected to remain steady if new recycling initiatives are not adopted.

Per Capita Recyclables Diversion Rate

As presented in Table 3-4, the recycling rate for Allegheny County in 2016 was 32%. The average recycling rate over the past four years was 30%. The amount of material

recycled or otherwise diverted from disposal in Allegheny County has remained consistent between 2010 and 2016, at approximately 446,000 TPY. There was a significant increase in reported recyclables in 2016 (approximately 499,000 tons) when compared to previous years (approximately 410,000 tons). It is assumed that Allegheny County recycles more than the reported tonnage annually, but that recycling tonnages are not always reported to the municipal Recycling Coordinator for submission to the County Recycling Coordinator and subsequent input into the Re-TRAC system. The majority of recyclables collection and processing in Allegheny County is managed by the private sector, thus requiring municipalities and/or the County to obtain the recycling tonnages from private industry for accurate reporting.

Based on the year 2010 U.S. Census population, the average per capita diversion rate for recyclables and organics, reported to Allegheny County, is approximately **0.37 tons per capita per year**. The national average per capita recyclables diversion rate is 0.27 tons per capita per year (1.5 pounds per capita per day). Based on the data over the past several years, Allegheny County residents are recycling more than the national average annually.

The recycling projections calculated in Table 3-4 were computed based on the per capita recyclables/ organics diversion rate of 0.37 tons per capita per year; with a steady growth rate of recycling factored in over the 10-year planning period. This assumption is believed to be valid as cost-effective recycling programs can be developed and implemented with the assistance of the ACHD. It is anticipated that recycling will steadily increase from 30% in 2017 to 35% in 2028.

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 that had initiated a recycling program or from the private sector waste hauling firm providing the recycling service.

In 2001, PADEP retained R.W. 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. R.W. Beck completed the study in April 2003. The Southwest regional data was utilized for the Plan Update.

An examination of the data from the R.W. 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, many factors determine which materials are 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 State Waste Composition Table located in Appendix G, presents an estimate of the current composition of the discarded municipal waste stream (after source separation) by material and an estimate of the potential remaining tons of recyclables in the discarded waste stream, according to the 2003 RW Beck Statewide Study. The National Waste Composition Table located in Appendix G presents an estimate of the current composition of the discarded municipal waste stream (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 2014 Fact Sheet, written in November 2016. These two 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 10-year planning period.

This information shows that there is 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/or increase and improve their recycling education.

In order to reach the State's recycling goal of 35%, Allegheny County will need to increase their recycling tonnages annually, while decreasing the amount of waste landfilled each year. Based on their current diversion rate, projected over the 10-year planning period, Allegheny County will need to increase their recycling tonnage by approximately 75,000 tons over the 10-year planning period to reach 35% recycling. B&L evaluated the current waste stream using the waste composition study developed by both R.W. Beck and EPA. The waste composition studies showed that an estimated 300,000 tons of paper products are available for capture in the current waste stream and may currently be disposed of at a waste disposal facility. It was estimated that approximately 150,000 tons are realistically recyclable with today's current commodity markets. This material includes newspaper, corrugated cardboard, and office paper. Corrugated cardboard was estimated to make up over 69,000 tons of material disposed each year instead of recycled, according to the R.W. Beck study. Although the markets are fluctuating with cardboard and paper, it is the recommendation of this plan to investigate retrieval of this recyclables commodity, being cognizant of the contamination of the material stream, prior to investigating other recyclables markets that require a larger capital expenditure.

The ACHD and the County Recycling Coordinator are striving to enhance the recycling programs in Allegheny County to address resident's needs. The ACHD, in coordination with the Allegheny County SWAC members, have compiled a list of initiatives, goals and programs that may be developed in order to try to enhance and sustain the recycling programs, as well as identify options for residents that do not have convenient access to recycling programs. These programs, efforts and goals are included in Chapter 5.

The SWMP is providing the tools (via ordinance templates) to expand optional curbside recyclables collection programs for private "subscription" customers to other municipalities in Allegheny County. If curbside recyclables collection programs, in non-mandated communities, increase across Allegheny County, the county recycling rate may increase over time.

Additionally, B&L has provided information on a sample key-card program, discussed in detail in Chapter 5, which would bring drop-off recycling to residents in communities where curbside collection may not be feasible, as well as allow the retrofit of existing public drop-off locations to a more sustainable drop-off model.

In summary, recycling programs and practices in Allegheny County are overall successful, which is reflected in the amount of residents with convenient access to recycling collection and the recycling rate of the County. However, SWAC members have expressed a need for more recycling of hard-to-recycle items such as HHW material and e-waste. Additionally, in order to reach the State's recycling goal of 35%, the County will have to increase recycling of material annually to take approximately 75,000 tons of material out of the waste stream and recycle this material instead. The next section of this report addresses future recycling projections.

Recyclables Reported

Information regarding the amount of material being recycled in commercial, industrial, institutional and apartment complex programs may be inaccurately reported, since a comprehensive record of recycling from those sectors requires that each individual establishment or the collector provide complete, accurate information. This problem needs to be addressed by the municipalities, and is a requirement that is difficult to enforce. With municipal staff shortages, it is difficult to "chase" recycling data. Establishing a method to accurately and quickly obtain recycling tonnages from commercial industries, athletic complexes, local fairs and festivals, and local collection events will increase the recycling tonnages reported to Allegheny County annually. This will result in a more accurate understanding of the recycling efforts currently in place in Allegheny County. This is a difficult task, as obtaining these numbers requires time spent by an employee of the municipality or County to contact organizations, businesses, etc. to gather their recycling data.

Businesses and institutions can be encouraged to reassess their efforts and expand recycling programs where it is economically feasible. Such entities that are located in municipalities that are not mandated can still be encouraged to implement programs where it makes economic business sense. Allegheny County staff and/or municipal staff currently obtain recycling tonnage totals from commercial establishments within their community. PROP has generated Forms (Form 11, Form 12 and Form 13) to be used by commercial, municipal, institutional, waste and/or recycling haulers, document

destruction companies, and other companies transporting recyclables. Copies of the Forms are included in Appendix I. Form FM-11 is used by commercial, municipal or institutional establishments that recycle. Form FM-12 is used by waste and/or recycling haulers, a document destruction company, a retail establishment with multiple store locations, a broker, a processor, or other company transporting recyclables generated in Allegheny County. Form FM-13 shall be completed by a waste and/or recycling haulers, a document destruction company, a retail establishment with multiple store locations, a broker, a processor, or other company transporting recyclables generated in Allegheny County.

4.3 Existing Material Recovery and Reuse Operations

In the past two decades, communities and businesses in Allegheny County have made notable strides in reducing the amount of municipal waste requiring disposal. Sixty-four (64) of the one hundred thirty (130) municipalities have implemented a curbside recyclables collection program, thirteen (13) municipalities have either initiated recyclables drop-off programs for the benefit of their residents and businesses or have access to privately or publicly operated drop-offs, while twenty-two (22) municipalities have curbside and drop-off programs. The remaining thirty-one (31) municipalities have no municipally managed recycling program or access to privately owned drop-off facilities. Table 4-4 lists the materials that are accepted by drop-off programs in Allegheny County, as reported by the municipalities.

There are additional collection facilities throughout Allegheny County and the surrounding Counties that take hard-to-recycle items. A robust listing may be found in the Recycling Resource Directory on the ACHD's website:

http://www.county.allegheny.pa.us/uploadedFiles/Allegheny_Home/Health_Department/Programs/Waste- and Water-Related/Recycling/Recycling_Resource_Directory.pdf

4.3.1 Recyclables Processing Facilities

There are currently six (6) MRFs located in Allegheny County, according to PADEP's website and ACHD information. They are listed in Table 4-2 below.

Table 4-2
MRFs Located in Allegheny County

Facility	Open to the General Public	What Forms of Materials are Accepted	Materials Accepted
WM Pittsburgh 4100 Grand Avenue Pittsburgh, PA 15225	No	Single Stream	Plastics 1&2, 3 colors of glass, tin and aluminum cans, newspaper, magazines, office paper and cardboard, aseptic/gable top cartons
Recycle Source LLC 50 Vespuccius Street Pittsburgh, PA 15207	No	Single Stream	Plastics 1&2, 3 colors of glass, tin and aluminum cans, newspaper, office paper, magazines and cardboard, hardback books, phone books, and scrap metal
Dlubak Glass Company 1600 Saxonburg Road Natrona Heights, PA 15065	Yes	Source Separated and Clean	3 colors of glass and clean, fluorescent light bulbs, pre-consumer plate glass, and car windshields
Royal Oak Recycling 4830 Grand Avenue Neville Island, PA 15225	Yes	Source Separated	Aluminum, newspaper, magazines, junk mail, cardboard, paperboard, hard/soft cover books, plastic #1-#7
Stanson Paper Processing, LLC. 876 R. I. Lampus Avenue Springdale, PA 15144	Yes	Source Separated	Newspapers, magazines, corrugated cardboard, and office paper
Gateway Recycling 28 Summit Park Drive Pittsburgh, PA 15275	No	Source Separated	Office paper, printer components, and corrugated cardboard

4.3.2 Organics Management Facilities in Allegheny County

There are currently twenty-nine (29) public and private yard waste composting and recycling facilities located in Allegheny County. Table 4-3 lists these facilities and their location.

**Table 4-3
Allegheny County Yard Waste Composting Sites**

ID	Facility	ID	Facility
1	AgRecycle Compost Farm Route 908 , Tarentum, PA 15084	16	Churchill Borough/Forest Hills William Penn Hwy & Rodi Road Pittsburgh, PA 15235
2	Chelse's Greenhouse 925 Boyds Ln, Elizabeth, PA 15037	17	Dickson Park Aberdeen Road, Pittsburgh, PA 15218
3	Crafton Borough 199 Ewing Rd, Pittsburgh, PA 15205	18	Fairhaven Park Fairhaven Road, Coraopolis, PA 15108
4	Edgeworth Borough 601 Ohio River Blvd, Edgeworth, PA 15037	19	Greenwood Cemetery 321 Kittanning Pike, Pittsburgh PA 15215
5	Greentree Borough 911 Greentree Rd, Pittsburgh PA 15220	20	Hunter Field Hunter St, Pittsburgh, PA 15221
6	Harrison Hills Park Freeport Rd, Natrona Heights, PA 15065	21	John Meinert 335 Dorseyville Rd, Pittsburgh PA 15215
7	JA Rutters 4917 Old William Penn Hwy, Monroeville PA 15146	22	Linhart Park James Street, Turtle Creek PA 15145
8	Leetsdale Borough 13 Ferry St, Leetsdale, PA 15066	23	Monroeville Public Works 200 Starr Dr, Monroeville, PA 15146
9	Meinert Brothers 325 Dorseyville Rd, Pittsburgh PA 15215	24	Mt. Lebanon Golf Course 1000 Pine Ave, Pittsburgh PA 15243
10	Moon Park 1350 Ewing Rd, Caraopolis PA 15108	25	Penn Hills Leaf Compost Universal Park Memorial Park Dr, Pittsburgh PA 15235
11	North Park Compost Walters Road	26	Robb Hollow Park Robb Hallow Rd, Pittsburgh, PA 15243
12	Plum Boro Yard 4575 New Texas Rd, Pittsburgh, PA 15329	27	South Hills Compost 401 Curry Hallow Rd, Pittsburgh, PA 15236
13	Robinson Twp 5001 Leona Dr, Caraopolis, PA 15108	28	White Oak Compost 1606 Lower Heckman Rd, White Oak, PA 15131
14	USC Facility Old Boyce Rd, Pittsburgh, PA 15241	29	Wood Waste Recycling 111 Kelso Rd, McDonald PA 15057
15	Wood Waste – Prestley 41 Prestley Rd, Bridgeville, PA 15017		

4.3.3 Recyclables Drop-off Sites

There are currently sixty-four (64) public and private drop-off sites for Act 101 and other various recyclable material within Allegheny County. The drop-off sites are listed below in Table 4-4.

Table 4-4
Materials Accepted By Drop-Off Facilities in the Area (As reported to ACHD in 2016)

FACILITY	LOCATION	HOST ORGANIZATION	MATERIALS ACCEPTED	RESIDENTS ONLY
ABC EZ Containers	1000 Island Avenue, McKees Rocks		Glass, metal	
Blueberry Hill Park	1604 Blaine's Way, Sewickley	Franklin Park Borough	Yard Waste	Yes
Boyce Park Four Season's Lodge	Boyce Park, Pittsburgh	Allegheny County	Paper, plastics, and cans	
Boyd Roll-Off Service	1200 McKee Street, McKees Rocks		Glass, paper, metal, aluminum, cardboard, newspaper, plastic	
Brentwood Borough	3624 Brownsville Road, Pittsburgh	Brentwood Borough	Mixed paper	
Chalfant Paper Drop-Off	144 Lynnwood Avenue, East Pittsburgh	Chalfant Borough	Mixed paper	
Churchill Drop-Off	2300 William Penn Highway, Pittsburgh	Churchill Borough	Mixed paper	
Churchill Municipal Building	2531 Greensburg Pike, Pittsburgh	Churchill Borough	Mixed paper	
City of McKeesport	Railroad Street, McKeesport	McKeesport City	Glass, paper, and metal cans	
City of Pittsburgh Drop-Off Site	1330 Hassler Street, Pittsburgh	Pittsburgh City	Paper, glass, plastic, metal containers, and yard waste	Yes
City of Pittsburgh Drop-Off Site	214 N. Lexington, Pittsburgh	Pittsburgh City	Paper, glass, plastic, metal containers, and yard waste	Yes
City of Pittsburgh Drop-Off Site	3100 Railroad Street – Strip District, Pittsburgh	Pittsburgh City	Paper, glass, plastic, and metal containers	No
City of Pittsburgh Drop-Off Site	40 Melancton Avenue, Pittsburgh	Pittsburgh City	Paper, glass, plastic, metal containers, and yard waste	Yes
City of Pittsburgh Drop-Off Site	6814 Hamilton Avenue, Pittsburgh	Pittsburgh City	Paper, glass, plastic, metal containers, and yard waste	Yes
City of Pittsburgh Drop-Off Site	Mathews Ave, Pittsburgh	Pittsburgh City	Single Stream	No
Crescent Township	225 Spring Run Road	Crescent Township	Mixed paper	
Duncan Volunteer Fire Hall	Duncan Avenue, Pittsburgh	Hampton Township	Single stream and cardboard	
East McKeesport Drop-Off	500 Block Street, McKeesport	East McKeesport Borough	Paper, cardboard, plastics, and glass	

Table 4-4
Materials Accepted By Drop-Off Facilities in the Area (As reported to ACHD in 2016) – Continued

FACILITY	LOCATION	HOST ORGANIZATION	MATERIALS ACCEPTED	RESIDENTS ONLY
Edgeworth Borough Drop-Off	101 Chestnut Road, Edgeworth	Edgeworth Borough	Paper, glass, cardboard, and cans	Yes
Emsworth Borough	4 Western Avenue, Pittsburgh	Emsworth Borough	Newspapers	
Fire Company #4	4370 Northern Pike, Monroeville	Monroeville Municipality	All recyclables	
Forest Hills Public Works Garage	2071 Ardmore Boulevard	Forest Hills	Yard Waste	Yes
Franklin Park	2344 West Ingomar Road, Pittsburgh	Franklin Park Borough	Cardboard	Yes
Green Tree Borough Drop-Off Site	833 Poplar Street, Pittsburgh	Green Tree Borough	Commingled, paper, and cardboard	Yes
Hampton Public Works Garage	3103 McCully Road, Hampton Township	Hampton Township	Single stream and cardboard	
Hampton Swimming Pool Drop-Off	3103 McCully Road, Hampton Township	Hampton Township	Single stream and cardboard	
Harrison Township	Municipal Drive, Natrona Heights	Harrison Township	Cardboard and mixed paper	
Our Lady of the Most Blessed Sacrament Church	800 Montana Ave, Natrona Heights, PA 15065	Harrison Township/Stanson Paper Processing L.L.C	Newspaper, Magazines, Corrugated Cardboard, Office Paper, Junk mail and premiums paid for Baled Cardboard	
Imperial Landfill	11 Boggs Road, Imperial, PA 15126	Republic Services	Paper, Cardboard, Plastic, Metals, and Glass	
Jefferson Hills	925 Old Clairton Road, Jefferson Hills	Jefferson Hills	Single stream	
Kelly Run Sanitation Landfill	Route 51 South, Elizabeth, PA 15037	WM	Newspaper, Cardboard, Plastic, Tin cans, Aluminum and Glass Bottles	
Liberty Borough	2921 Liberty Way, McKeesport	Liberty Borough	Mixed paper	

Table 4-4
Materials Accepted By Drop-Off Facilities in the Area (As reported to ACHD in 2016) – Continued

FACILITY	LOCATION	HOST ORGANIZATION	MATERIALS ACCEPTED	RESIDENTS ONLY
Marshall Township Drop-Off	525 Pleasant Hill Road, Mars	Marshall Township	Cardboard	Yes
McCandless Cardboard Drop-Off	9955 Grubbs Road, Wexford	McCandless Township	Cardboard	Yes
Michael Brothers Hauling Transfer Station	5331 McAnulty Road, Pittsburgh		Glass, paper, metal, aluminum, cardboard, newspaper, and plastic	
Monroeville Drop-Off	500 Garden City Drive, Monroeville	Monroeville	All recyclables	
Monroeville Drop-Off	600 Gateway Campus Boulevard, Monroeville	Monroeville	All recyclables	
Monroeville Landfill	600 Thomas Street, Monroeville	WM	Glass, plastic, and metal	
North Park Rose Barn Parking Lot	Pearce Mill Road, McCandless	Allegheny County	Paper, plastic bottles, and metal cans	
North Park Swimming Pool Parking Lot	South Ridge Road, Port Angeles	Allegheny County	Paper, plastic bottles, and metal cans	
North Versailles	1401 Greensburg Avenue, North Versailles	North Versailles Township	Newsprint, office paper, and junk mail	
Penn Waste Transfer Station	149 Nichol Avenue, Stowe Township		Cardboard, newspaper, magazines, office paper, plastic containers and bottles, metal, aluminum, cartons, glass	
Pine Township	230 Pearce Mill Road, Wexford	Pine Township	Mixed paper	Yes
Port Vue Borough	1191 Romine Avenue, McKeesport	Port Vue Borough	Paper and aluminum	
Reserve Paper Recycling	3610 Mount Troy Road, Pittsburgh	Reserve Township	Mixed paper	
Reserve Park Transfer Station	408 Hoffman Road, Pittsburgh		Glass, paper, metal, aluminum, cardboard, newspaper, and plastic	
Shaler Cardboard Drop-Off	300 Wetzel Road, Glenshaw	Shaler Township	Cardboard	Yes
Sharpsburg	1611 Main Street, Pittsburgh	Sharpsburg Borough	Single stream	

**Table 4-4
Materials Accepted By Drop-Off Facilities in the Area (As reported to ACHD in 2016) – Continued**

FACILITY	LOCATION	HOST ORGANIZATION	MATERIALS ACCEPTED	RESIDENTS ONLY
South Hills Landfill	3100 Hill Road, South Park	WM	Newspaper, Cardboard, Plastic, Tin cans, Aluminum and Glass Bottles	
South Park – County Drop-Off	Sesqui Drive	Allegheny County	Paper, plastics, and cans	
South Park Golf Course	Buffalo Drive	Allegheny County	Paper, plastics, and cans	
South Versailles Township Drop-Off Site	Railroad Street, Pittsburgh	South Versailles Township	Mixed paper	
St. Agela Merici RC Church	1640 Fawcett Avenue, White Oak	White Oak Borough	Mixed paper	
Train Station – Hay Street	Hay Street, Pittsburgh	Wilksburg Borough	Cardboard, glass, aluminum, and office paper	
Verona Drop-Off	736 East Railroad Avenue	Verona	Mixed paper and aluminum cans	
Versailles Borough Drop-Off Site	4822 Second Street, McKeesport	Versailles Borough	Mixed paper	
VFC #3	109 Powell Street, East Pittsburgh	Wilkins Township	Mixed paper	
VFC #4	Frazier Drive, Pittsburgh	Wilkins Township	Mixed paper	
West Homestead	456 West 8th Avenue, Homestead	West Homestead	Paper, plastics, aluminum, and cardboard	
West Homestead	Calhoun Community Park, Fieldstone Drive	West Homestead	Paper, plastics, aluminum, and cardboard	
White Oak Athletic Association	McKee & Lower Heckman Rd.	White Oak Borough	Mixed paper	
White Oak Borough Municipal Building	2280 Lincoln Way	White Oak Borough	Mixed paper	
Wilkins Township Municipal Building	110 Peffer Road, Turtle Creek	Wilkins Township	Mixed paper	
Wilksburg	789 Penn Avenue, Pittsburgh	Wilksburg Borough	Cardboard, glass, aluminum, and office paper	Yes
Wilksburg Dept. of Public Works Garage	Park Avenue, Pittsburgh	Wilksburg Borough	Cardboard, glass, aluminum, and office paper	Yes

Source: Allegheny Health Department, November 2017

4.3.4 Other Private Regional Facilities

There are a number of operations in or near the county accepting and processing electronics, HHW, and C&D waste materials in addition to the County/PRC/DEP funded collection events, as well as other hard-to-recycle materials.

A comprehensive list of the recyclable materials accepted and collected by various private recyclers in Allegheny County is maintained by the Allegheny County Health Department and located in the Recycling Resource Directory on the ACHD's website: <http://www.county.allegheny.pa.us/Health-Department/Programs/Waste--and-Water-Related/Solid-Waste-Management-and-Recycling/Recycling.aspx>

Additionally, a resource for both ACHD and municipalities may be surrounding County Recycling Coordinators and PADEP Regional Planning Coordinators. Up to date contact information is maintained on PADEP's website at the following location: <http://www.dep.pa.gov/Business/Land/Waste/Recycling/Municipal-Resources/Pages/Recycling-Coordinators-Corner.aspx>

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.

There are several reuse facilities located in Allegheny County. These facilities allow residents to bring material that they no longer want to their facility and allows others in Allegheny County to purchase this material. Materials range from arts and crafts supplies to pet supplies to furniture. It's a wonderful initiative to keep usable items out of the landfill and give these products another life. The facilities located in Allegheny County can be found in the Allegheny County Recycling Resource Guide.

4.4 Summary of Municipal Recycling Programs

The 2010 U. S. Census figures indicate that there are fifty-seven (57) municipalities within the County with greater than 10,000 people or with greater than 5,000 people and with a population density greater than 300, thus mandated to implement recycling

programs. Six (6) municipalities may trigger the population thresholds during this planning horizon. These municipalities include Avalon Borough, Glassport Borough, Green Tree Borough, North Braddock Borough, Ohio Township, and Tarentum Borough.

There are currently ninety-nine (99) municipalities with residential access to (both public and private) recyclables collection. Over 50% of the collected and reported residential recyclables tonnages come from municipalities with a recyclables drop-off location. Out of the one hundred and thirty (130) municipalities in Allegheny County, thirty-one (31) municipalities do not currently offer their residents recycling through curbside recycling and/or drop-off locations. It is recommended that these municipalities consider contracting for curbside collection of recyclables and/or consider the development of a drop-off location during the 10-year planning period. Prior to contracting for service, it is recommended that municipalities discuss their contracts with the County Recycling Coordinator to ensure that the materials included in the contract match those materials currently accepted at the MRFs and/or accepted by current market conditions. These programs may be implemented independently or as a municipal partnership (discussed further in Chapter 5). Appendix I contains sample bid documents that a municipality can use if it chooses to bid for waste, recycling, or combined (bundled) collection services.

Based on the responses from the municipal surveys, twenty-six (26) municipalities responded that they collect leaf and yard waste via municipally operated drop-off centers or curbside collection, twenty (20) municipalities reported that they compost this material on municipal property, and ten (10) other municipalities reported that they haul their leaf and yard waste for composting elsewhere.

Although there are fifty-seven (57) mandated communities in Allegheny County which require commercial, institutional and retail establishments to recycle, the other seventy-three (73) non-mandated municipalities in the County shall 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 or the ACHD, or to visit the ACHD website at:

<http://www.county.allegheny.pa.us/healthdepartment/index.aspx> to obtain information regarding recycling, solid waste management, Ordinance No. 16782 (Subpart 5, Section 2105.50) regarding open burning, and helpful guidelines for the proper disposal of many types of waste and recyclables materials.

Table 4-6, located at the end of this chapter, lists the municipalities in Allegheny County, the type of residential recycling program used in each municipality in 2016, and the materials collected by the program.

The future recycling program will continue to use 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. Future development of additional drop-off locations for Act 101 recyclables and permanent collection facilities for HHW, e-waste and other hard-to-recycle items, is a goal of the SWMP, contingent on economic support and political will.

4.5 Changes in Act 101 and Impact of These Changes on the County

Act 101 (P.L.556), originally enacted on July 28, 1988, was amended via the implementation of Act 140 (House Bill No. 1902, session of 2005, as amended on 9/27/06). This amendment created a series of changes, including extension of the sunset date for the recycling fee to January 1, 2012 (later amended to sunset January 1, 2020). Notable among the other changes, were specific changes to Section 2, with respect to Section 904 (a) and (b), regarding performance grants for municipal recycling programs. Among other requirements, the amendment expanded the level of documentation required to be included with the applicant's recycling and composting grant request submission, and this affected funding received by municipalities beginning in 2007.

Under Section 2(d)(4) of Act 140, the amendment noted that all mandated municipalities and any non-mandated municipality receiving more than \$10,000 in funding must demonstrate to PADEP's satisfaction that they "...have met the following performance requirements:

- requires, through ordinance, that all residents have waste and recycling service
- has an implemented residential recycling program and facilitates a commercial recycling program or participates in a similar county or multi-municipal program
- has a residential and business recycling education program

- has a program of enforcement that periodically monitors participation, receives complaints and issues warnings for required participants and provides fines, penalties, or both, in its recycling ordinance
- has provisions, participates in a county or multi-municipal program or facilitates a private sector program for the recycling of special materials
- sponsors a program, facilitates a program or supports an organization to address illegal dumping and/or littering problems
- has a person or entity designated as recycling coordinator who is responsible for recycling data collection and reporting recycling program performance in the municipality or municipalities."

Section 2(d)(5) goes on to say that "If the requirements of paragraph (4) are not satisfied by the municipality, then the grant funds awarded under this section shall be expended by the municipality only to satisfy the requirements of paragraph (4)." Section 2(e) of Act 140 states that "The Department may require budget documents or other expenditure records and may deny funding through this section if an applicant cannot demonstrate that funds have been expended on eligible activities."

Act 40 (House Bill No. 118) amended Act 101 to remove the sunset date for the \$2 recycling fee and maintain the Recycling Fund established in Act 101. Governor Wolf signed the bill into law on October 30, 2017.

4.6 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 our environment based on Allegheny County's 2016 Recycling Report Summary. The WARM model calculates various

savings based on the tonnages of materials recycled. Appendix G contains the result tables of the EPA WARM model evaluation.

The County's 2016 total recycling efforts provided environmental benefits that were the equivalent of the following estimated resource consumption savings and pollution reductions:

- A net reduction in GHG emissions by 1,047,784 MTCO₂E or 285,759 MTCE;
- A reduction in the net energy consumption by 6,044,964 million BTUs;
- Conserving 1,040,441 barrels of oil;
- Conserving 48,656,283 gallons of gasoline;
- Reducing the annual emissions from 220,586 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);
- Conserving 5,618 railway cars of coal

4.7 Allegheny County 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. As indicated in Table 3-4, the recycling rate in Allegheny County has averaged approximately 30% over the last four (4) years. As such, Allegheny County has reached the initial state goal of 25%, but continues to work towards the state goal of 35%.

A trend in packaging is 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 (i.e. 30%) is becoming of less importance than just taking steps to optimize recycling, where practical. Even maintaining a 30% recycling rate over time may require increased recycling of lighter materials.

In an effort to increase recycling, Allegheny County may want to focus on strategies designed to expand or supplement existing recycling programs and to improve current data collection efforts. Allegheny County shall support, promote and conduct recycling programs such as the HHW and e-waste collection programs, whenever feasible. Furthermore, Allegheny County may want to provide advice to municipalities developing

or expanding programs such as the establishment of yard waste collection (woody materials), curbside recycling collection, food waste collection, or establishing a recyclables drop-off facility.

Allegheny County has a significant number of professional teams and universities, all of which have a constant attendance of in and out of County residents. Over the 10-year planning period, it is recommended to outreach to these entities to develop recycling programs/tonnage reporting that can easily be recreated year after year. Establishing successful source reduction and recycling programs at the athletic complexes and universities will aid in increasing the recycling rate of the County. Additionally, assuring proper reporting of this material to the County is an important part of the program's success.

Another strategy to further boost diversion is to encourage municipalities without recycling services to implement drop-off or curbside recycling programs. Allegheny County will provide technical assistance to help these municipalities if they choose to initiate drop-off programs or, if there is sufficient interest, curbside collection programs. Municipal partnerships are greatly encouraged to increase the success of the programs economics.

Previous estimates from the County show that most of the Act 101 materials are collected, even if in modest amounts, at the sixty-four (64) publicly and privately operated drop-off facilities. Newspapers, magazines and catalogs, office paper, mixed paper, cardboard, glass, plastic bottles, and aluminum and metal cans are collected in most of the drop-off programs.

The types and amounts of materials recycled by both the residential and commercial sector during the past seven (7) years (2010-2016) are presented in Table 4-5, with special reference to those recycled materials that have been targeted by the PADEP in Act 101, including: #1 - #5 plastics, yard and leaf waste, aluminum and bi-metal cans, glass (brown, green and clear), mixed grades of paper, office paper, OCC and chipboard, and newsprint. Other recyclable materials are summarized below in the "non-Act 101 materials" category.

Table 4-5
Allegheny County Materials Recycled (in Tons)

Type	2010	2011	2012	2013	2014	2015	2016
Act 101 Materials	234,567	223,140	248,762	231,956	230,814	270,650	392,952
Non-Act 101 Materials	123,884	100,979	113,477	239,715	173,927	138,929	106,258
Recycling Totals	358,451	324,119	362,239	471,671	404,741	409,579	499,210

The table shows a steady rate of recycling diversion between 2010 and 2016. The table shows 2016 had the highest recycling diversion rate over the past seven (7) years.

As discussed in Section 4.2, it is anticipated that Allegheny County's recycling rate will increase from 32% in 2016 to 35% by 2028, if the County/municipalities implement more recycling programs directed toward corrugated cardboard recycling, HHW and e-waste recycling. Table 3-4 reflects these growing recycling tonnage projections.

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 containers used to collect recyclables curbside, it costs money to collect and transport those recyclables to a transfer station or 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. These factors often deter Counties from collecting and processing their own recyclables. Allegheny County largely relies on the private sector to collect and process recyclables from the County residents and businesses, due to economic and logistic factors. As noted in Chapter 5, it is recommended that future recycling programs be 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 the facility 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 comes from Ordinances or Contracts developed by the entity.

It is expected that if Allegheny County is able to facilitate the growth of recycling programs (like the establishment of new drop-off sites or HHW/e-waste collection facilities), and can help implement other recycling initiatives (such as optional curbside recycling collections in non-mandated municipalities, and increased paper recycling at commercial businesses and industrial parks), Allegheny County's recycling rate may indeed increase over the 10-year planning period from the current estimated 32% rate to 35% rate.

**Table 4-6
Municipal Recycling Programs (as of 2017)**

MUNICIPALITY	POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	#1 PETE	#2,#7 HDPE
Aleppo Township	1,916	No	Curbside	x	x		x	x	x	x	x	x	x	x
Aspinwall Borough	2,801	No	Curbside	x			x	x	x	x	x	x		
Avalon Borough	4,705	No	Curbside											
Baldwin Borough	19,767	Yes	Curbside	x	x		x	x	x	x	x	x	x	x
Baldwin Township	1,992	No	None											
Bell Acres Borough	1,388	No	Curbside				x	x	x	x	x		x	x
Bellevue Borough	8,370	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Ben Avon Borough	1,781	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Ben Avon Heights Borough	371	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Bethel Park Borough	32,313	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Blawnox Borough	1,432	No	None											
Brackenridge Borough	3,260	No	None											
Braddock Borough	2,159	No	None											
Braddock Hills Borough	1,880	No	None											
Bradford Woods Borough	1,171	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Brentwood Borough	9,643	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Bridgeville Borough	5,148	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Carnegie Borough	7,972	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Castle Shannon Borough	8,316	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Chalfant Borough	800	No	Drop-Off			x								

**Table 4-6
Municipal Recycling Programs (as of 2017) – Continued**

MUNICIPALITY	POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUMI CANS	METAL CANS	NEWS PAPER	#1 PETE	#2,#7 HDPE
Cheswick Borough	1,746	No	None											
Churchill Borough	3,011	No	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Clairton City	6,796	Yes	Curbside				x	x	x	x	x	x	x	x
Collier Township	7,080	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Coraopolis Borough	5,677	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Crafton Borough	5,951	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Crescent Township	2,640	No	Drop-Off			x								
Dormont Borough	8,593	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Dravosburg Borough	1,792	No	None											
Duquesne City	5,565	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
East Deer Township	1,500	No	None											
East McKeesport Borough	2,126	No	Drop-Off	x	x		x	x	x	x				
East Pittsburgh Borough	1,822	No	Drop-Off			x								
Edgewood Borough	3,118	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Edgeworth Borough	1,680	No	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Elizabeth Borough	1,493	No	None											
Elizabeth Township	13,271	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Emsworth Borough	2,449	No	Curbside & Drop-off	x	x	x	x	x	x	x	x	x	x	x
Etna Borough	3,451	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Fawn Township	2,376	No	None											

**Table 4-6
Municipal Recycling Programs (as of 2017) – Continued**

MUNICIPALITY	POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	PETE #1	#2,#7 HDPE
Findlay Township	5,060	No	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Forest Hills Borough	6,518	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Forward Township	3,376	No	Drop-Off	x			x	x	x	x	x	x	x	x
Fox Chapel Borough	5,388	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Franklin Park Borough	13,470	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Frazer Township	1,157	No	None											
Glassport Borough	4,483	No	None											
Glen Osborne Borough	547	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Glenfield Borough	205	No	None											
Green Tree Borough	4,432	No	Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Hampton Township	18,363	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Hamar Township	2,921	No	None											
Harrison Township	10,461	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Haysville Borough	70	No	None											
Heidelberg Borough	1,244	No	None											
Homestead Borough	3,165	No	None											
Indiana Township	7,253	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Ingram Borough	3,330	No	Curbside	x	x	x	x	x	x	x	x	x	x	x

**Table 4-6
Municipal Recycling Programs (as of 2017) – Continued**

MUNICIPALITY	POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	#1 PETE	#2,#7 HDPE
Jefferson Hills Borough	10,619	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Kennedy Township	7,672	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Kilbuck Township	697	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Leet Township	1,634	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Leetsdale Borough	1,218	No	Curbside	x	x	x	x	x	x	x	x	x		
Liberty Borough	2,551	No	Drop-Off			x								
Lincoln Borough	1,072	No	None											
Marshall Township	6,915	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
McCandless Township	28,457	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
McDonald Borough	383	No	Curbside (Partial)											
McKees Rocks Borough	6,104	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
McKeesport City	19,731	Yes	Drop-Off				x	x	x	x	x	x	x	x
Millvale Borough	3,744	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Monroeville Borough	28,386	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Moon Township	24,185	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Mount Lebanon Township	33,137	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x

**Table 4-6
Municipal Recycling Programs (as of 2017) – Continued**

MUNICIPALITY	POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	PETE #1	#2,#7 HDPE
Mount Oliver Borough	3,403	No	None											
Munhall Borough	11,406	Yes	Curbside	x	x		x	x	x	x	x	x		
Neville Township	1,084	No	Curbside	x	x		x	x	x	x	x	x	x	x
North Braddock Borough	4,857	No	None											
North Fayette Township	13,934	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
North Versailles Township	10,229	Yes	Curbside & Drop-Off		x			x		x	x	x		
Oakdale Borough	1,459	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Oakmont Borough	6,303	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
O'Hara Township	8,407	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Ohio Township	4,757	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Penn Hills Township	42,329	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Pennsbury Village Borough	661	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Pine Township	11,497	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Pitcairn Borough	3,294	No	None											
Pittsburgh City	305,704	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Pleasant Hills Borough	8,268	Yes	Curbside	x			x	x	x	x	x	x	x	x
Plum Borough	27,126	Yes	Curbside	x	x		x	x	x	x	x	x	x	x

**Table 4-6
Municipal Recycling Programs (as of 2017) – Continued**

MUNICIPALITY	POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	PETE #1	#2,#7 HDPE
Port Vue Borough	3,798	No	Drop-Off		x					x				
Rankin Borough	2,122	No	None											
Reserve Township	3,333	No	Curbside & Drop-off	x	x	x	x	x	x	x	x	x	x	x
Richland Township	11,100	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Robinson Township	13,354	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	
Ross Township	31,105	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Rosslyn Farms Borough	427	No	Curbside	x			x	x	x	x	x	x	x	x
Scott Township	17,024	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Sewickley Borough	3,827	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Sewickley Heights Borough	810	No	None		x	x	x	x	x	x	x	x	x	x
Sewickley Hills Borough	639	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Shaler Township	28,757	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Sharpsburg Borough	3,446	No	Drop-Off	x	x	x	x	x	x	x	x	x	x	x
South Fayette Township	14,416	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
South Park Township	13,416	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x

**Table 4-6
Municipal Recycling Programs (as of 2017) – Continued**

MUNICIPALITY	POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	PETE #1	#2,#7 HDPE
South Versailles Township	351	No	Drop-Off			x								
Springdale Borough	3,405	No	None											
Springdale Township	1,636	No	None											
Stowe Township	6,362	Yes	Curbside & Droff-Off	x	x	x	x	x	x	x	x	x	x	x
Swissvale Borough	8,983	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Tarentum Borough	4,530	No	None											
Thornburg Borough	455	No	Curbside	x	x	x	x	x	x	x	x	x	x	x
Trafford Borough	61	No	None											
Turtle Creek Borough	5,349	Yes	Curbside		x	x	x	x	x	x	x	x	x	x
Upper Saint Clair Township	19,229	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Verona Borough	2,474	No	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Versailles Borough	1,515	No	Drop-Off			x								
Wall Borough	580	No	None											
West Deer Township	11,771	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
West Elizabeth Borough	518	No	None											

**Table 4-6
Municipal Recycling Programs (as of 2017) – Continued**

MUNICIPALITY	POPULATION	MANDATED	PROGRAM	CARDBOARD	OFFICE PAPER	MIXED PAPER	BROWN GLASS	CLEAR GLASS	GREEN GLASS	ALUM CANS	METAL CANS	NEWS PAPER	#1 PETE	#2,#7 HDPE
West Homestead Borough	1,929	No	Drop-Off	x	x	x	x	x	x	x	x	x	x	x
West Mifflin Borough	20,313	Yes	Curbside		x	x	x	x	x	x	x	x	x	x
West View Borough	6,771	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Whitaker Borough	1,271	No	None											
White Oak Borough	7,862	Yes	Curbside & Drop-off	x	x	x	x	x	x	x	x	x	x	x
Whitehall Borough	13,944	Yes	Curbside	x	x	x	x	x	x	x	x	x	x	x
Wilkins Township	6,357	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Wilkesburg Borough	15,930	Yes	Curbside & Drop-Off	x	x	x	x	x	x	x	x	x	x	x
Wilmerding Borough	2,190	No	None											

Source: Information provided by municipal surveys and the Allegheny County Health Department

4.8 Athletic and Collegiate Recycling Programs

Pittsburgh Pirates Recycling Program

The Pittsburgh Pirates organization launched their “Let’s Go Bucs. Let’s Go Green” program in 2008 to begin landfill diversion practices for waste generated at PNC Park and to educate stadium visitors about resource conservation. Recently, the Pittsburgh Pirates organization enhanced their recycling program by adding GreenDrop Recycling Stations at PNC Park and the PNC executive offices in Pittsburgh. The “Let’s Go Bucs. Let’s Go Green” program has grown successfully each year since its creation according to statistics of the program. Additional information regarding the program is located in Appendix L.

Collegiate Recycling Programs

The University of Pittsburgh – Oakland Campus (Pitt) and Carnegie Mellon University (CMU) have implemented on-campus recycling programs that are managed by their Facilities Management Departments. Pitt began their recycling program in 1990 accepting only high quality office paper, and now their program collects almost every grade of paper, corrugated cardboard, scrap metals, aluminum and tin cans, plastic containers, yard waste, batteries, fluorescent lamps and computer monitors. A full time recycling coordinator is employed by the Pitt Facilities Management Department to administer all components of the recycling program and facilitate the removal of regular waste and recyclable material.

Over fifty (50) different on-campus buildings are included in Pitt’s recycling program and a variety of options for recycling are made available in each building. Small recycling containers are located in offices and workstations on-campus, and each container has a sticker on it describing which materials are acceptable and unacceptable to be placed in the container. Larger recycling stations may also be found throughout certain buildings on-campus, which offer more storage for greater volumes of recyclable materials.

Pitt also participates in the annual Recyclemania competition, a national recycling campaign that over 600 universities compete in over the course of eight (8) weeks to collect the greatest amount of recyclable materials. More information on Pitt’s recycling program can be found here: <https://www.facmgmt.pitt.edu/recycle.htm>

The University's Green Practices Committee started CMU's recycling program, which has been in place since 1999. The Committee is comprised of administrators, staff, faculty members, and students having a common goal to "develop university practices that improve environmental quality." Out of this goal emerged the "Scotty Goes Green" program. The Scotty Goes Green Program engages CMU faculty and staff in a voluntary, self-guided initiative that promotes a high standard for environmental practices at CMU. A series of checklists and tools will guide the user through three levels of certification. The goals of the program are to:

- Engage faculty and staff in activities that will help to make CMU a leader in campus sustainability
- Recognize and reward leadership in sustainability
- Educate participants about how and why to take action
- Support the Pittsburgh Climate Action plan
- Further integrate sustainability into campus culture
- Conserve water, save energy, minimize waste and save money
- Promote campus policies that support sustainability

Offices that participate receive the following:

- An award to hang in front of their office
- Acknowledgement of their certification level on the Scotty Goes Green website
- A digital logo to place on their own website that recognizes their certification level
- Ongoing support to complete, maintain and advance their certification level.

Information on the CMU Green Office Certificate Program may be found here:

https://www.cmu.edu/environment/get-involved/scotty-goes-green-office-certification-program.html#scotty_goes_green

The Scotty Goes Green for Student Living program is the student counterpart to the Green Office Certificate Program. It was designed as a voluntary, self-guided initiative for students to determine the level at which they are living green in their daily lives and in their residence halls. This program is to advocate for green student living and inspire student leadership in environmental stewardship on campus. Information on the CMU Scotty Goes Green for Student Living Program may be found here:

<https://www.cmu.edu/environment/get-involved/scotty-goes-green-for-student-living/index.html>

CMU has a recycling policy in place to comply with Pennsylvania Act 101, with three distinct activities that are promoted to encourage on-campus recycling efforts. The promoted activities stated in the policy focus on the collection of common recyclable materials, source reduction (electronic mail, double-sided prints, etc.), and purchasing products from recycled materials. The following materials are recycled on campus:

- Paper
- Cardboard
- Compost
- Bottles, cans and cartons
- Batteries
- Computers, e-Waste, media, CDs, ink cartridges, cell phones
- Scrap metal and furniture

By visiting the CMU webpage, students and faculty can see a full list of the items accepted in the above categories.

CMU has also incorporated food waste composting on campus through their Green Practices Committee. Between November 2012 and January 2013, food-waste composting bins were delivered across campus. Each compost bin displays a listing of compostable items to help CMU faculty, staff, and students identify which items may be composted. Compost collection sites are currently available in many Departmental kitchens and lunchrooms on campus. More information regarding the food-waste composting program at CMU may be found here:

<https://www.cmu.edu/environment/recycling-waste/food-composting/index.html>

Since the Green Practices Committee began their environmentally sustainable initiatives in 1999, CMU has experienced a consistent increase in the percentage of materials recycled on campus. Table 4-7 lists the tonnage totals of recycled materials diverted because of the CMU programs between calendar year 2012 and 2016. See Appendix L for the full CMU recycling policy, recycling guide, etc.

Table 4-7
CMU Campus Recycling Totals (2012-2016) (in Tons)

Recycled Materials in Tons	Year				
	2012	2013	2014	2015	2016
Mixed Office Paper	226.65	258.97	298.63	286.26	219.51
Cardboard	261.43	212.65	196.38	201.65	223.25
Beverage Containers	81.63	81.55	76.62	99.27	104.97
Wood Waste and Pallets	31.50	30.00	25.00	53.18	42.75
Food Waste	402.00	419.20	509.00	536.12	614.30
Steel and Bimetals	37.51	32.32	35.80	24.67	28.07
Tires	2.49	1.85	2.69	2.67	2.8
Computer Equipment	42.50	53.80	55.42	57.28	61.00
Plant Materials	38.00	30.07	51.33	55.92	131.17
Batteries (Alkaline, Lithium, NiCad NiCad/Li/NiMH)	0.80	5.31	1.55	1.29	2.15
Tubes, Oil, Paint, Glycol, Batteries (Lead Acid)	19.26	40.40	28.07	23.25	29.21
Textiles	5.3	29.00	30.30	25.10	13.70
Other (CDs, Transparencies, Toners)	1.33	1.55	1.17	0.94	0.83
Total Recycled Materials	1,150.40	1,196.67	1,311.95	1,367.60	1,473.71
Total Waste Generated (not including construction debris)	3,234.00	3,124.00	3,293.00	3,038.00	2,941.00
Percent Recycled	26.24%	27.70%	28.49%	31.04%	33.38%

Source: CMU website, updated on November 6, 2017

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CHAPTER 5 – SELECTION AND JUSTIFICATION

The purpose of this chapter is to describe the process used to select and recommend components to the overall waste management system for Allegheny County, and to provide justification for the selections and recommendations. The County must ensure that the recommended system(s) provides the required capacity needed to properly process/ dispose of all municipal waste generated within their boundaries over the next ten 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 County; and makes recommendations for future adjustments to those systems.

If a 35% recycling and composting diversion is a long-term goal, a countywide commitment to recycling and waste reduction is necessary and needs to be discussed in the County plan.

5.1 Securing Waste Disposal Capacity for Allegheny County

As part of the Municipal Waste planning process, each county in Pennsylvania needs to secure ten years of disposal capacity for municipal waste generated from within its borders. Historically, Allegheny County's SWMP has stated that municipal waste from the County 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 County, 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 County's plan.

Currently, under this modified "free market" waste system in place in the region, nearly 62% of municipal waste generated in Allegheny County is disposed of at two privately owned and operated facilities, the Monroeville Landfill and the Imperial Landfill. This contracting structure has proved successful over the past ten years and therefore will continue to be used as part of the 2019 SWMP.

5.1.1 Waste Disposal Capacity Assurance in Allegheny County

Under Act 101, each County in Pennsylvania must secure MSW disposal capacity to meet its needs for the next ten years. There are a number of ways in which this requirement can be met. Allegheny County has elected for this SWMP to secure the minimum disposal capacity requirement at multiple disposal facilities. This process to secure MSW disposal capacity was conducted in the fall of 2017 using a 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, RMW, and C&D waste 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 the sustainability of recycling and integrated waste management in Allegheny County, and 2) their willingness to offer free disposal capacity at their sites on an annual basis to help with open/ illegal dump cleanups in Allegheny County. These two items were optional, not mandatory, SOI requests of Respondents.

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

Submission packages were received by Ebony Holdings (E. Holdings) in September 2017, and were reviewed in accordance with evaluation criteria outlined in the SOI. A total of fourteen (14) landfills and four (4) waste transfer stations responded to the SOI.

Thirteen (13) of the fourteen (14) respondents agreed to accept waste at their facilities for both the five (5) year initial and subsequent five (5) year renewal period, for a total of ten years. Northwest Landfill agreed to accept waste for only the first five (5) year term. All responding disposal facilities agreed to donate capacity to County sponsored non-profit and/or public cleanup events. The donated tonnage is listed in Table 5-1.

Table 5-1
Donated Disposal Tonnage for Non-Profit and/or Public Cleanup Events

Facility	Tons Donated
Advanced Disposal	100
Joseph J. Brunner Landfill	100
Seneca Landfill	100
Arden Landfill	575
Kelly Run Landfill	575
Monroeville Landfill	575
Northwest Landfill	100
South Hills Landfill	575
Valley Landfill	575
Westmoreland Sanitary Landfill (Tervita)	100
Carbon Limestone Landfill	100
Evergreen Landfill	100
Greenridge Reclamation Landfill	100
Imperial Landfill	100

Source: Tons donated obtained from SOI responses

Not all facilities agreed to accept all fractions of MSW, including special handling wastes; however, among multiple facilities, the needs of Allegheny County 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 1 and Table 2, 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 3, which lists the proposed backup disposal facility for each Submittal.

All Respondents' submission packages were reviewed and considered complete by B&L, the SWAC and the Allegheny County Health Department, upon further consideration/ clarification of the submissions and SOI requirements. A recommendations memorandum contained in Appendix A documents a summary of all submittals and the facilities that were recommended for inclusion in the SWMP, based on review, discussion, and recommendation by the SWAC. The selected facilities are listed in Chapter 6 of the SWMP.

The SWAC chose to recommend to the County contracting with ten (10) disposal sites, along with three (3) transfer stations, as well as reaching out to two (2) additional disposal facilities and six (6) transfer stations to request their response to the SOI. After the recommendations memo was presented to the members of the SWAC, four (4) additional waste disposal facilities and one (1) additional transfer station submitted SOI responses. These responses were evaluated and all facilities responses were deemed complete and adequate for recommendation to be included in the County Plan.

Factors considered when evaluating SOI responses were proximity to Allegheny County, use of the primary existing facilities currently used 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 fourteen respondents will provide more than the required minimum municipal waste disposal capacity assurance by Allegheny County for the next 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 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 Allegheny County sources as explicitly stated in the agreement.

It is the intent of the County to enter into new waste disposal agreements with selected facilities no later than December 31, 2018 to coincide with the expiration of the current contract agreements. At that time, copies of the executed disposal contracts will be placed in Appendix M of this SWMP.

5.2 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 Allegheny County. The private sector handles the consolidation and shipping of mixed recyclables at their 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 WWTPs that accept sludge and private landfills, and RMW is managed privately through contracted collection.

Sixty-one (61) municipalities have curbside collection of recyclables, thirteen (13) municipalities have at least one drop-off location, and twenty-five (25) municipalities offer residents both curbside collection and drop-off collection of recyclables. Thirty-one (31) municipalities do not currently provide access to curbside or drop-off collection of recyclables to their residents.

There are twenty (20) municipal and twelve (12) privately owned yard waste composting facilities in Allegheny County.

There are forty-three (43) municipalities with curbside HHW and e-waste collection programs, currently offered by either Republic Services or WM. Of these 43 municipalities, one (1) municipality (Penn Hills) only has curbside collection of e-waste.

The Allegheny County SWAC has expressed a desire to expand the current recyclables collection program, to ensure that the maximum number of residents in the County are being offered recycling options through a combination of drop-off and curbside recycling programs. It is a strong desire of this SWMP to satisfy the needs of the County's residents and businesses through the growth of these recycling opportunities in the County, mainly in relation to e-waste and HHW collection.

5.3 Waste and Recyclables Management – Alternatives

The following section briefly highlights waste collection, transfer, processing and disposal system alternatives that currently are available to Allegheny County. This section focuses on alternatives that have specific compatibility or that show particular promise within Allegheny County's waste management system that was described earlier in this chapter. Waste management alternatives that are not realistic or feasible in Allegheny County have not been included in this analysis.

5.3.1 Waste and Recyclables Collection

5.3.1.1 MSW Collection

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

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

Contracted Collection - Municipalities or Councils of Government can contract via a public bidding procedure with a private waste hauler to provide refuse collection services to their residents (and institutions and small businesses, typically).

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.

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

Contracted collection is the most widely used method within Allegheny County. Contracted collection with private haulers allows local governments to indicate the types of collection services to be provided under contract (unlimited collection, pickup with can limits, or straight pay-as-you-throw; bundled curbside recycling services with the waste collection; bulky item pickup allowances; HHW and/or e-waste collection; may include direct customer billing; may or may not include disposal costs, at the municipality's option; may include reporting requirements for wastes and recyclables collected; etc.). A municipal or multi-municipal waste disposal contract can also (but does not have to) designate the disposal site or sites where the municipality wishes the contracted hauler to dispose of the municipality's waste, and can also designate a site where the recyclables are to be taken (if part of the contract). Sometimes, haulers are hesitant to support contracted collection programs because they may be perceived as favoring larger haulers that have greater fleet and staff capabilities, or because the contract may contain contract requirements (insurances, guarantees, etc.) with which small haulers cannot easily comply. It is optional to contract for waste and recyclables separately, if preserving smaller haulers is important in a municipality. Additionally, it is optional to contract with multiple haulers to service municipalities that are more sparsely populated, in order to preserve smaller haulers in a municipality and make collection more economical for residents. Contracted collection can reduce the number of waste vehicles within a municipality as compared to subscription collection, which results in more efficient collection with less truck traffic, road wear, air pollution and noise. Contracted collection may also help limit the occurrence of illegal dumping, as

residents with this form of collection are provided with consistent and reliable refuse collection services and, therefore, are less likely to illegally dispose of waste and/or accumulate waste for long periods of time. It is recommended that requests for proposal for a municipal contract to be renewed or developed over the ten-year planning period be reviewed by the County Recycling Coordinator to ensure the material included in the RFP and/or contract meet the current materials accepted at the MRFS and accepted by market conditions. Additionally, the ACHD should review the RFP to ensure that it meets the intent of the County SWMP.

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. Those municipalities that currently offer municipal collection (Leetsdale, Monroeville, Munhall, North Fayette, North Versailles, City of Pittsburgh, Swissvale, and Wilkinsburg) may continue to offer this service to their residents. Self-haul may be used by residents throughout the County, regardless of the current collection system in the municipality. Often residents use self-haul when disposing of larger bulk items, such as furniture and appliances, or when performing large home clean-up projects.

5.3.1.2 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 locations through drop-off/ transfer collection. 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 (also known as commingled), 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.

Source-separated and dual-stream recycling require greater effort by the customer and hauler, but the recycling facility's processing effort is decreased. Both source-separated and dual-stream recycling operations require the hauler either to place recyclables from the curb into different containers in the recycling truck, or to make multiple collections, for transportation and delivery of the material to the recycling center. A variation of source-separated recycling is "curb-sort" services, where recyclables are placed at the curb commingled, and are then sorted into different collection truck compartments by the collection crew.

Single-stream recycling collects all of the recyclable materials in a single container at the curb. 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. Single-stream recycling often provides increased collection efficiency, lower costs, and higher total recycling tonnages. It often allows a larger group of material types to be recycled, but requires a more complex processing system and greater effort at the recycling facility to process the mixed recyclables. This often results in higher contamination and processing residue.

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, 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.

5.3.1.3 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 of over 17,000 pounds and trailers with a registered GVW 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 the 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 Allegheny County need to meet the requirements of the State program, and hauler data collected from the State program is available on the PADEP website at:

<http://www.portal.state.pa.us/portal/server.pt?open=514&objID=589642&mode=2>

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. Allegheny County does not currently have a hauler registration program nor do they intend to establish one over the ten-year planning period. Individual municipalities interested in

establishing a hauler registration and/or licensing program for smaller haulers may contact the County for recommendations for the program.

5.3.2 Waste and Recyclables Transportation and Disposal

5.3.2.1 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, or another type of permitted processing, drop-off or disposal facility. All municipal waste generated within Allegheny County must be transported to a duly permitted processing/ disposal facility, with larger haulers duly licensed by the State as required by Act 90.

5.3.2.2 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 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 Allegheny County, 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.

5.4 New Program Recycling Goals and Opportunities

It is always a challenge to increase recycling. In an effort to provide residential and commercial recycling opportunities in areas of Allegheny County and increase the amount of material recycled, B&L, in coordination with the Health Department, developed a number of initiatives and programs that may potentially enhance recycling in Allegheny County over the 10-year planning period. This list was shared with the members of the SWAC and the members of the SWAC were asked to rank these initiatives by order of importance for implementation over the 10-year planning period. Members of the SWAC ranked the following initiatives “most critical”.

Municipal Recycling Recommendations:

- Develop new permanent recyclables drop-off facilities with convenience in mind;
- Recycling drop-off centers with 24/7 hours managed by one or more municipalities;
- Adding additional recyclables material to existing drop-off facilities;
- Develop a method for more comprehensive reporting of recyclables collection to the County; and
- Investigate volunteer opportunities to assist the municipal coordinator with recycling education.

Special Recyclables Recommendations:

- Develop a permanent HHW collection facility;
- Develop a year-round permanent e-waste collection facility; and
- Develop permanent yard waste drop-off location (municipal or Countywide).

Educational Priorities:

- Development of a plan to target each sector present in the County (i.e. colleges, elementary schools, restaurants, bars, etc.) to encourage/support recycling and discuss waste collection/reduction methods;
- Encourage schools to develop recycling programs;

- Require and/or encourage haulers to provide education and/or helpful hints to residents and the County semi-annually, informing them on how to and what to recycle and dispose of;
- Develop a method to reach out to the commercial businesses in the County to discuss recycling, obtain recycling tonnages, etc.;
- Encourage the development of school competitions to get the community involved in recycling, or the participation in other state and national recycling/waste collection competitions;
- Target waste reduction and recycling at local bars and restaurants; and
- Target waste reduction and recycling at local businesses.

5.5 Waste and Recycling System Recommendations

The overarching goal of the 2019 Allegheny County SWMP is to offer an integrated program of waste management and recycling programs to the residents and businesses of Allegheny County that:

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

The following measures are components of this recommended integrated waste and recyclables management program for Allegheny County.

5.5.1 Waste and Recyclables Collection Recommendations

5.5.1.2 Recommendation C1 Contracted Waste/Recycling Collection – The availability of cost-effective waste and recyclables collection services is recommended. Most areas of the County currently have contracted collection. Municipal (or COG) bid collection services have been shown in this County and 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 a municipal (or COG) decision, this SWMP 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, pay-as-you-throw options, etc. It is also recommended as part of this SWMP that all contracts for waste and/or recycling include a mandatory requirement for haulers to provide quarterly education to residents, through flyers, electronic mail *and* website content, that describe recycling opportunities, materials accepted, waste minimization techniques, grasscycling, backyard composting, etc. Particularly in the more suburban parts of the County, the Plan recommends that municipalities consider bidding for curbside recycling as part of a bundled service, or as a separate bid for recyclables collection only. A template bid document for municipal bidding of services is provided in Appendix I.

5.5.1.3 Recommendation C2 Voluntary Residential Curbside Recycling Collection—Mandatory curbside recycling for all suburban communities is ideal. Where a municipality does not require curbside recycling, this SWMP 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 additional cost to the customer or the municipality may require that fully integrated service be the standard service.) This shall not be a financial hardship on waste haulers since they are often providing that service in adjacent municipalities already. A template ordinance to implement this recommendation is in Appendix I.

5.5.1.4 Recommendation C3 Standardization of Recyclable Materials – It is a recommendation of this SWMP that Allegheny County consider the standardization of recyclable materials collected within the County in the 10-year planning period. It is recommended to work with local waste haulers and recyclables processing facilities to collect the same recyclables materials curbside across the County, as well as standardize the materials accepted at drop-off facilities across the County. Once the standard list of materials is established, it is recommended that this list be distributed to all municipalities and

encouraged for utilization when developing a contract for recyclables collection. This recommendation will allow Allegheny County to develop educational material, i.e. TV and newspaper ads, that may be used in all municipalities, therefore saving time and money.

This is an important consideration given the current market conditions in regard to the China ban and other foreign Countries reducing their importation of recyclables from the United States.

5.5.2 Waste and Recyclables Transportation

5.5.2.1 Recommendation T1 Transfer of Waste – The SWMP supports the continued reliance on the private sector for waste hauling services, including the option of waste transfer to take the County’s municipal waste to out-of-County disposal sites, if needed.

5.5.2.2 Recommendation T2 Transfer of Recyclables – The private sector provides recyclables transfer services for materials that either it collects or that are dropped off to its system. Some municipalities also collect recyclables through drop-offs. The SWMP 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 SWMP is ten years, Allegheny County recognizes that the recycling infrastructure within the County may change significantly by the end of that term. Allegheny County, therefore, reserves 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 interests of their recycling program.

5.5.3 Waste Disposal

5.5.3.1 Recommendation D1 Waste Disposal Capacity – The SWMP calls for all municipal waste generated in the County, including Special Handling Waste, to be disposed at duly-permitted disposal sites for these wastes by the state in which they are located. To meet the minimum requirements of municipal waste capacity assurance, and for related reasons explained in Chapters 5 and 6, this

SWMP recommends the County enter contracts with at least the fourteen (14) SOI respondents to assure disposal capacity over the 10-year planning period. Additional facilities may be considered based on current acceptance of Allegheny County waste and their proximity to the County.

5.5.4 Management and Sustainability of Programs

5.5.4.1 Recommendation MS1 Responsibilities of Allegheny County – It is a recommendation of this SWMP that Allegheny County continues to strive to collect all available data on recycling diversion of Allegheny County recyclables. Form FM-11, FM-12 and FM-13 were created by PROP to report recyclables tonnages diverted from the waste stream from drop-offs, collection events, businesses, and haulers. It is recommended that Allegheny County continue to distribute this form to local entities, as well as local private recyclers and haulers. It is also recommended that Allegheny County continue to encourage municipalities to rollout the recycling tonnage reports to additional entities over the 10-year planning period.

5.5.4.2 Recommendation MS2 Program Support and Funding Options – All of the SOI Respondents indicated a willingness to discuss ways to support the sustainability of the County's integrated waste and recycling programs in the future.

It is recommended that Allegheny County 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 part of the "Zero Waste Pittsburgh" initiative enacted by the PRC at many Allegheny County events, the zero waste kits used may be affixed with advertising for the sponsors of the program or other programs in the County.

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. The County at various events may use these containers and advertising.

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 the Closed Loop Fund. The Closed Loop Fund is made up of Consumer Goods Companies and Retailers who are creating economic value by increasing recycling rates. The Closed Loop Fund provides 0% interest loans to municipalities and below market interest loans to private companies to develop local and recycling infrastructure. As of 2016, the closed loop fund made eleven (11) investments into projects throughout the United States, committing \$25 million dollars. Their goal is to invest \$100 million in sustainable consumer goods, advanced recycling technologies and the development of the circular economy. The current companies and retailers participating in this program are Walmart, Coca-Cola, Pepsico, Procter and Gamble, Unilever, 3M, Dr. Pepper and Snapple, Keurig, Colgate Palmolive, Johnson & Johnson and Nestle. More information on this program can be found on their website at: <http://www.closedlooppartners.com/>

An additional option for funding recycling programs in Allegheny County is to include a recycling fee in contracts used by municipalities to solicit waste and/or 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 source of funding may come from the retrofit and/or development of a key-card accessed drop-off facility. These facilities require residents to purchase a key-card for access to the site. The key-cards are linked to driver's license and are recorded upon swiping into the facility. This allows the municipality and/or County to track not only the resident entering the facility, but the frequency of use, as well as maintain a record of access in case of contamination or illegal dumping issues. The drop-off site shall be fenced, well lit and outfitted with surveillance cameras for both the residents' safety as well as to deter loitering

and vandalism. Although a full assessment for each proposed location is necessary to determine the estimated capital cost, an approximate capital cost figure has been developed by B&L. This information is included in Appendix D.

B&L developed a sample key-card analysis for four (4) municipalities in Allegheny County (Liberty, Port Vue, Glassport and Lincoln), to establish a multi-municipal key-card accessed drop-off facility. Based on an estimated capital investment between \$100,000 and \$150,000 and the number of households in each of these municipalities, the key-card program may range between \$50/household and \$150/household based on 100% to 25% participation rate, respectively. The payback period for the capital investment, assuming a cost per household of \$75 annually, is between one (1) year and three (3) years, based on 100% or 25% participation, respectively. The key card program cost is the total annual cost per household for residents to be given a key-card for the facility and provided 24/7 access to the site for recyclables drop-off. It allows residents the flexibility to drop material off at their convenience, though staffing during main business hours is still encouraged, at a minimum for the first few months of the program. This program has seen success in other Counties in Pennsylvania and is being developed in even more Counties with grant assistance from PADEP.

Once the program has generated enough funding to pay back the capital investment, the remaining funds generated annually may be used by the local municipality and/or County to support additional programs, establish additional key-card drop-off locations, etc.

Lastly, a source of funding for Allegheny County is the implementation of user fees to support the programs offered by the County. This will require an in depth analysis of the programs offered to residents and any future programs envisioned by the County, a financial evaluation of these programs and a determination on how to implement the user fee, whether as a per capita fee, per household fee, per \$1,000 of assessed property value, etc. The user fee will have to be implemented at the County level and remitted by residents to the County on either a quarter, semi-annual or annual basis.

5.5.5 Recyclables Drop-offs

5.5.5.1 Recommendation DO1 Drop-off Recycling – This SWMP recommends that Allegheny County continue to work with the private and public sector to maintain the current recyclables drop-offs in the County. Additionally, it is recommended that Allegheny County provide information to any municipality interested in establishing a new or previous drop-off location. This may include information on a key card program at an existing drop-off or at a new drop-off facility, and/or encouraging municipal partnerships to establish or expand recyclables drop-off facilities that are open to residents of multiple municipalities.

An additional recommendation of the SWMP is to investigate the feasibility of expanding materials accepted at some drop-offs throughout the County. Some drop-offs only accept paper or cardboard. If these facilities can be retrofitted to accept more materials like plastics, metal cans and glass, for example, it will benefit residents, most likely increase recycling tonnages in those areas, and supplement the recommendation to standardize recyclables collected within Allegheny County.

5.5.6 Illegal Dumping

5.5.6.1 Recommendation ID1 Illegal Dumping – The SWMP supports the elimination of illegal dumping in the County. It is especially important that municipalities understand that comprehensive, convenient and affordable waste and recycling services are the primary contributor to the reduction of improper disposal practices, and municipalities shall facilitate their implementation. Further, the SWMP supports cleanup and educational efforts to help remove materials from existing illegal dumps and to educate residents and businesses on the reasons not to illegally dispose of municipal wastes and recyclables. To offer community service support, all of the disposal capacity assurance contractors under this SWMP include an allowance for public and non-profit groups to dispose of limited quantities of dump cleanup materials at the disposal sites for free; the contracted disposal sites offering free disposal of dump cleanup waste include:

- Advanced Disposal
- Joseph J. Brunner Landfill

- Seneca Landfill
- Arden Landfill
- Kelly Run Landfill
- Monroeville Landfill
- Northwest Landfill
- South Hills Landfill
- Valley Landfill
- Westmoreland Sanitary Landfill (Tervita)
- Carbon Limestone Landfill
- Evergreen Landfill
- Imperial Landfill
- Greenridge Reclamation Landfill

5.5.7 Yard and Food Waste/ Organics Composting

5.5.7.1 Recommendation OC1 Curbside Organics Collection – It is also a recommendation of this SWMP that municipalities who develop an RFP for waste and recyclables collection during the 10-year planning period, or whose existing contract expires during the 10-year planning period, consider including an option in the RFP for curbside organics collection and transportation to a compost facility that accepts food waste, to determine the estimated cost to residents for this service. If the cost to residents is reasonable, a municipality may consider including this option in their final contract for waste and recyclables collection.

At this time, it was determined that expansion of curbside organics collection is not a critical item, as identified by the members of the SWAC, over the 10-year planning period. Municipalities that contract for waste collection, as part of their bidding options, if funding for curbside organics collection becomes available and the interest in the community to participate in curbside organics collection makes the economics justifiable may revisit curbside organics collection during the 10-year planning period.

5.5.7.2 Recommendation OC2 Operation of Compost Facilities – It is recommended that the municipalities currently operating a municipal compost facility maintain these facilities. It is recommended that Allegheny County offer support for these

facilities, when available. If and/or when a permanent HHW and e-waste facility is developed, the feasibility of adding a permanent compost facility at the same location may be evaluated at that time. Development of compost facilities may be revisited during the 10-year planning period, if funding for composting becomes available and the interest in the community to participate in composting makes the economics justifiable.

5.5.7.3 Recommendation OC3 Food Waste Composting – At this time, it was determined that food waste recovery and subsequent composting is not a critical item, as identified by the members of the SWAC, over the 10-year planning period. Food waste recovery may be revisited during the 10-year planning period, if funding for food waste recovery becomes available and the interest in the community to participate in food waste recovery makes the economics justifiable.

5.5.8 Increasing Recycling

5.5.8.1 Recommendation R1 Corrugated Cardboard and Paper Recycling – With an aspiration to meet 35% recycling diversion in the next ten years, as projected in Table 3-4 in Chapter 3, 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 studies, there is an estimated 150,000 tons of newspaper, corrugated cardboard, and office paper in the Allegheny County waste stream. To reach a 35% recycling diversion rate over the ten year planning period, Allegheny County needs to recycle or divert approximately 75,000 tons of material that is currently landfilled. It is recommended, based on the tonnage potentially available, that corrugated cardboard and paper recycling are a focus over the ten-year planning period.

5.5.8.2 Recommendation R2 Electronics Recycling – In order to address the recovery of electronics that are now required to be recycled under the Covered Device Recycling Act (Act 108 of 2010), the SWAC determined electronics recycling is a critical issue in Allegheny County. Based on this determination, this SWMP will

focus on making recommendations for electronics recycling over the 10-year planning period.

There are several private industries, in and around Allegheny County, that accept electronics for recycling. One-day collection events are also held by the PRC and ECS&R to recover this material from Allegheny County residents. Additionally, Republic Services and WM offer curbside collection programs for this material to residents in Allegheny County.

It is a recommendation of this SWMP that Allegheny County continue to work with local municipalities to offer guidance and support, when available, for safe electronics handling and recycling. It is recommended that Allegheny County focus on educating residents on the CDRA Act and how this Act affects residents and their e-waste.

It is a recommendation of this Plan to encourage curbside electronics collection options for residents of Allegheny County. For the municipalities in Allegheny County 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 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 to include this option in their waste collection contract.

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, operating and maintaining the location over the course of the contract. 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.

The County may also look at curbside collection of e-waste as a County wide or Regional contract. If this option is considered over the ten-year planning period, the County may consider issuing a request for proposal (RFP) for a third party entity to collect e-waste material from residents. Again, this can be done as a Countywide contract with one or more entities or possibly a Regional contract (considering the COGs). Multiple entities may be contracted to service various regions in the County.

It is a recommendation of this Plan to encourage residents to utilize private industries for recycling of electronics. The list of private industries that collect electronics is kept up to date as part of the Allegheny County Recycling Resource Directory. It is recommended that Allegheny County continues to provide notification to municipalities when the Recycling Guide has been updated and that municipalities encourage residents to utilize this tool when looking for e-waste recyclers and other recyclers of hard-to-recycle material.

It is a recommendation of this Plan to encourage residents to utilize the one-day collection events for recycling of electronics. It is recommended that the County continue to provide information on the events to local municipalities that can be shared with residents. Information regarding the one-day collection events shall also be included on the County's website, newspaper advertisements, social media outlets, radio and/or TV broadcasts, etc. to reach as many residents as possible.

Lastly, it is a recommendation of this SWMP that Allegheny County continues to evaluate the development of a year-round permanent e-waste collection facility over the ten-year planning period. Funding for this facility may come from national programs, local businesses, trusts and grants, local private sector waste and recycling industries, PADEP grants, private industry, etc. At this time, funding for a permanent e-waste collection facility is not available at the County level. Development of a permanent e-waste collection facility will require a

source of revenue, may require a fatal flaw analysis, permitting, legal aid, public access evaluation, and other factors. It is recommended to enlist the aid of professional services prior to developing a permanent e-waste collection facility. It is recommended that the conversation regarding a permanent facility remain open over the 10-year planning period and if the capital costs associated with a permanent facility become available or if legislation is enacted that supports (financially) the development of a permanent facility, the feasibility study provided as part of this SWMP be revisited at that time.

5.5.8.3 Recommendation R3 HHW Collections – It is a recommendation of this SWMP that Allegheny County continues to investigate funding opportunities to establish and maintain a year round permanent HHW collection facility (which may be in conjunction with an electronics collection facility) over the ten-year planning period.

Allegheny County 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 SWMP for Allegheny County to work with the private sector, both haulers and disposal facilities to provide such education for residents of Allegheny County.

It is also a recommendation of this SWMP to encourage curbside HHW collection for residents of Allegheny County. For the municipalities in Allegheny County 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 to include this option in their waste collection contract. Municipalities that currently contract with a private hauler for curbside collection of HHW are encouraged to maintain this service and possibly consider collaborating with neighboring municipalities to offer this service to more residents, while potentially reducing the costs to residents due to the larger demographic service area.

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 HHW 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, operating and maintaining the location over the course of the contract. Requiring the respondents to provide a drop-off location for HHW 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 HHW material more conveniently.

The County may also look at curbside collection of HHW as a County wide or Regional contract. If this option is considered over the ten-year planning period, the County may consider issuing a request for proposal (RFP) for a third party entity to collect HHW material from residents. Again, this can be done as a Countywide contract with one or more entities or possibly a Regional contract (considering the COGs). Multiple entities may be contracted to service various regions in the County.

It is a recommendation of this Plan to encourage residents to utilize private industries for recycling of HHW material. The list of private industries that collect HHW is kept up to date as part of the Allegheny County Recycling Resource Directory. It is recommended that Allegheny County continue to provide notification to municipalities when the directory has been updated and that municipalities encourage residents to utilize this tool when looking for HHW recyclers and other recyclers of hard-to-recycle material.

It is a recommendation of this Plan to encourage residents to utilize the one-day collection events for recycling of HHW. It is recommended that the County continue to provide information on the events to local municipalities that can be shared with residents. Information regarding the one-day collection events shall also be included on the County's website, newspaper advertisements, social media outlets, radio and/or TV broadcasts, etc. to reach as many residents as possible.

5.5.8.4 Feasibility Study Results and Recommendations – B&L was retained by Allegheny County to develop a feasibility study for the development of a permanent HHW and e-waste drop-off facility for residential customers. A conceptual study had previously been conducted by the PRC that looked at the development of a Resource Recovery Park. This feasibility study was reviewed and used as a basis for the HHW and e-waste feasibility study.

B&L developed a feasibility study, which is located in Appendix D. The feasibility study evaluated the financial sustainability of developing a permanent HHW and e-waste collection facility. B&L assumed that the tonnage of e-waste and HHW material currently reported (calendar year 2016) to the County may be taken to a permanent facility. It shall be noted that this material tonnage does not include material collected curbside by Republic Services or WM in the County, unless reported to the municipality and subsequently reported to the County. B&L assumed the curbside programs will continue and this material will not be captured at a permanent facility.

Recommendation

Based on the economic analysis and feasibility study located in Appendix D, it was determined that the development of a County sponsored permanent HHW and e-waste drop-off facility is not financially viable at this time. The County has determined that they are not able to support the capital costs required for a permanent facility at this time. Based on the current processing fees and the current fees charged to residents for HHW and e-waste material, there is not enough revenue generated to support the capital expenditures and annual O&M costs associated with a permanent facility.

It is B&L's opinion that the following operational scenarios, if achieved, make the development of a permanent HHW and e-waste drop-off facility financially viable, by providing a minimum of \$100,000 in annual pre-tax cash flow:

Option 1

- Capital costs are funded by an outside entity with no obligation to pay back the funds, and
- Residential fees for e-waste are increased to \$0.55 per pound, and
- Processing fees for e-waste do not exceed \$0.35 per pound, and

- Contracts are developed with surrounding municipalities that guarantee residential tonnage to the permanent facility (minimum 700 tons of e-waste and 400 tons of HHW) or

Option 2

- Processing fees for e-waste do not exceed \$0.35 per pound, and
- Residential fees for e-waste are increased to \$0.65 per pound, and
- Capital expenditures do not exceed \$1,000,000, and
- Contracts are developed with surrounding municipalities that guarantee residential tonnage to the permanent facility (minimum 700 tons of e-waste and 400 tons of HHW), or

Option 3

- Processing fees for e-waste do not exceed \$0.35 per pound, and
- Residential fees for e-waste are increased to \$0.60 per pound, and
- Capital expenditures do not exceed \$550,000, and
- Contracts are developed with surrounding municipalities that guarantee residential tonnage to the permanent facility (minimum 700 tons of e-waste and 400 tons of HHW)

5.5.8.5 Recommendation R4 C&D Waste and Recycling – Allegheny County currently relies on existing 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. The current system may be adequate to manage the processing of C&D waste generated in the County, but the implementation of widespread recycling and/or C&D waste diversion is recommended in this SWMP.

One option for increasing C&D waste diversion and recycling is to implement a payback program for homebuilders and renovators in Allegheny County. This program is often implemented on the municipal level, since it is associated with local building permit requirements. The program requires builders and renovators obtaining a building permit to pay a fee (to be set at the local level).

As part of the building permit requirement, the permittee is required to submit waste and recycling receipts at the end of the project documenting the material generated on site, how much material was disposed and how much material was recycled. There are also well-documented average generation figures per square footage for home buildings that may be used to credit those builders who reduce their waste generation tonnage through source reduction, rather than recycling. Based on the percentages recycled and/or reduced, the permittee will receive the equivalent payback percentage from their initial fee.

5.5.8.6 Recommendation R5 Education – This SWMP 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 program in Allegheny County. The continuation and expansion of such educational efforts by the public and private sectors are recommended in this SWMP. Support from both municipal and private sector partners is crucial for a sustainable educational effort.

Some educational programs that may be implemented during the planning period include:

- A real time notification program. There are many companies offering real time notification software that allows the user of this software to select recipients to receive text, email and/or voicemails with notifications. These notifications may include HHW and e-waste collection information, curbside yard waste collection information, etc. It is recommended that this type of notification system be managed at the municipal level, as recipient information is more manageable.
- Newsletter distribution. 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. 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 newsletters content.

- Website update. The current Allegheny County Health Department website contains information on recycling, but can be difficult to navigate. A recommendation of this plan is to evaluate the need for a more comprehensive website solely dedicated to waste and recycling in Allegheny County. Information to be contained on this website may include, but is not limited to, recyclable material accepted as part of both curbside programs and drop-off programs, information on HHW and e-waste one-day collection events and curbside programs, information on pharmaceutical collection events and locations, a link to the Recycling Resource Guide for other hard-to-recycle material, etc.

5.5.8.7 Recommendation R6 Big Event Recycling – Special events with over 200 participants are required to have recycling in mandated municipalities. It is the recommendation of this SWMP that non-mandated municipalities require special events within their municipality to recycle. Additionally, it is recommended that mandated municipalities encourage smaller special events taking place within their municipality to recycle.

5.5.9 Biosolids and Septage

5.5.9.1 Recommendation B&S1 Biosolids – The County 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. The current system is sufficient to manage the biosolids generated from County sources over the next ten years.

5.5.9.2 Recommendation B&S2 Septage – The County 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 is adequate to handle the septage processing needs of the County over the next ten years.

5.5.10 Regulated Medical and Chemotherapeutic Waste and Home Health Waste

5.5.10.1 Recommendation MW1 Regulated Medical and Chemotherapeutic Waste – The County shall continue to rely on the current system for managing RMW, 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 RMW generated from County sources over the next ten years.

5.5.10.2 Recommendation MW2 Pharmaceutical Waste – The County shall continue to rely on the current system for managing pharmaceutical waste, which 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 County residents over the next ten years.

5.5.10.3 Recommendation MW3 Home Health Waste – The County shall continue to rely on the current system for managing home health waste, which 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 waste. The current system is sufficient to manage home health waste generated from County residents over the next ten years.

5.5.11 Ash and Asbestos

5.5.11.1 Recommendation AA1 Ash and Asbestos – The County 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 County sources over the next ten years.

CHAPTER 6 - LOCATION OF FACILITIES AND PROGRAMS

This Chapter identifies the location of each municipal waste processing, disposal and recycling facility, which is anticipated to contract with Allegheny County.

6.1 Location of Disposal/Processing Facilities

There are four (4) municipal waste disposal facilities currently located in Allegheny County; they are Imperial Landfill, Kelly Run Sanitation, Monroeville Landfill, and South Hills Landfill. The County has decided for this SWMP it will allow municipal waste generated in Allegheny County 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 County must contract with at least one (1) processing/ disposal site to secure the minimum municipal waste disposal capacity needs of the County for the next ten years. To meet this minimum contracting obligation under Act 101, the County advertised a SOI. The SOI also solicited municipal waste transfer stations that handle Allegheny County's municipal waste to agree to minimum procedures to comply with the SWMP and Article VIII, including proper reporting, waste manifesting, and delivery of Allegheny County's municipal waste to processing/ disposal facilities approved in the SWMP.

A summary of the Submittals received in response to the SOI, and the results of the Submittal reviews by the County SWAC, 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 Allegheny County to accept waste from Allegheny County for a period of five (5) years. Allegheny County retains 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 Allegheny County sources 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 M when executed. Facilities identified below that do not finalize and execute contracts with the County will be removed from this list of Designated Disposal Facilities.

Disposal Facilities

- Advanced Disposal Landfill
- Arden Landfill
- Carbon Limestone Landfill
- Evergreen Landfill
- Greenridge Reclamation Landfill
- Imperial Landfill
- Joseph J. Brunner Landfill
- Kelly Run Landfill
- Monroeville Landfill
- Northwest Landfill
- Seneca Landfill
- South Hills Landfill
- Valley Landfill
- Westmoreland Waste (Noble Environmental)

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

- The most geographically convenient
- The facilities most-used at the time the SWMP was drafted
- Multiple facilities are required to assure the disposal capacity for all types of “special handling” municipal wastes generated in the County (such as asbestos, ash, and RMW)

It is noted that all fourteen (14) disposal capacity assurance contractors chosen under this SWMP include an allowance for public and non-profit groups to dispose of limited quantities of dump cleanup materials at the disposal sites for free.

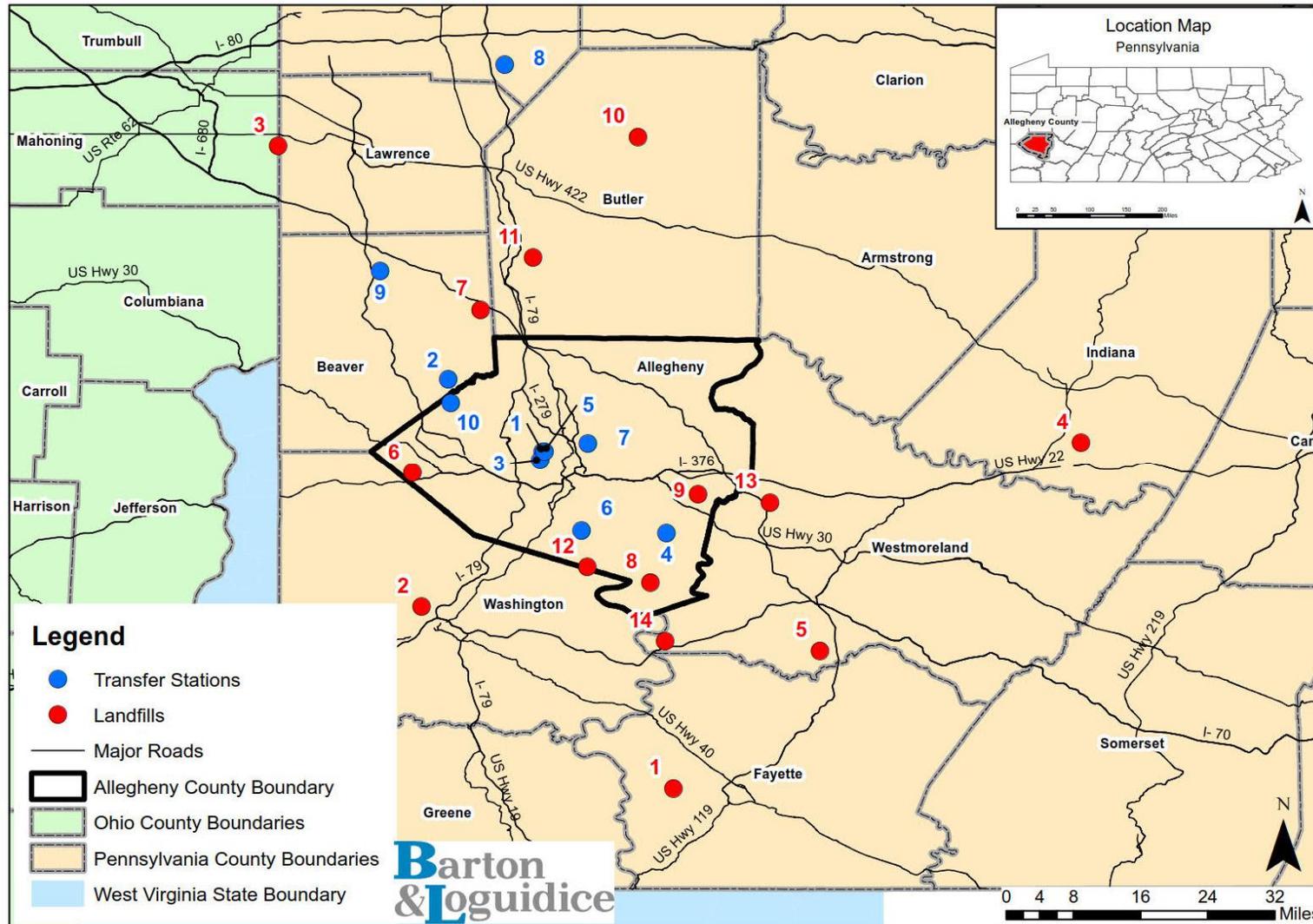
It is the intent of the County to enter all new waste disposal agreements with selected facilities no later than December 31, 2018. At that time, copies of the executed disposal contracts will be placed in Appendix M of this SWMP.

The location of these designated disposal facilities and responding transfer stations is presented in Figure 6-1, Regional Landfill & Transfer Station Locations.

Table 6-1
Regional Landfill and Transfer Station Locations

Map Designation	Facility	Map Designation	Facility
Landfills			
1	Advanced Disposal Chestnut Valley Landfill	8	Kelly Run Landfill
2	Arden Landfill	9	Monroeville Landfill
3	Carbon Limestone Landfill	10	Northwest Landfill
4	Evergreen Landfill	11	Seneca Landfill
5	Greenridge Reclamation Landfill	12	South Hills Landfill
6	Imperial Landfill	13	Valley Landfill
7	Joseph J. Brunner Landfill	14	Westmoreland Waste Landfill
Transfer Stations			
1	ABC-EZ Transfer Station	6	Michael Brothers Hauling
2	Ambridge Transfer Station	7	Reserve Park Transfer Station
3	Boyd Roll-Off Services	8	Tri-County Transfer Station
4	Genesis Autoclave (RMW Only)	9	Valley Waste Transfer Station
5	McKees Rocks Transfer Station	10	GPB Waste of Ohio-PA dba Iron City Express

Figure 6-1
Designated Disposal Facilities and Transfer Station Locations



6.2 Location of Drop-Off Recycling Centers

There are sixty-four (64) public and private drop-off recycling centers in Allegheny County located in the following municipalities:

**Table 6-2
Location of Drop-off Recycling Centers**

Map Identification	Municipality	Map Identification	Municipality
3	Brentwood Borough	30, 35, 36	McCandless Township
4	Chalfant Borough	1	McKees Rocks
5 and 6	Churchill Borough	18, 32, 33, 34	Monroeville Borough
14	Crescent Township	37	North Versailles Township
7	City of McKeesport	40	Pine Township
2,8,9,10,11,12,13, 31, 43	City of Pittsburgh	41	Port Vue Borough
15	East McKeesport Borough	42	Reserve Township
16	Edgeworth Borough	44	Shaler Township
17	Emsworth Borough	45	Sharpsburg Borough
25	Findlay Township	46, 47, 48	South Park Township
19	Forest Hills	49	South Versailles Township
27	Forward Township	39	Stowe Township
20 and 64	Franklin Park Borough	52	Verona Borough
21	Green Tree Borough	53	Versailles Borough
22 and 23	Hampton Township	56 and 57	West Homestead
24, 38	Harrison Township	50, 58, 59	White Oak Borough
26	Jefferson Hills Borough	54, 55, 60	Wilkins Township
28	Liberty Borough	51, 61, 62	Wilkesburg Borough
29	Marshall Township		

6.3 Yard Waste/Composting Program Locations

Currently, seventeen (17) municipalities in the County operate yard waste compost facilities under a yard waste composting PBR and an additional twelve (12) facilities are privately owned and operate under either a yard waste composting PBR or a general permit. The yard waste composting sites are listed in Table 6.3 and Table 6.4 and noted on the map in Figure 6-2.

6.4 Material Recovery Facility (MRF) Locations

There are currently six (6) MRFs located in Allegheny County, according to PADEP's website and ACHD information. The MRFs are listed in Table 6.5 and noted on the map in Figure 6-2.

Table 6-3
Yard Waste Composting Facilities Operated by Municipalities

Map Identification	Municipality	Map Identification	Municipality
3	Churchill Borough/Forest Hills Borough	21	Moon Township
4	Crafton Borough	22 and 26	Mt. Lebanon Township
6	Edgewood Borough	24	Penn Hills Municipality
7	Edgeworth Borough	25	Plum Borough
10	Greentree Borough	27	Robinson Township
12	Harrison Township	29	Upper St. Clair Township
8	Kennedy Township	30	White Oak Borough
17	Leetsdale Borough	18	Wilkins Township
23	McCandless Township	13	Wilkesburg Borough
20	Monroeville Municipality		

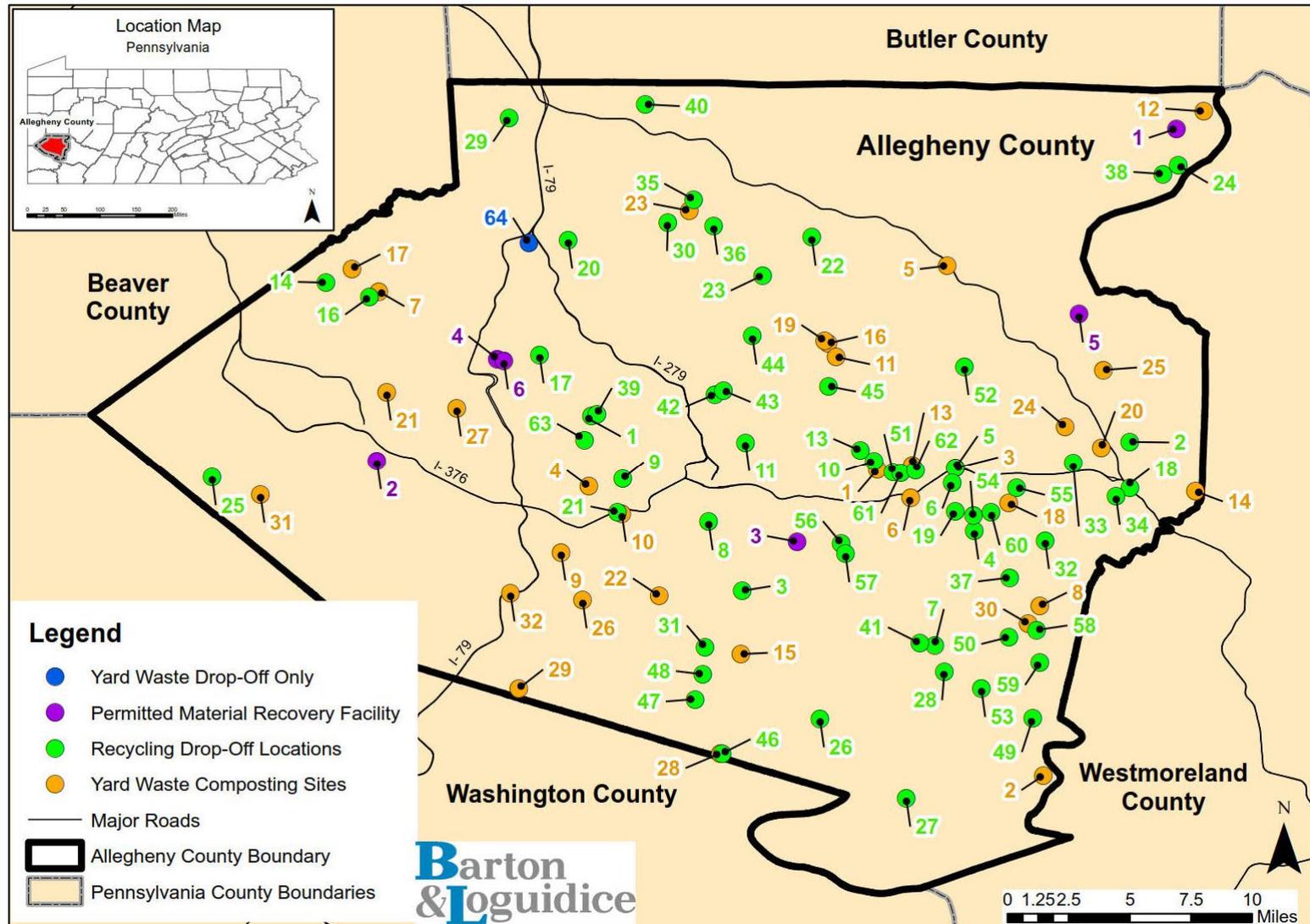
Table 6-4
Yard Waste Composting and General Permit Facilities Privately Operated

Map Identification	Company	Location	Permit No.
1	AgRecycle	Fawn Township	PBR
2	Chelse's Greenhouse	Elizabeth Township	PBR
5	Diamond Mulch	Indiana Township	WMGM019D007
9	Federouch Landscape Supply Scott Township Yard	Scott Township	WMGR138B
11	Greenwood Cemetery	O'Hara Township	PBR
14	J A Rutter	Monroeville Municipality	WMGM019D003
15	Jefferson Memorial Park	Pleasant Hills Borough	PBR
19	Meinert Brothers Inc.	O'Hara Township	PBR
16	Meinert Landscaping Inc.	O'Hara Township	PBR
28	South Hills Landfill	South Park Township	PBR
31	Wood Waste Recycling, Kelso Road Facility	North Fayette Township	WMGM019SW001
32	Wood Waste Recycling, Prestley Road Facility	Collier Township	WMGM019SW002

**Table 6-5
Permitted Material Recovery Facilities**

Map Designation	Facility	Map Designation	Facility
1	Dlubak Glass	4	Royal Oak Recycling
2	Gateway Recycling	5	Stanson Paper Processing
3	Recycle Source	6	Waste Management Pittsburgh

Figure 6-2
Material Recovery Facilities/Sites



6.5 Petition Information for Non-Designated Facilities

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

- First, an entity must petition the County using the Petition Form to use a Non-Designated Facility shown in Appendix A.
- After receiving the Petition Form, the County 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 County will review and respond to the information in the Form within thirty (30) days.

If all information is in order on the Submittal Forms, the Health Department will notify the hauler, disposal facility, or municipality whether it will be at liberty to use the facility for disposal of Allegheny County generated municipal waste.

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

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CHAPTER 7 - IMPLEMENTING ENTITY IDENTIFICATION

The ACHD is responsible for implementing parts of the SWMP that involve the processing and disposal of municipal waste and recyclables. More specifically, the ACHD oversees agreements executed (or to be executed) by the County to secure adequate disposal capacity for municipal wastes that will be generated within Allegheny County over the next ten years. The Health Department 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 County's recycling program is administered by a full-time Recycling/Solid Waste Coordinator, who is a member of the ACHD staff.

The ACHD will continue to offer assistance to the existing and proposed municipal recycling programs. Likewise, the ACHD will continue to offer technical assistance to the non-mandated Allegheny County 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 County is 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 County-wide, assured long-term integrated 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 County.

These specifically include the power to:

- a. Develop, adopt, revise and implement a SWMP for the County.
- b. To maintain disposal contracts over the 10-year planning period.
- c. To approve or deny petitions to be added to the SWMP from disposal facilities.
- d. To approve or deny requests to use back-up facilities.

- e. To develop and implement an integrated municipal waste management system for the County to insure the proper collection, transportation, processing and disposal of all municipal waste generated within the County.
- 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 insure it is processed and disposed at designated facilities contained in the County Plan.
- h. To administer and enforce a registration program for haulers and vehicles transporting waste collected within the County.
- i. 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 within the County.
- j. To prepare reports to the PADEP as required by Act 101.
- k. To apply for and receive grants under Chapter 9 of Act 101 to develop and implement the Plan.

Local governments also have implementing responsibilities; these include, but are not limited to:

- a. Implementation of mandates specified in Act 101 and the Plan.
- b. Inclusion 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 and ACHD.
- 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 County SWMP.

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

July 2018	Draft Non-Substantial SWMP is released; thirty (30) day municipal review period begins.
August 2018	Municipal comment period ends.
September 2018	Comment/Response document prepared, final plan modifications are made based on municipal input and PADEP comments.
September 2018	Final SWMP submitted to the Board of Health for approval.
October 2018	Final SWMP adoption by Council/County Executive.
November 2018	Adopted plan is submitted to the PADEP for final approval.
December 2018	Anticipated PADEP Plan approval.
Winter 2018	Plan recommendations are formally conveyed to municipalities.
December 31, 2018	Former Disposal Capacity Assurance Contracts with Allegheny County expire.
January 2019	New Disposal Capacity Assurance Contracts with Allegheny County commence.
October 2019	Plan Implementing Documents executed – one (1) year from PADEP approval date.

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CHAPTER 8 - PUBLIC FUNCTION

8.1 Public Function

Allegheny County is the contractual signatory to the waste disposal capacity assurance agreements with other entities that were solicited under this SWMP. The Health Department 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 County 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 ACHD that the most suitable and cost-effective method of disposal of the municipal waste generated throughout Allegheny County is at multiple disposal facilities. In addition, it is the County's position, at this time, that the waste transfer facilities serving Allegheny County meet the current waste transfer needs of the County. The majority of the waste transfer facilities and the waste disposal facilities identified for contracts with the County in this SWMP are currently owned and operated by the private sector. The County 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 Allegheny County change.

The ACHD, and other municipalities within the County, 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 Allegheny County, or the individual municipalities to do so.

8.2 County Ownership

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. Allegheny County does not currently own or operate disposal facilities (landfills) or processing facilities (transfer stations) at this time. The County, and/or the County's municipalities reserve the right to own a disposal and/or processing facility in the future if it meets the needs of the Allegheny County residents. Eighteen (18) municipalities in Allegheny County own and operate composting facilities. The County currently sponsors five (5) drop-off locations for recyclable material. Additionally, thirty-two (32) municipalities sponsor

permanent or temporary recyclables drop-off sites. The County 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 Allegheny County and its residents and businesses as they may arise.

The County has determined, as part of this SWMP, that its obligation to provide for the processing and disposal of all municipal waste generated within the County 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 County in that it is:

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

Through the planning process, the County 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 fourteen (14) disposal facilities, the County has assured and confirmed sufficient disposal capacity and established ceiling tipping fees that are committed to the County through executed Agreements through 2028.

8.3 Revenues and Expenses

The development and implementation of the County 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 county elected to engage the professional services of consultants, engineers and solicitors to advise the County 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 County.

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

A Waste Disposal Capacity SOI for municipal waste transfer and processing/ disposal services was advertised in the local newspaper (Post-Gazette), in Waste Advantage and in the PA Bulletin. Fourteen (14) disposal facilities and four (4) transfer station facilities 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 Allegheny County's municipal waste stream are a requirement of Act 101 of 1988 which makes the County responsible for the proper disposal of the municipal wastes generated within its boundaries. The SWMP 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 SWMP are the following documents:

- Sample Municipal Waste Disposal Capacity Agreement (Appendix A)
- Samples of Various Forms of Municipal Bid Documents for Waste and Recyclables Collection and Disposal Contracting (Appendix I)
- Ordinance No. 16782 Air Pollution Control Regulations or Article XXI (Section 2105.50, Appendix J)
- Article VIII Solid Waste and Recycling Management Rules and Regulations (Appendix J)

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

- Plan Finalization and Approval Documents and County Resolutions (Appendix M)
- Waste Disposal Capacity Agreements (Appendix M)

In this SWMP, municipal waste collectors are permitted to deliver Allegheny County waste to any one of the approved waste disposal facilities listed within this SWMP who have entered into Disposal Capacity Agreements with the County. Chapter 6 contains a list of disposal facilities that have contracted with, or intend to contract with, Allegheny County for the transfer or disposal of Allegheny County's municipal wastes. These contracts provide certain assurances to Allegheny County 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 2 - Detailed Summary of Responses).

The ACHD Article VIII Solid Waste and Recycling Management Rules and Regulations, Section 815, Conformity with Allegheny County SWMP, stipulates that all municipal waste generated in the County must be disposed or processed only at landfills cited in the Plan. This change relieves the County of the necessity of obtaining separate ordinances from all of the 130 local governments.

CHAPTER 10 - ORDERLY EXTENSION

In the preparation of this SWMP, demographic information prepared by the ACHD was used for an orderly extension of data in such a manner as to be consistent with the needs of the area. 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 SWMP process, including the requirements for a Non-Substantial Plan Revision, which PADEP has determined applies to this SWMP.

Existing waste disposal facilities that responded to the SOI and deemed acceptable are used and made part of this SWMP. The contractual arrangements resulting from the Waste Disposal Capacity SOI for transfer and disposal services include facilities that currently handle the vast majority of municipal wastes generated by Allegheny County, and the SWMP encourages extension and development of drop-off recycling facilities by both public and private sponsors. The County will continue to offer technical support to municipalities with composting sites in the County, as well as drop-off sites that accept a wide variety of conventional and hard-to-recycle materials in the County.

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, residual waste, sludge, septage, and RMW. To that end, every ten years, the County will perform a comprehensive review of its Plan and an analysis and description of the waste being generated in the County to ensure that the System is performing as planned and waste is being recycled and disposed consistent with the Plan and Act 101.

The County shall prepare and file revisions to this Plan as deemed necessary by the County and in the manner provided for by Section 501(c) of Act 101. The County shall continue to implement the SWMP for the remaining years following adoption of this Plan. The County will monitor its capacity assurance if necessary and as required

under Act 101. The County's implementing documents are distinct from the Plan and may remain in effect beyond the 10-year planning period.

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 deep) 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 in 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 influence the available capacity of municipal waste landfills that service Allegheny County, should those residual wastes displace landfill capacity that is needed for municipal waste disposal.

The Marcellus Shale drilling industry currently has sixty-three (63) active gas wells in Allegheny County. The potential impact of this industry’s residuals on available municipal waste disposal capacity for Allegheny County cannot be ignored in this plan. Contracts for long-term disposal capacity of municipal waste generated in Allegheny County need to confirm that municipal waste disposal capacity is “set aside” for the County’s use, and will not be negatively impacted by Marcellus Shale residuals disposal needs. This fact underscores the need for the County to secure long-term MSW disposal capacity as part of this planning process. MSW disposal capacity assurance contracts will assure adequate capacity to meet Allegheny County’s needs over the 10-year planning period.

The following facilities responded to the SOI and stated that they either currently accept or are permitted to accept Marcellus shale residuals:

- Advanced Disposal
- Arden Landfill
- Kelly Run Landfill
- Monroeville Landfill
- Northwest Sanitary Landfill
- Seneca Landfill
- South Hills Landfill
- Valley Landfill

- Westmoreland Sanitary Landfill
- Carbon Limestone Landfill
- Evergreen Landfill
- Greenridge Reclamation Landfill
- Imperial Landfill

11.2 Illegal Dumping

11.2.1 Issues and Causes

Like most counties in Pennsylvania, illegal dumping is prevalent in rural areas of Allegheny County. While most would view illegal dumps as eyesores, they also create significant concerns for public health and safety, property values, and the general quality of life. When they are ignored, these sites often become chronic dumping areas and pollute the soil, surface water, and groundwater. Preventing illegal dumping will require stakeholders in the County to address factors that contribute to this problem. Cleaning up existing dumps will require cooperation from residents, businesses, haulers, and disposal facilities in the area.

Some haulers will not service rural or isolated parts of the County, thus forcing residents to self-haul their waste to the nearest landfill or transfer station for proper disposal. In addition, some haulers will not collect waste that may be considered construction and demolition (C&D) waste generated at the residential level, because of remodeling and similar activities. These materials include items such as drywall, roofing, shingles, siding, lumber, bricks, and concrete. Other difficult-to-dispose-of items such as tires, auto parts, appliances, and furniture often end up in illegal dumps. Proper disposal of these materials may require that the residents haul them to a disposal facility during operating hours (or rent a roll-off bin from the waste hauler), and pay to dispose of the waste, an inconvenience or expense that some wish to avoid.

Some homeowners in municipalities with individual subscription services may choose not to subscribe to a waste collection service, simply to save money, or to “share” a hauling service with neighbors or relatives at one house (a practice that is not technically allowed by most haulers). When it becomes a burden for homeowners to haul this material to a disposal facility, or when a contractor who has agreed to

dispose of the material decides to avoid the cost of disposal, some of this waste may also be dumped illegally.

11.2.2 Illegal Dump Surveys

Allegheny Cleanways was founded in 2000 as a chapter of PA Cleanways (now Keep Pennsylvania Beautiful), and incorporated as a 501(c)(3) in 2005. The organization empowers and engages people to eliminate litter and illegal dumping in Allegheny County. Since its origins, Allegheny Cleanways has been instrumental in engaging and collaborating with community groups to remove illegally discarded debris from vacant lots, greenways, streets, and riverbanks; and to prevent litter and illegal dumping from occurring in the first place.

Illegal dumpsites pose a direct threat to the health and safety of humans and animals. Illegal dumping attracts disease-spreading rodents and mosquitoes by giving them a place to live and breed. West Nile Virus, carried by mosquitoes, has been a primary concern of environmental officials. Illegal dumps also can be a source of physical injury for humans and animals due to broken glass, rusty metals, and toxic substances. Methamphetamine labs, used to produce the illegal drug “crystal meth,” are becoming more and more common. The materials used to make the illegal drug are tossed along the roadside in illegal dumps, and are extremely toxic.

Illegal dumping pollutes our soil, surface and groundwater supplies, as well as the air we breathe if a site catches on fire. The emissions released by the burning of plastics and HHW can be extremely toxic. It is also ugly, and ruins the beauty of natural areas, including many public places such as community and state parks, state forests, and game lands.

Economically, illegal dumps are expensive to clean up. The estimated cost to clean up a site is \$619 per ton for cleanup and removal, according to KPB (2014). Illegal dumpsites also can influence property values, can be a liability for property owners, and can affect property purchases and transfers. Tourism revenues also can be affected by illegal dumps. Donation of free disposal capacity by area landfills can help offset the cost of disposing of some of these materials.

Areas that are considered an illegal dumpsite are defined by a significant mass of trash discarded unlawfully on public or private land and waterways. It can be the result of a single event, such as a renovator dumping demolition debris over a neglected hillside, or can grow over time. Highly littered areas sometimes accumulate so much material that they appear as if illegal dumping has occurred and untended sites often attract more debris.

11.2.3 Causes of Illegal Dumpsites

Municipal curbside trash collection is unavailable.

Because it is not mandated by the state, trash collection options are dependent on the city or municipal government. As many rural and small-town municipalities lack funding for mandatory trash collection, it is up to the resident to pay for trash collection. Communities that depend on private subscription for waste collection services have reported greater dumping problems. Inherent inefficiencies and associated higher costs exist in almost all private subscription systems because trucks must travel long distances between customers.

Recycling programs are unavailable or inconvenient.

Act 101 dictates that all communities with populations over 10,000, and densely populated municipalities between 5,000 and 10,000, have recycling programs. Communities that fall outside these parameters must opt for curbside or drop-off recycling programs on their own. Depending on the county, many or all of these communities do not have funding to support a curbside-recycling program. Curbside recycling communities have reported a lower incidence of residential waste dumping.

Disposal of Construction and Demolition debris (C&D).

C&D debris is a serious solid waste management issue because of the amount that is generated each year, along with the lack of convenient and/or affordable disposal options available. C&D debris is often found in illegal dumps and creates a compounded problem because some of the materials may be hazardous, such as wood that has been chemically treated or painted with lead-based paint, insulation containing asbestos, or shingles.

Shortage of enforcement.

Unfortunately, many communities cannot devote people and resources to effectively deal with illegal dumping. As a result, dumpers do not fear prosecution and have no reason to stop their habits.

Education.

Illegal dumping has been a learned habit for many. Prior to anti-dumping laws, it was common practice to use open town dumps, burn or bury trash, or dump in a convenient out-of-the-way area. Today, we know the harmful effects from illegal dumping. Education is fundamental to diminish the habits learned, and to teach the public proper and safe disposal practices.

11.2.4 Dump Survey Study for Allegheny County

Allegheny Cleanways conducted a survey of open dumping practices in Allegheny County in 2017. In this study, Allegheny Cleanways identified 486 dumpsites containing an estimated total of 1,404 tons of waste. The 486 dumpsites were located in seventy (70) of the County's thirty (30) municipalities. These dumpsites ranged in size from a few hundred pounds to over 350 tons of waste, with the majority of the sites (92%) containing less than five (5) tons. The largest sites tended to also be tire dumps, containing 500 or more tires.

The materials most commonly found in these illegal dumpsites were tires, household trash, and renovation debris. Eighty percent (80%) of the sites had at least one tire amongst the debris, with several sites having more tires than could be counted. Yard waste and plastics were found at more than half of the sites and televisions were found at more than 1/3 of the sites.

The cost to cleanup all sites is estimated to be over \$842,000. Of that, approximately \$80,000 will be for recycling/proper disposal of illegally discarded car tires alone. An additional \$28,000 of that cost will be for proper handling/recycling of televisions.

Fifty-one percent (51%) of the illegal dumpsites were located along a roadway or on wooded hillsides. The majority of sites were located in or near some kind of green space and almost twenty-five percent (25%) of the sites were located within 100 feet of a visible waterway. A total of 379 of the 486 sites were less than 100 feet from someone's home, and all but seven sites were within 0.5 miles of a residence. The

analysis showed a direct correlation with the number and tonnage of material at the illegal dumpsites and those municipalities that have areas of high or highest need on the environmental justice index, meaning they are communities, which bear a larger proportion of environmental risk factors.

Although TV's were found in most municipalities, 78% of all TVs found were found in municipalities without access to curbside recycling of e-waste. Based on the survey, 496 TVs were found in municipalities without curbside e-waste collection, while 142 TVs were found in municipalities with curbside e-waste collection.

11.3 Funding for Allegheny County Programs

As part of this SWMP, 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 Allegheny County to maintain and expand their recyclables collection program and waste minimization programs. Funding for Allegheny 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 Future Challenges of Waste Management in Allegheny County

Beyond funding concerns, Allegheny County wants to develop a method that engages all of the municipalities in the County to help them understand and support the goals of the SWMP. 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 SWMP 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 County Plan must insure 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 County 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 County 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 Allegheny County tonnage.

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CHAPTER 13 - PUBLIC PARTICIPATION

Allegheny County has used a combination of means and methods to provide for public participation both in the preparation of and in the implementation of the 2019 SWMP. The ACHD reactivated the Allegheny County SWAC mid-year 2016 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 County, first met to discuss the SWMP on May 17, 2016, and has since met on September 13, 2016; November 30, 2017 and June 14, 2018 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 K.

The ACHD established and has maintained a public information webpage on its website (<http://www.county.allegheny.pa.us/Health-Department/Programs/Waste--and-Water-Related/Solid-Waste-Management-and-Recycling/Allegheny-County-Solid-Waste-Management-Plan.aspx>) to disseminate information on the project electronically to the SWAC and the public, and to provide information access to those who could not attend the SWAC meetings.

The existing SWMP for Allegheny County, ratified and adopted as of December 2008, and prepared through its own public participation process, was used as a basis for the 2019 SWMP. Changing conditions and updated information were evaluated and incorporated in the SWMP.

The 2019 Allegheny County SWMP was released for a thirty (30) day comment period on July 23, 2018 to the SWAC members and the one hundred and thirty (130) constituent municipalities of Allegheny County, as well as the PADEP. No comments were received by the municipalities. A comment was received by PADEP to add the Iron City Express Transfer Station to Table 6-1 and subsequently, Figure 6-1. This comment was addressed prior to Plan Ratification by the Council/County Executive.

The 2019 Allegheny County SWMP was presented to the Allegheny County Board of Health and approved on September 12, 2018.

The 2019 Allegheny County SWMP was approved by the Council/County Executive by Resolution on May 7, 2019.

The 2019 Allegheny County SWMP was sent to the PADEP on June 21, 2019 for review, comment and approval.