

BERKS COUNTY
MUNICIPAL WASTE MANAGEMENT
PLAN REVISION
BERKS COUNTY, PENNSYLVANIA



FINAL

October 2014

**BERKS COUNTY
MUNICIPAL WASTE MANAGEMENT PLAN REVISION
BERKS COUNTY, PENNSYLVANIA**

EXECUTIVE SUMMARY

County Municipal Waste Management Plans are required to be revised every 10 years in accordance with the Pennsylvania Department of Environmental Protection (DEP) Municipal Waste Management Regulations. The Plan must include descriptions of the origin, content, and weight of municipal solid waste currently generated in the planning area as well as projections for waste generation during the course of the planning period. The Plan must include an evaluation of available disposal capacity for county-generated wastes and must provide a list of facilities that will provide capacity assurance during the planning period. The Plan must include an evaluation of the county's recycling programs, including efforts put forth to achieve the statewide goal of 35% recycling by the county.

Waste Generation and Disposal Practices

The Berks County Municipal Waste Management Plan Revision (Plan Revision) contains descriptions and estimates of municipal solid waste generation. A municipal survey may be conducted at a later time to gain input on the concerns and needs of the municipalities with respect to waste collection and recycling.

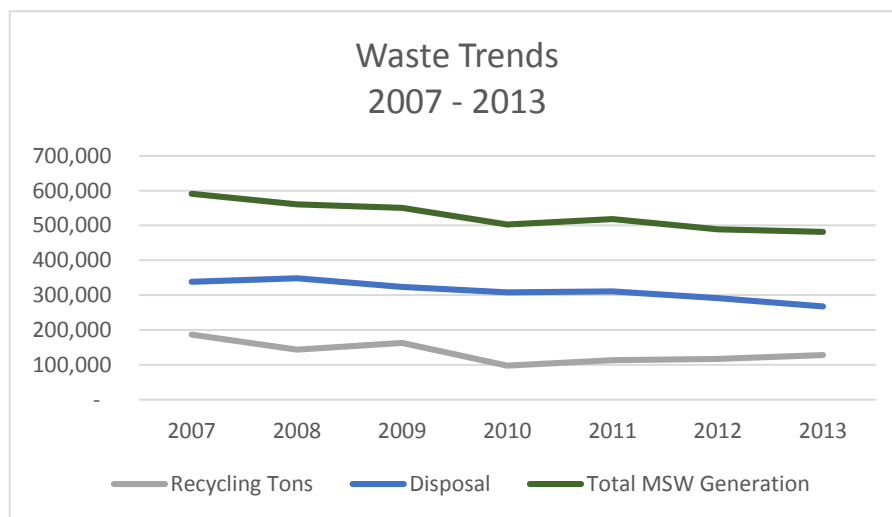
According to waste disposal reports filed with the DEP from 2003 to 2013, the majority of municipal waste from Berks County was disposed of at six landfills. Four of these landfills are operational in Berks County (Delaware County Solid Waste Authority – Rolling Hills Landfill, New Morgan Landfill Co. – Conestoga Landfill, WBLF Acquisition Co., LLC – Western Berks Landfill and F.R.&S. – Pioneer Crossing Landfill), one is operational in Chester County - Lanchester Landfill, and one in Schuylkill County-the CES Landfill.

The meaning of “waste disposal” in this document is equivalent to the term “Net Discards” as it was used previously in the 1990 Plan and 2005 Plan Revision and in other older documents. This term is defined by subtracting recycled materials from “Gross Discards”. “Gross Discards” is thus equivalent to what is referred to as “waste generation” in this document.

MUNICIPAL WASTE COMPONENT

Year	Population	Municipal Solid Waste Component Generation (tons) (b)	Municipal Solid Waste Disposal (tons) (a)	Recycled Tons (c)	Projected County Recycling Rate	Total Municipal Solid Wastes (tons) (d)
2010	411,442	405,259	307,564	97,695	24%	502,310
2011	411,812	423,710	310,430	113,280	27%	518,120
2012	412,183	408,348	291,168	117,180	29%	489,226
2013	412,554	395,525	267,248	128,277	32%	481,267
2014	412,925	434,821	286,982	147,839	34%	521,483
2015	413,297	435,212	282,888	152,324	35%	521,953
2016	413,669	435,604	283,142	152,461	35%	522,422
2017	414,041	435,996	279,037	156,958	36%	522,892
2018	414,414	436,388	279,288	157,100	36%	523,363
2019	414,787	436,781	275,172	161,609	37%	523,834
2020	415,160	437,174	275,420	161,754	37%	524,306
2021	415,534	437,567	271,292	166,276	38%	524,777
2022	415,908	437,961	271,536	166,425	38%	525,250
2023	416,282	438,355	267,397	170,959	39%	525,722
2024	416,657	438,750	263,250	175,500	40%	526,196

- a - DEP Waste Destination Report values for municipal waste component (excludes all other waste components such as sewage sludge, construction, etc.) for Berks County. Years 2014 through 2024 are based on projections.
- b - Waste generation: equals sum of Waste Disposal and Reported Recycling.
- c - Act 101 Mandated materials only - From PADEP Reporting System (RE-TRAC)
- d - Municipal waste component including other components such as sewage sludge, construction, etc., excluding residual waste.



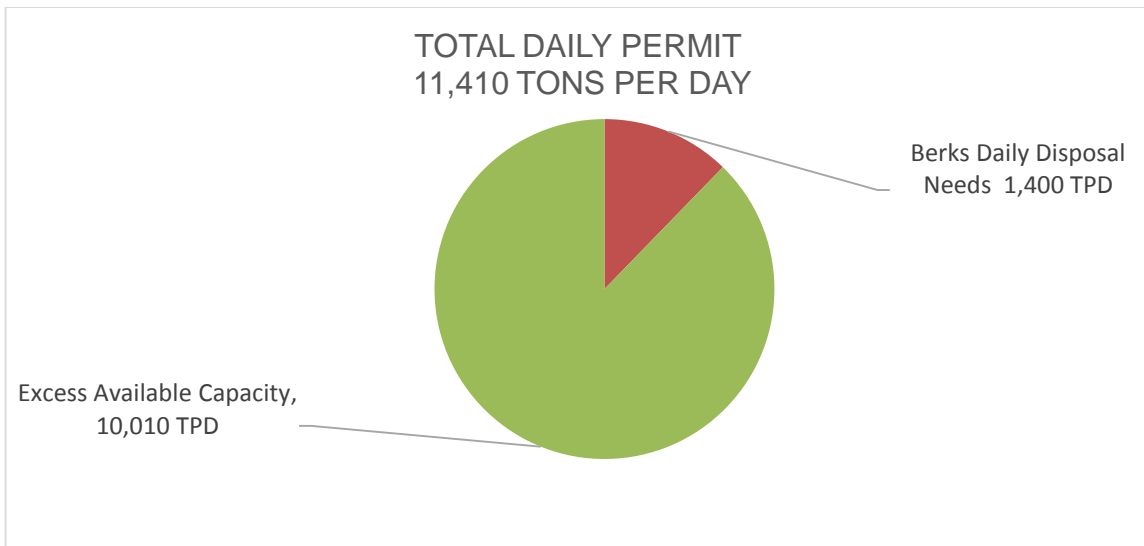
Waste Projections and Disposal Capacity

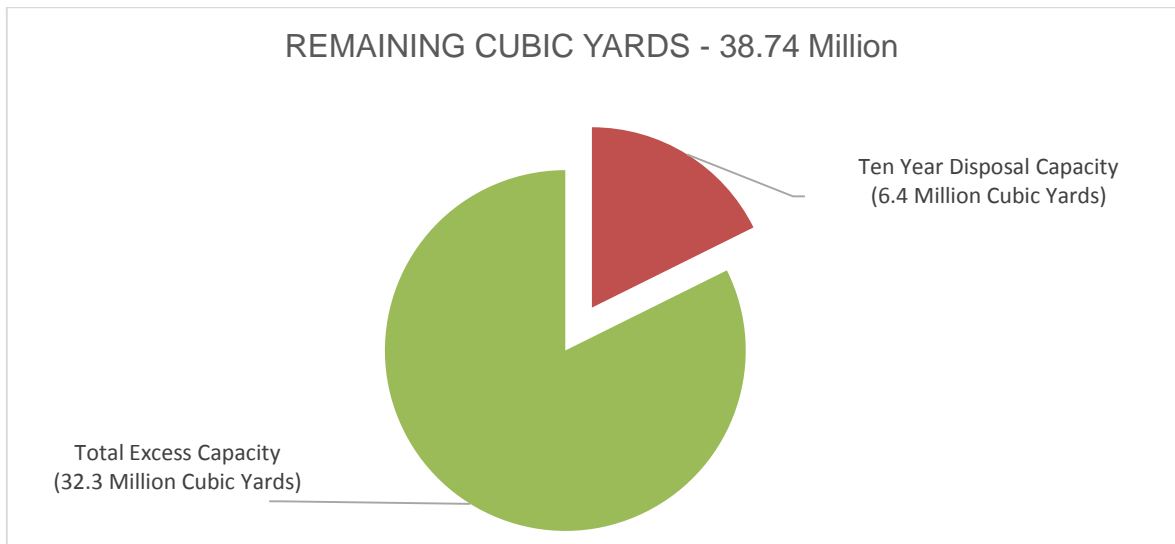
The projected total capacity required for this planning period is approximately 3.6 million tons. This figure includes municipal, construction and demolition (C&D), sewage sludge, infectious/chemotherapeutic (I/C), ash residue and asbestos waste types but does not include materials that have been removed from the waste stream as a result of recycling and waste reduction or residual wastes. It is estimated that residual wastes to be disposed of over the ten-year planning period will total 1.5 million tons. This value, added to the 3.6 million tons of municipal solid waste, results in a disposal capacity requirement of nearly 5.1 million tons over the ten-year planning period. DEP requires Counties to evaluate the impact of municipal waste and residual waste on disposal capacity. Therefore, Berks County will use 5.1 million tons as its estimate of solid waste in this Plan Revision.

Three landfill companies, have agreed to provide capacity for Berks County municipal solid waste over the ten-year planning period. An evaluation of the capacity offered by these facilities, based on the remaining life of the facility and the County’s annual waste disposal projections, was conducted. Based on this evaluation, the County has sufficient capacity available for the ten-year planning period.

FACILITIES PROVIDING CAPACITY ASSURANCE

Owner	Facility Name (Location)	Type of Facility
WBLF Acquisition Co. LLC	Western Berks Landfill (Berks County)	MSW landfill
Delaware County Solid Waste Authority	Rolling Hills Landfill (Berks County)	MSW landfill
New Morgan Landfill Company, Inc. Wholly owned subsidiary of BFI Waste Systems	Conestoga Landfill (Berks County)	MSW landfill





Recycling Programs and Goals

Projections calculated for this Plan Revision take recycling into consideration, as required by DEP. For the purpose of this Plan Revision we are only using Act 101 mandated materials (Newsprint, High Grade Office Paper, Corrugated, Other Marketable Grades of Paper, Mixed Paper, Aluminum Cans, Steel or Bimetallic Cans, Glass Bottles and Containers and Plastic) when calculating the County Recycling Rate. Prior to 2006, recycling in Berks County had fallen short of DEP's recycling goal of 35%. The County's recycling rate was between 16% and 20% from 2000 to 2005. In 2006, recycling reporting greatly improved which allowed Berks County to surpass the 35% goal, simply by developing a better reporting system and improving communications with our municipalities. Unfortunately, in 2012 our recycling rate dropped to 29% when we had a drop in the economy, which resulted in less construction, more store closings and residents purchasing fewer goods. In 2013, the recycling rate increased to 32%. Sixteen (16) municipalities in Berks County are currently mandated to recycle and have curbside programs in place. Fifty-seven (57) municipalities in Berks County are not yet mandated to implement recycling programs. Of these 57 non-mandated municipalities, fifteen (15) have voluntary curbside programs in place and thirteen (13) have drop-off programs. In Berks County, 60% of all municipalities, mandated or not, have some form of recycling program in place.

Currently, Berks County is reporting recovery of Act 101 recyclables at approximately 32%. This percentage rises to 45% and increases by 48,000 tons, per year, when adding other recyclable materials, including yard waste, metals, asphalt, etc., to the tonnage recycled. It is anticipated that with the creation of new recycling programs, the expansion of existing programs, and increased/better reporting requirements, Berks County will surpass the DEP goal of 35% recycling by 2017. In addition, the Berks County Solid Waste Authority (Authority) has developed programs for the collection of household hazardous waste, pharmaceuticals, electronics, tires and paper shredding for County residents. The Authority conducts one-day collection events in the spring and fall of each year for the collection of hazardous waste, pharmaceuticals and paper shredding. A full-time center is

open three days a week for the collection of electronics and tires. In addition, to our spring and fall pharmaceutical collections, the Berks County District Attorney operates a medication drop-box program at nineteen (19) local police stations, for the proper collection and disposal of unwanted medications. The Authority also operates ten (10) recycling centers for paper, aluminum and tin cans, glass bottles and jars and plastic bottles and containers, for residents of Berks County.

County, Authority, and Municipality Obligations

This Plan Revision calls for the Authority to play an expanded role in developing new municipal recycling programs during this 10-year planning period. Each municipality will be asked to review their program to reach the recycling targets on an annual basis. If additional assistance is requested by the municipality, the Authority can assist municipalities by offering ideas, helping with grant writing, or encouraging municipalities to work together and share services. Different approaches may need to be developed for each municipality. These approaches will be consistent with their unique needs, geographic constraints and assets. The County and the Authority have seen that recycling rates can easily increase through cooperation between the County, the municipalities and the private sector, as well as through better reporting of recyclables by haulers and others responsible for collection and/or processing of recyclables.

The Authority may also have a monitoring responsibility over existing solid waste facilities in the County, including landfills, recycling process facilities, compost facilities, and permanent electronic recycling facilities. Exeter Township has one certified PADEP Host Municipal Solid Waste Landfill Inspector who inspects the Pioneer Crossing Landfill.

Monitoring Disposal Capacity

As area landfills reach final permitted capacity and begin closure operations, modifications to the Plan may be necessary to add additional disposal capacity or to develop additional landfills, transfer stations, or processing facilities. The Authority has been charged with monitoring landfills that provide disposal capacity to the County. As part of this monitoring responsibility, the Authority can perform technology assessments and feasibility studies which could include the feasibility of a County controlled landfill, transfer station, or processing facility. The County and the Authority will continue to look out for the best interests of County residents, businesses and industries in regard to environmentally sound, regulatory compliant and cost effective waste management methods.

Conclusion

The County has executed three (3) Disposal Capacity Agreements, guaranteeing excess capacity for Berks County waste throughout this planning period. The County will exceed the 35% recycling diversion rate by continuing to meet with our municipalities to determine needs and assistance needed to expand recycling programs, work with private recyclers to expand recycling markets and acceptable materials and expand Authority recycling programs to increase materials and expand types of services offered.

**BERKS COUNTY
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CHAPTER 1 – DESCRIPTION OF THE WASTE

Waste Generation and Composition

1.1 Introduction

County Municipal Waste Management Plans are required to describe the origin, content, and weight of municipal solid waste currently generated in the planning area, as well as, projections for waste generation during the course of the planning period. The planning area for this Plan Revision is Berks County, which is located in southeastern Pennsylvania and is approximately 864 square miles in size. The County's location is illustrated in Figure 1-1. Currently, the County is composed of 74 municipalities: one city (Reading), 44 townships, and 29 boroughs. Table 1-1 lists the 2010 Census Bureau's population for those municipalities.

1.2 Origin of Wastes

Waste generation information has changed since implementation of the 1990 Plan and 2005 Revision. This is due to factors such as increase in population, increase in residential development, and changes in commercial and industrial services, but also due to changed socio-economic factors, such as increased per capita income.

This Plan Revision includes all of the fractions of municipal waste, but is also required to take into consideration the volumes of residual waste that would likely be disposed of in the facilities utilized by the County. In this discussion, the waste types are broken out into the same categories, or components, as they are reported by DEP. These components are:

- Municipal (includes residential, commercial/industrial, and institutional)
- Sewage Sludge and Septage
- Infectious and Chemotherapeutic
- Construction and Demolition
- Ash Residue
- Asbestos
- Residual

FIGURE 1-1 LOCATION MAP BERKS COUNTY, PA

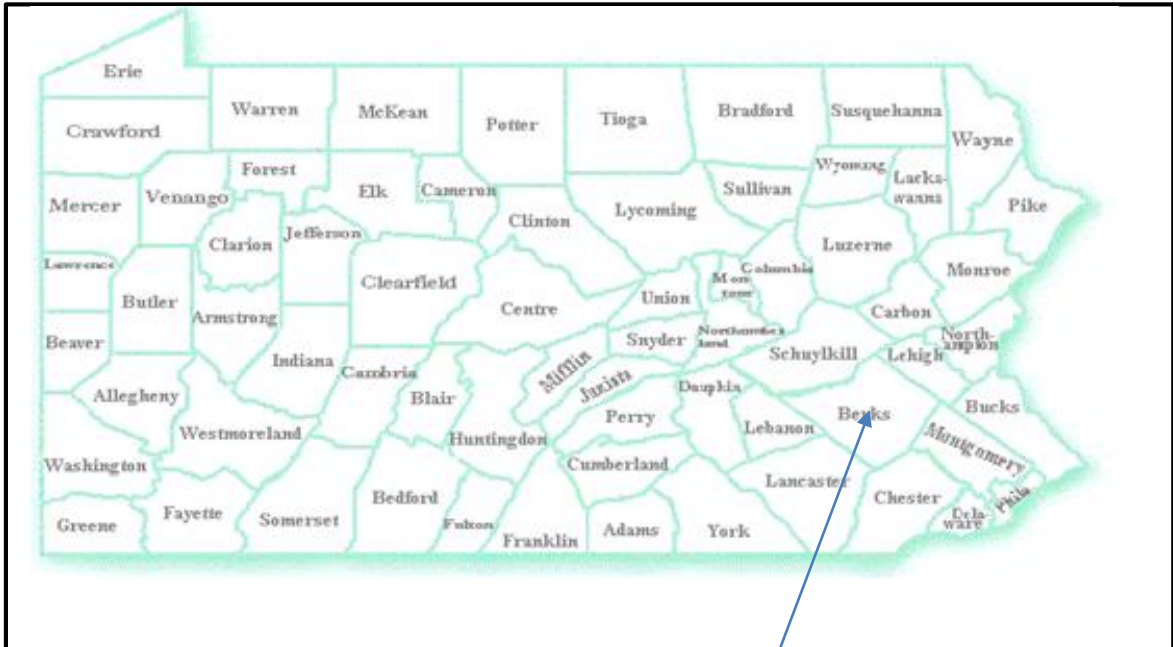


TABLE 1-1
BERKS COUNTY MUNICIPALITIES

Municipality	2010 Census Population	Municipality	2010 Census Population
Adamstown Borough	17	Marion Township	1,688
Albany Township	1,724	Maxatawny Township	7,906
Alsace Township	3,751	Mohnton Borough	3,043
Amity Township	12,583	Mount Penn Borough	3,106
Bally Borough	1,090	Muhlenberg Township	19,628
Bechtelsville Borough	942	New Morgan Borough	71
Bern Township	6,797	North Heidelberg Township	1,214
Bernville Borough	955	Oley Township	3,620
Bethel Township	4,112	Ontelaunee Township	1,646
Birdsboro Borough	5,163	Penn Township	1,949
Boyertown Borough	4,055	Perry Township	2,417
Brecknock Township	4,585	Pike Township	1,723
Caernarvon Township	4,006	City of Reading	88,082
Centerport Borough	387	Richmond Township	3,397
Centre Township	4,036	Robeson Township	7,216
Colebrookdale Township	5,078	Robesonia Borough	2,061
Cumru Township	15,147	Rockland Township	3,778
District Township	1,337	Ruscombmanor Township	4,112
Douglass Township	3,306	St. Lawrence Borough	1,809
Earl Township	3,195	Shillington Borough	5,273
Exeter Township	25,550	Shoemakersville Borough	1,378
Fleetwood Borough	4,085	Sinking Spring Borough	4,008
Greenwich Township	3,725	South Heidelberg Township	7,271
Hamburg Borough	4,289	Spring Township	27,119
Heidelberg Township	1,724	Strausstown Borough	342
Hereford Township	2,997	Tilden Township	3,597
Jefferson Township	1,977	Topton Borough	2,069
Kenhorst Borough	2,877	Tulpehocken Township	3,274
Kutztown Borough	5,012	Union Township	3,503
Laureldale Borough	3,911	Upper Bern Township	1,734
Leesport Borough	1,918	Upper Tulpehocken Township	1,575
Lenhartsville Borough	165	Washington Township	3,810
Longswamp Township	5,679	Wernersville Borough	2,494
Lower Alsace Township	4,475	West Reading Borough	4,212
Lower Heidelberg Township	5,513	Windsor Township	2,279
Lyons Borough	478	Womelsdorf Borough	2,810
Maidencreek Township	9,126	Wyomissing Borough	10,461

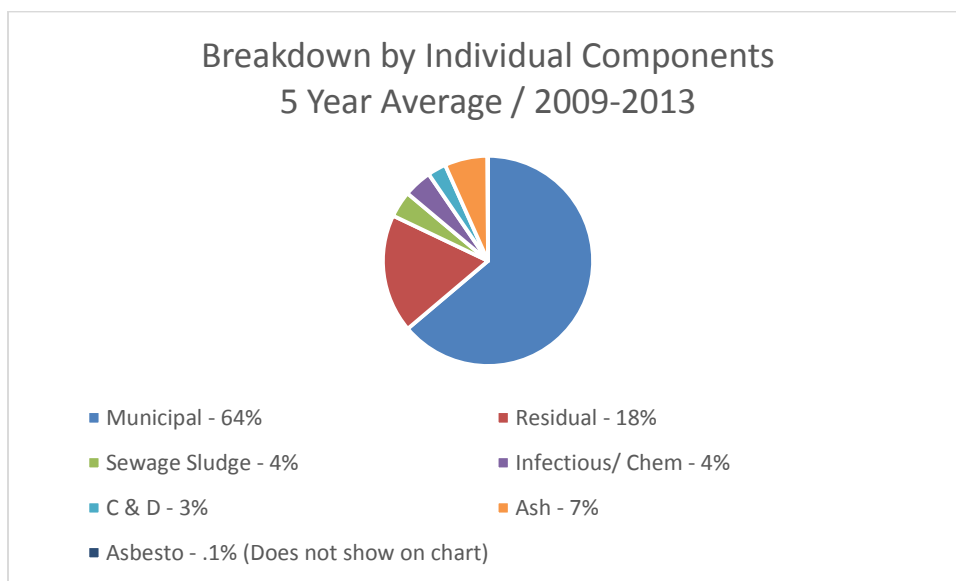
Source: U.S. Census Bureau, 2010

Total Berks County Population (Year 2010) = 411,442

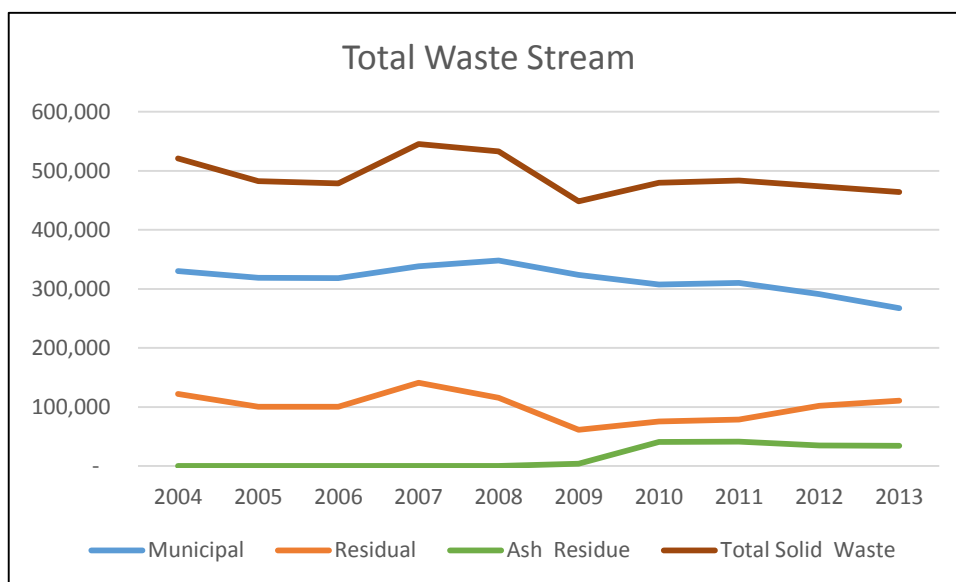
TABLE 1-2
TOTAL WASTE STREAM
BREAKDOWN BY INDIVIDUAL COMPONENTS
BERKS COUNTY, PA

Year	Municipal	Residual	Sewage Sludge and Septage	Infectious/ Chemotherapeutic	Construction and Demolition	Ash Residue	Asbestos	Total Solid Waste
2004	330,283	122,346	34,505	22,479	11,016	1	234	520,862
2005	318,705	100,644	25,087	21,174	16,764	5	183	482,564
2006	318,578	100,459	23,653	22,378	13,384	9	187	478,649
2007	338,487	141,032	22,923	22,270	20,048	58	377	545,193
2008	348,301	115,664	21,258	22,972	24,598	213	103	533,111
2009	323,636	61,616	21,851	23,153	14,002	3,721	401	448,380
2010	307,564	75,439	20,522	21,321	14,009	40,950	250	480,054
2011	310,430	78,710	17,102	20,587	14,882	41,137	702	483,550
2012	291,168	101,892	15,645	18,757	11,142	35,103	229	473,938
2013	267,248	110,996	19,627	18,421	12,998	34,259	437	463,986
Ave. 2004-2013	315,440	100,880	22,217	21,351	15,284	15,546	310	491,029
Ave. 2009-2013	300,009	85,731	18,949	20,448	13,407	31,034	404	469,982
Percentage of Total Waste Stream, Average 2009 - 2013								
	63.8%	18.2%	4.0%	4.4%	2.9%	6.6%	0.1%	100.0%
Percentage of Total Waste Stream, Average 2004 - 2013								
	64.2%	20.5%	4.5%	4.3%	3.1%	3.2%	0.1%	100.0%
Average Annual Growth Rate								
10-Years	-19.09%	-9.28%	-43.12%	-18.05%	17.99%	100.00%	86.84%	-10.92%
5-Years	-17.42%	80.14%	-10.18%	-20.44%	-7.17%	820.64%	8.95%	3.48%

Table 1-2 is based on the DEP waste destination reports for Berks County and shows the breakdown of wastes by individual components from 2004 and through 2013. In addition, Table 1-2 shows the 5-year and 10-year average annual growth rates of waste disposal.



The percentages represent the ratio of each individual component to the total waste stream, and are based on the most recent 5-year average (2009 – 2013) of reported disposal quantities by PA DEP.



Sewage, C&D, I/C and Asbestos showed little change in waste generation and disposal from 2004 – 2013, therefore these material were not shown on this graph.

Based on the data presented in Table 1-2, the average annual growth rate of total solid waste disposed in Berks County is down 11% over the last 10 years and up 3.4% over the last 5 years; these rates represent the averages for all waste types originating in Berks County and disposed of in Pennsylvania disposal facilities. It is especially interesting to note the fluctuation over the past ten years in all types of waste. These changes do not necessarily reflect solely a decrease in waste generation; rather, they also reflect the

effects of better reporting requirements instituted by DEP and of more wastes being disposed of at in-state facilities instead of out-of-state disposal facilities.

Figure 1-2 also shows the breakdown of wastes into individual components, and identifies which components are considered part of the municipal waste stream. Figure 1-2 further breaks down the growth rates into individual components of the municipal waste stream.

The municipal solid waste types, or municipal waste stream, include the municipal, sewage sludge, chemotherapeutic, construction, ash residue and asbestos waste components as categorized by the DEP waste destination reports. Table 3-3 presents the municipal waste stream (i.e., excluding the residual waste component) including the portions of the municipal waste stream comprised by the various waste components. This Table also projects those waste streams over the next ten years.

1.2.1 Residential Waste Generation

Berks County had a Census 2010 population of 411,442, which placed it as the ninth largest county in Pennsylvania in terms of total population. Berks County has experienced significant growth in population in the past ten years. Berks County’s growth of 37,804 people since 2000 was the sixteenth largest increase among all counties in Pennsylvania. The Year 2010 population represents a 10% increase since 2000. This increase is similar to the population change that occurred from 1990 to 2000, when the population grew by 11%. Refer to Table 1-3.

Based on the Census data and other population projections prepared by planning agencies, the population growth for Berks County is assumed to be 0.9% per year for the purposes of this Plan Revision.

**TABLE 1-3
BERKS COUNTY POPULATION TRENDS**

Year	Population	Change in Population	
		Population Increase	% of Increase
1990	336,523		
1990 -2000		37,115	11.0 %
2000	373,638		
2000 - 2010		37,804	10.1 %
2010	411,442		

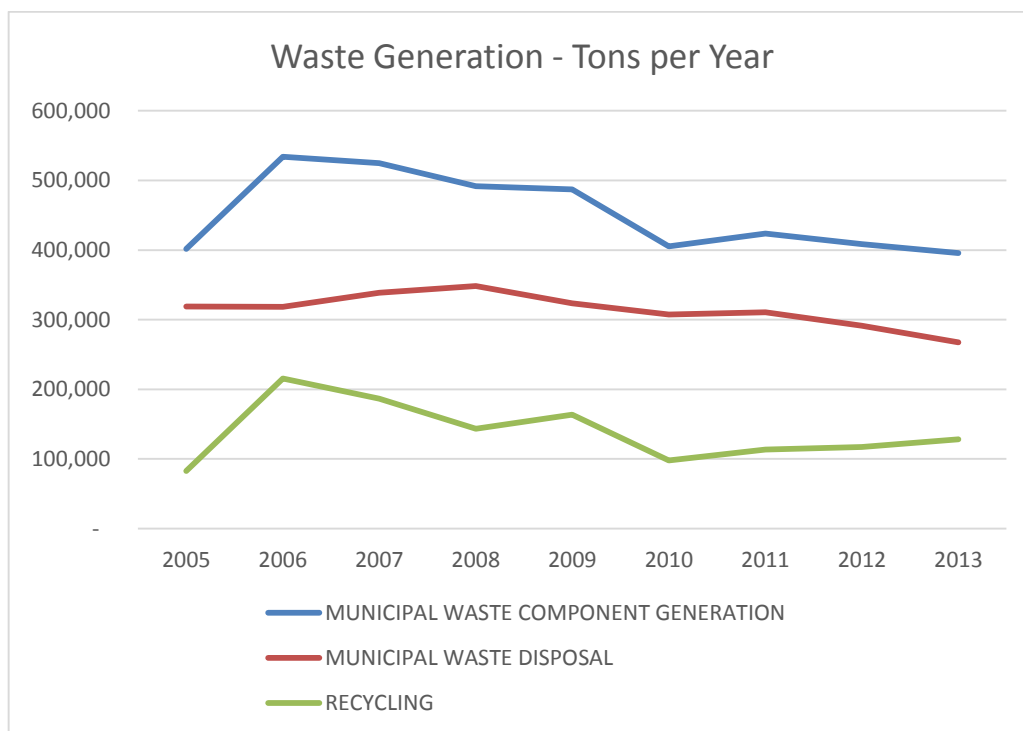
Source: U.S. Census Bureau

As a result of solid waste planning and educational efforts, Berks County has seen a steady increase in the recycling rate, as well as, a reduction in the total amount of waste disposed of in the County. Between the years 2005 and 2013, population in the County increased by 10%. In that same span of eight years, waste generation decreased by 6,000 tons and municipal waste disposal decreased by 51,457 tons (16%) while recycling increased by 45,521 tons. The recycling rate increased 11% from 21% in 2005 to 32% in 2013. See Table 1-4.

The most obvious benefits of the planning process have been the implementation of recycling programs to reduce the volume of waste, the securing of waste disposal capacity at state-of-the-art landfills to guarantee the long-term handling of the County's waste and the protection of the environment.

**TABLE 1-4
BERKS COUNTY RECYCLING RATE**

YEAR	MUNICIPAL WASTE DISPOSAL	RECYCLING	Recycling Percentage	MUNICIPAL WASTE GENERATION	POPULATION
2005	318,705	82,756	21%	401,461	363,452
2006	318,578	215,401	40%	533,979	363,452
2007	338,486	186,313	36%	524,799	363,452
2008	348,301	143,229	29%	491,530	363,452
2009	323,636	163,319	34%	486,955	363,452
2010	307,564	97,695	24%	405,259	411,442
2011	310,430	113,280	27%	423,710	411,812
2012	291,168	117,180	29%	408,348	412,183
2013	267,248	128,277	32%	395,525	412,554



1.2.2 Commercial/Industrial and Institutional Waste Generation

Berks County has historically had a diverse economy that provided a wide variety of jobs for its residents. According to the U.S. Census, the civilian labor force in the County as of January 2014 was 203,900. For this same time period, the unemployment rate was approximately 6.4%.

The manufacturing sector, which in 2012 employed approximately 21% of the County's workforce, according to the Pennsylvania Department of Labor and Industry as presented in the Berks County Workforce Investment Report, February 2014 edition, remains the major source of employment in Berks County. Other large employment sectors include health care, retail trade and accommodations and food service. As of 2008-2012, the per capita income of Berks County is \$26,478, which is lower than the state average of \$28,190 and is lower than the national average of \$28,051. Berks County median household income is \$55,021, which has grown by 23.05% since 2000. Like the residential sector, the commercial/industrial and institutional sectors also account for portions of the various municipal waste types disposed of in the County. The commercial/industrial and institutional sectors account for that portion of municipal solid wastes generated by nonresidential establishments. Together, these wastes are similar in composition to the residential portion of the waste stream, and, combined, the commercial/industrial and institutional sectors historically account for approximately 46% of the municipal waste stream in the County. Therefore, quantifying all of these wastes as "commercial" for the purpose of this Plan Revision is recommended. Table 3-4 provides estimates of future waste generation from these sectors.

Federal, state, or local government facilities operate in a variety of locations throughout Berks County. The County, along with the townships, boroughs, and the City of Reading, own and occupy office buildings used for daily government operations. Police and fire departments, municipal authorities, libraries, and the prison are also included.

Two hospitals along with numerous skilled nursing, personal care and assisted living facilities are found in the County. Due to the nature of their operations, a portion of the municipal waste generated in these facilities falls into a special category known as infectious/chemotherapeutic waste.

1.2.3 Community Activities

Community activities in the County include those sponsored by numerous organizations, including the County, municipalities, local community groups, local restaurant organizations, agricultural groups and historical societies. Some of the sponsored events include the Berks County Fair, a summer concert series, the Berks Jazz Fest, the Kutztown Festival, Halloween parades and other holiday celebrations, the PA Dutch Festival, craft shows and performing arts events. These events attract large crowds to specific locations resulting in the generation of unique waste streams.

1.2.4 Special Handling Wastes

Special handling wastes are defined as including sewage sludge and septage, Ash, Asbestos, infectious and chemotherapeutic, and construction and demolition wastes.

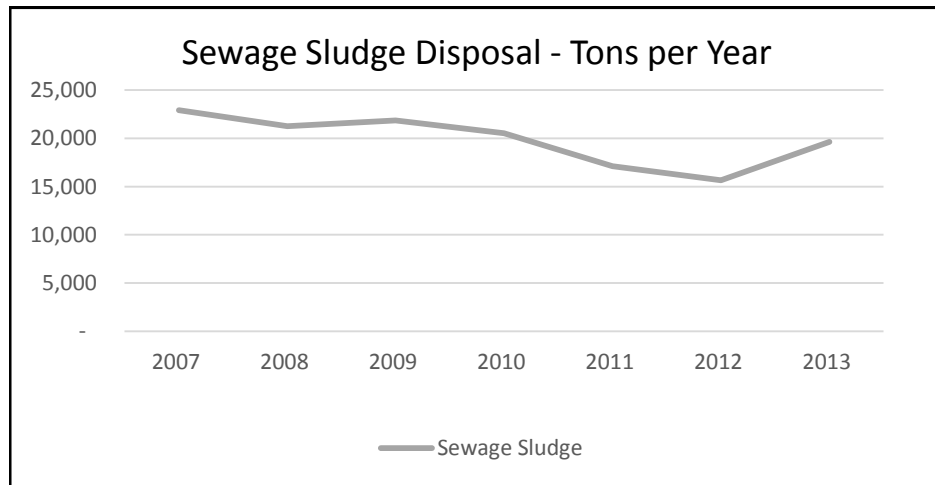
These are described in the following subsections.

1.2.4.1 Sewage Sludge and Septic Wastes

Sewage sludge is defined as liquid or solid sludge or other residues from a municipal sewage collection and treatment system and liquid or solid sludges and other residues from septic and holding tank pumping from commercial, institutional, or residential establishments.

No new survey was completed to gather data from water and wastewater treatment plants in the County, as the volumes of sludge generated and disposed of by these facilities is well known and established and is reported by the DEP on the Waste Destination Reports.

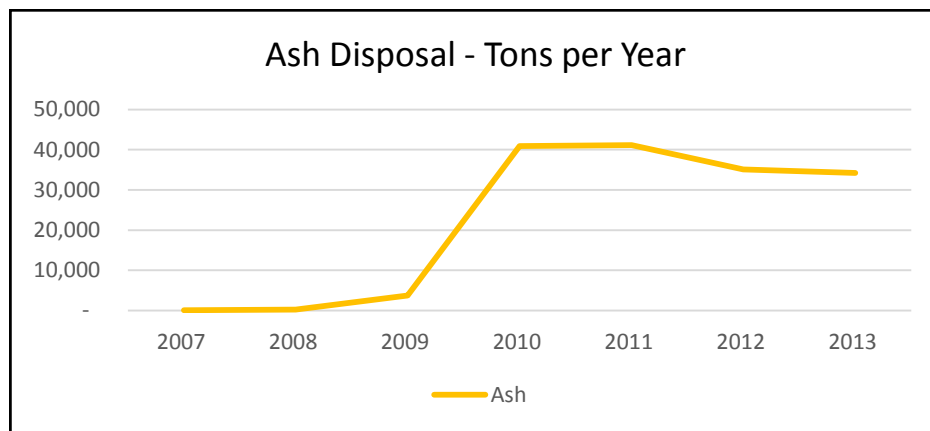
As Table 1-2 shows, the volume of County-generated sewage sludge and septage disposed of at Pennsylvania landfills has shown little variation in the past five years. The annual average sewage sludge disposal rate in Berks County over the last five years (2009– 2013) is determined to be 4%. It does not include sewage sludges that may have been disposed either out of state, which is highly unlikely given the existing transportation market for these materials in the County, or by other means, such as incineration (which accounts for only a small portion of disposal of sewage sludges) or land application.



1.2.4.2 Ash

Ash is defined as the powdery residue left after the burning of a substance.

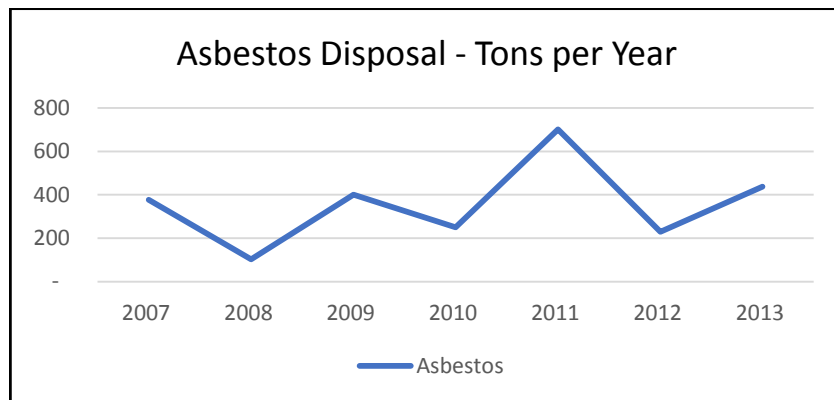
As Table 1-2 shows, the volume of County-generated ash disposed of at Pennsylvania landfills has shown a large increase in the past five years. The annual average ash disposal rate in Berks County over the last five years (2009– 2013) is determined to be 6.6%. The amount of Ash being generated in Berks County and disposed of in Pennsylvania has increase from 58 tons per year to 34,239. This Ash is being generated from the Evergreen Community Power Plant in Reading Pa. that opened in 2008. This does not include ash that may have been disposed of at disposal facilities outside of Pennsylvania.



1.2.4.3 Asbestos

Asbestos is defined as a heat-resistant fibrous silicate mineral that can be woven into fabrics, and is used in fire-resistant and insulating materials such as brake linings.

As Table 1-2 shows, the volume of County-generated asbestos disposed of at Pennsylvania landfills has shown a minor increase in the past five years. The annual average asbestos disposal rate in Berks County over the last five years (2009– 2013) is determined to be .1% and is a very small amount of waste.



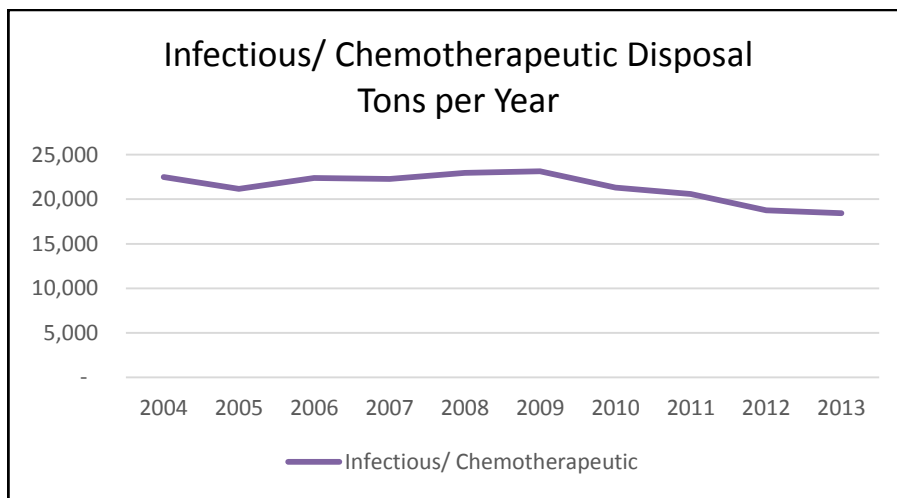
1.2.4.4 Infectious and Chemotherapeutic Wastes

Infectious and chemotherapeutic (I/C) wastes are those wastes generated at hospitals, medical offices, or other medical-related facilities (including veterinary offices) that could cause adverse health effects to humans in the case of accidental and uncontrolled exposure. Infectious wastes include cultures of biological agents or vaccines, pathological wastes, human blood and body fluid waste or items that have been in contact with these fluids, animal wastes, used sharps (needles), or mixtures of the above. Chemotherapeutic wastes result from the production or use of agents used for the purpose of killing or stopping the growth of malignant cells.

DEP reports these wastes separately from municipal waste on waste destination forms, although I/C wastes must be included in projections for generation and capacity. Table 1-2 shows the volume of County-generated I/C wastes disposed in Pennsylvania facilities over the past ten years (2004 - 2013). The amount of I/C

waste generated and being disposed of in Berks County has remained stable at 4.4% over the past five and ten year reporting period.

From 2009 to 2013, the I/C wastes generated in Berks County were disposed of at either the Pioneer Crossing Landfill or the Conestoga Landfill both located in Berks County or at out of state facilities, which are unknown.



1.2.4.5 Construction and Demolition Wastes

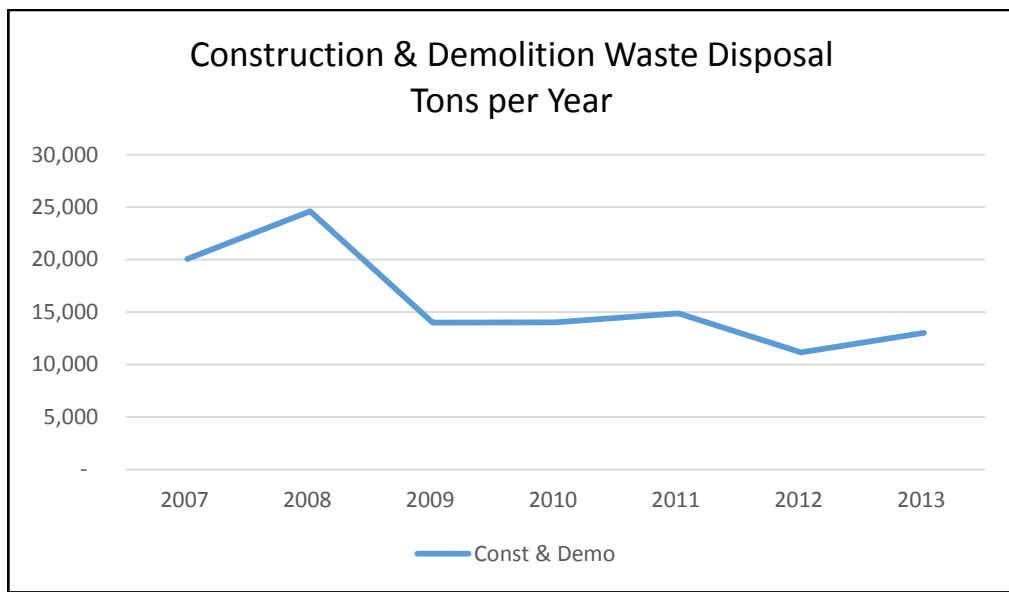
Construction and demolition (C&D) wastes are those that result from the construction or demolition of buildings and other structures. This waste type can include wood (lumber, scrap, and particle board), vinyl and plastic, plaster, metals, asphalt and other paving materials, bricks, blocks, concrete, and other aggregate materials. As previously indicated DEP reports these wastes separately from municipal waste on destination forms.

Construction and Demolition Waste (C&D) is generated from construction, renovation, and demolition activities. C&D is considered a subset of municipal waste in Pennsylvania and therefore, it is included as a waste type that must be considered in the County planning process. C&D waste includes asphalt, concrete, earth, sand, trees, steel, brick, lumber, roofing materials, carpet remnants, dry wall, vinyl and plastics and other similar materials. An average composition is difficult to define because the waste varies with the specific activity. For instance, new home construction produces a different waste stream than remodeling or demolition. Economic and seasonal conditions affect the construction industry in climates similar to Pennsylvania. While the volume of municipal waste in general remains relatively constant, the volume of C&D material fluctuates. For this and other reasons, projecting generation rates and quantities for an extended period is difficult and not totally reliable.

In 2013, Pennsylvania landfills reported the disposal of approximately 13,000 tons of C&D waste originating in Berks County. Unlike MSW, C&D waste is not consistently collected and transported by municipalities or through ongoing arrangements with private garbage haulers. Much of it is handled by construction/demolition contractors, or homeowners and businesses that generate the waste. For a variety of reasons, C&D waste does not always make its way to a proper disposal facility. Some of the material

is burned on construction sites and is never accounted for. Another common method used by homeowners and contractors is illicit dumping. In fairness, some C&D material that is not destined for a landfill may actually be put to a beneficial use. Bricks and concrete and other masonry materials can appropriately be used for clean fill, both onsite or at other locations and facilities. It is also common for contractors to recover and store materials that might have a beneficial re-use in a future project. For these reasons C&D waste is a difficult type of waste to confidently quantify with any great degree of accuracy.

The volume of C&D wastes that was generated and disposed of in Pennsylvania disposal facilities over the past five and ten years has remained stable at 3% of the County waste.

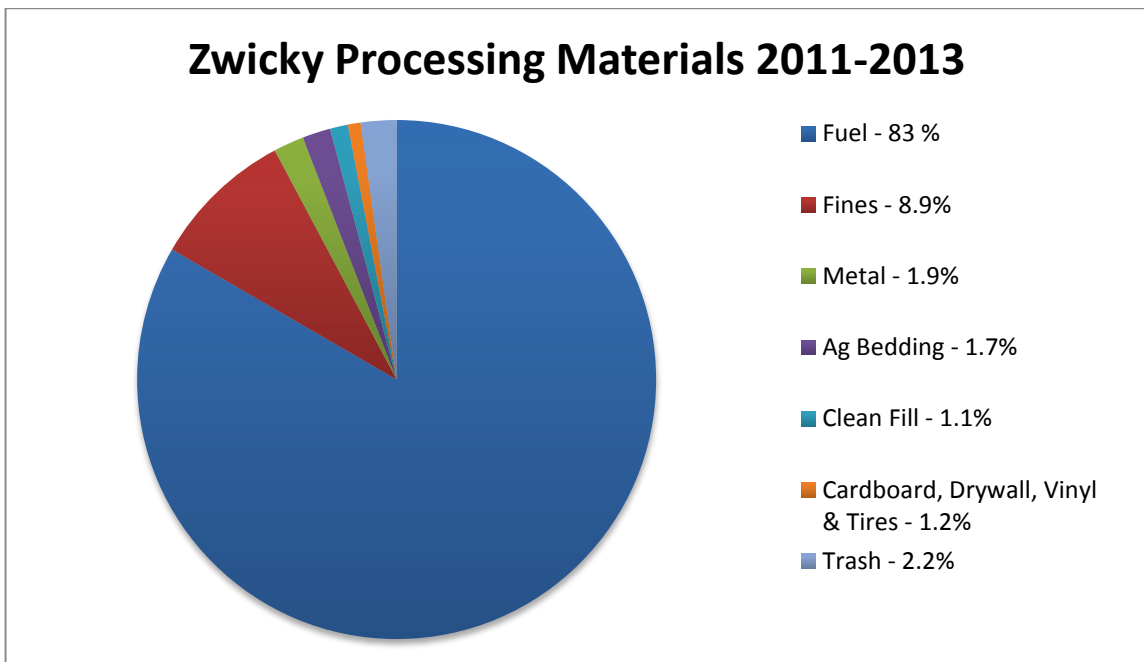
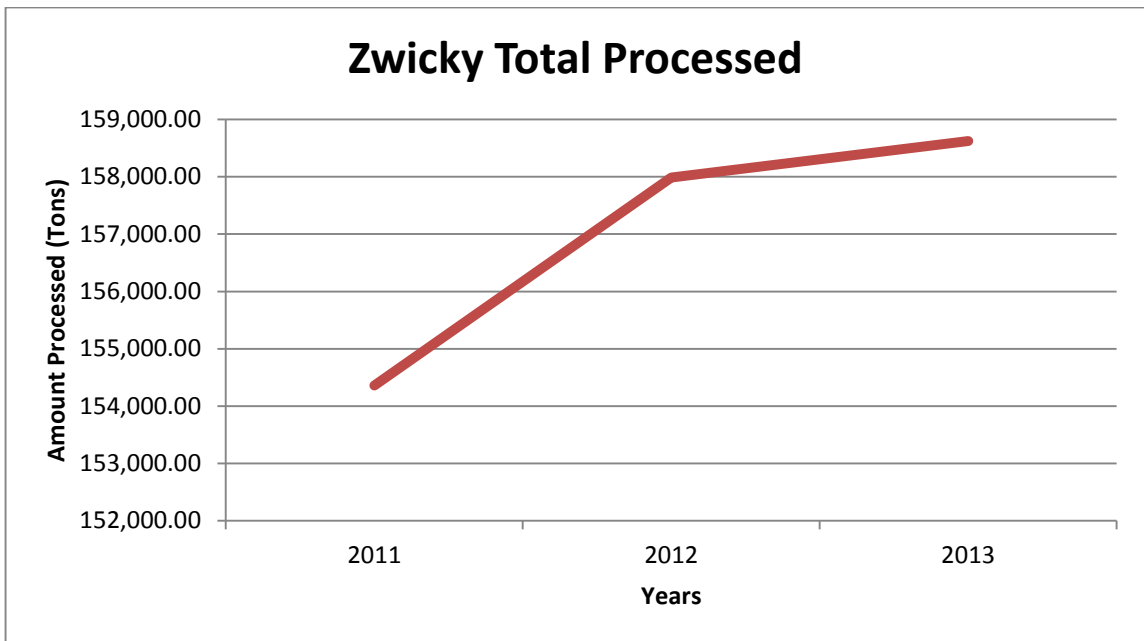


C&D wastes are typically more variable than the generation of municipal solid waste. The fluctuation in figures for C&D waste disposal, and thus generation, is associated with the new real estate development and redevelopment observed in the County, as well as C&D material recycling. A significant volume of material may be recycled at area transfer stations and/or recycling/processing facilities and is not included in the DEP waste destination reports. These facilities can achieve recycling rates of up to 98% of acceptable materials, such as metal, lumber, plywood, particle board, plastic and vinyl, concrete, stone, rock, and cardboard. These facilities have a huge impact on the amount of construction and demolition waste being diverted from area landfills.

Zwicky Recycling and Processing Center located in Fleetwood, Berks County, accepts C & D waste from Berks County as well as the surrounding area. They process C & D Waste through their facility using machines and man-power to create a finished product that will either be recycled, used as a bio-mass-fuel at local incinerators, used as clean fill, daily cover for area landfills or other beneficial uses. The use of bio-mass-fuel is a form of renewable energy that takes organic materials and burns them to create electricity and other forms of power. Using these refined recycled product keeps Berks County cleaner with less air pollution and reuses hundreds of thousands of tons of waste each year that would otherwise be disposed of in a landfill. As there will always be a demand for bio-mass-fuels, Zwicky's facility plays an important role in diverting

recyclable and reusable materials from area landfills. They are currently reusing nearly 98% of all C & D waste brought to their facility and sending out approximately 2% of that material to area landfills. Over the past three years the amount of materials processed through their facility has significantly increased showing a higher demand for this type of service.

The tonnages below include all waste processed through the Zwicky facility, not just waste from Berks County. Information on the County where this waste is generated is currently tracked by Zwicky, however, this information is not readily available at this time.



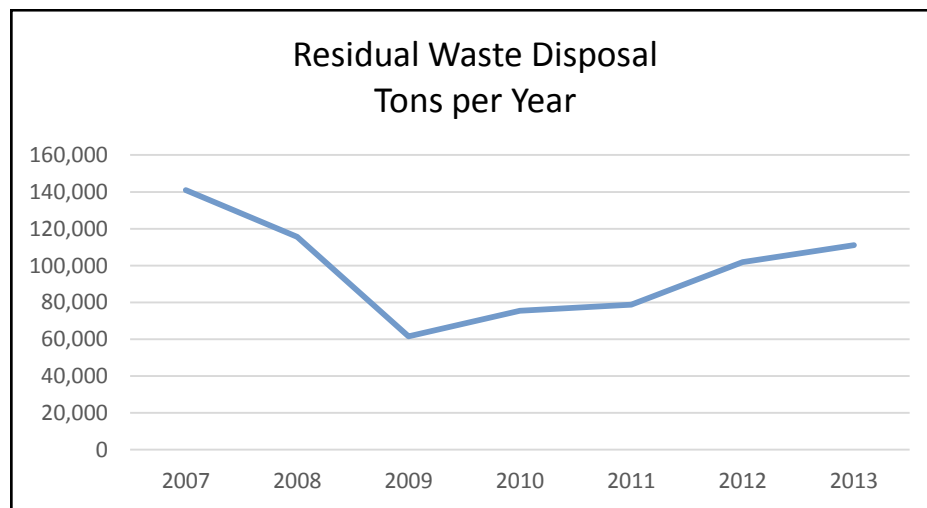
Although the amount of material processed at this facility has increased substantially, over this three year period, the percentages of each material has remained fairly consistent.

In addition to C & D waste Zwicky is also permitted to accept municipal waste. Some select types of municipal waste are accepted to be used as additives, to increase the BTU's for certain bio-mass-fuel customers. The Zwicky facility will continue working to increase the BTU value of their product, in an attempt to match coal, to be able to offer their product as a viable alternative. With this new plan for the future, the recycling of C & D waste could strengthen the world's energy production ensuring it for the future.

1.2.5 Residual Waste

Residual waste is defined in Pennsylvania as “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.” All counties in Pennsylvania have a residual waste component that must be dealt with and Berks County is no different with a variety of industries and a strong agricultural sector. In 2013, the amount of residual waste originating from Berks County and disposed of in Pennsylvania disposal facilities was 111,000 tons or 24% of the total County waste stream.

The largest generators of residual waste historically have been coal-fired electric utilities, paper mills, foundries, printing and ink operations, and the iron and steel industry. Table 1-2 shows disposal of residual wastes generated in Berks County over the past five and ten years. This table shows that the residual waste component represents 18% of the total solid wastes disposed of (averaged from 2009 – 2013). The prior five year period (averaged from 2004-2008) showed residual waste accounting for 23% of the total waste disposed of. This rate is for residual wastes disposed of at Pennsylvania facilities; it does not include residuals from Berks County that may have been shipped to out of state facilities.



1.3 Weight and Content of Wastes

This Plan Revision contains estimates of total solid waste generation, including sewage sludges resulting from water and wastewater treatment facilities, construction and demolition (C&D), infectious/chemotherapeutic (I/C), ash residue, and asbestos wastes. In addition, as per DEP guidelines, residual waste quantities projected for the planning period have been included in decisions presented in this document. While these wastes are not considered “municipal” solid waste, because they are generated by industries, they are considered herein for planning purposes because they are accepted as “municipal-like residual wastes” as determined by DEP and will occupy space in many of the same disposal facilities that accept municipal solid waste from the County.

Similarly, projections calculated for this Plan Revision take recycling into consideration, as required by DEP.

1.3.1 Disposal of Municipal Solid Waste

In Pennsylvania, the municipal waste stream includes the municipal, sewage sludge, construction, infectious, ash residue, and asbestos waste components as reported by DEP. These waste components originate primarily from the residential, commercial, and institutional sectors of the County, and are herein referred to as total municipal solid waste.

1.3.1.1 Berks County Data

To quantify the disposal of total municipal solid waste estimated were, based on the quantity of wastes originating in Berks County and disposed of at Pennsylvania disposal facilities and on population, housing and occupation data from Berks County, over the past ten years.

Actual waste disposal quantities from 2004 through 2013 were obtained from the DEP Waste Destination Reports. The data represent wastes originating from Berks County and disposed of in Pennsylvania municipal waste disposal facilities. With the exception of residual and some special handling wastes, the County’s waste is disposed of almost exclusively within the County or adjacent counties (discussed more in Chapter 3). Therefore, the DEP Waste Destination Reports are appropriate.

Population data was obtained from the U.S. Department of Commerce, Bureau of the Census, for years 2000 and 2010. Population estimates for other years were obtained from the Commonwealth of Pennsylvania Department of Environmental Protection Population Project Report.

Based on this data, the annual per capita municipal waste component generation rate was estimated. The average of the most recent five-year period (i.e., 2009 – 2013) is 1.05 tons per person per year (the equivalent of 5.77 pounds per person per day). This generation rate is for the municipal waste component only and does not include other portions of the municipal waste stream or residual wastes. (Refer to Table 3-2.)

As stated in Chapter 1, total waste generation estimates must take into consideration the volumes of all solid waste components that would likely be disposed of in facilities

utilized by the County. Therefore the quantity of the total municipal waste stream components, as well as the quantity of residual wastes, that will be required to be disposed of over the 10-year planning period was also estimated. (Refer to Table 3-6).

1.3.1.2 DEP Statewide Estimates

The calculation of the annual per capita municipal waste stream generation rate of 1.05 tons per person per year in Section 1.3.1.1, above, is slightly higher than the state-wide average of 0.8 tons per person per year (roughly 4.4 lbs./person/day), used by the DEP.

CHAPTER 2 – DESCRIPTION OF FACILITIES

This section provides a description of the facilities that received Berks County-generated waste over the past five years, 2009 - 2013, as reported on DEP Waste Destination forms. The volumes and percentages included in this text include the categories of total solid waste (i.e. all waste components) as well as municipal solid waste (i.e., municipal, sewage sludge, construction, ash residue and asbestos wastes components) as they appear on the Waste Destination forms. Table 2-1 presents a breakdown of the facilities that received County waste over the past five years. These facilities include landfills and resource recovery facilities. The majority of wastes originating from Berks County are disposed of in landfills.

According to waste disposal reports filed with the DEP from 2009 to 2013, eighteen landfills and six waste-to-energy (WTE) facilities received waste originating in Berks County (refer to Table 2-1). Eighty-three percent of the municipal waste from Berks County was disposed of at the following landfills: Delaware County Solid Waste Authority - Rolling Hills Landfill (formerly Colebrookdale); Conestoga Landfill; Western Berks Landfill and F.R. & S. Inc. - Pioneer Crossing Landfill. Based on the average over the past five years (2009 – 2013), these four facilities received 83% of both the municipal solid wastes and total solid wastes generated by the County and disposed of within Pennsylvania. Refer to Table 2-1 for a comparison of waste types received at these facilities.

TABLE 2-1
DISPOSAL FACILITIES RECEIVING WASTES ORIGINATING IN BERKS COUNTY
FIVE-YEAR AVERAGE OF TONS OF WASTE DISPOSED (2009- 2013)

<u>Disposal Facility</u>	<u>Municipal</u>	<u>Residual</u>	Sludge	Infectious	Construction	Ash	Asbestos	Total	% - all
New Morgan Landfill	85,546	17,335	503	16,717	798	12	203	121,114	25.77%
Delaware County SWA	67,044	13,592	210	0	547	31,022	56	112,472	23.93%
Pioneer Crossing Landfill	43,196	13,287	17,439	3,727	1,996	0	0	79,645	16.95%
Western Berks Comm. Landfill	47,981	24,526	132	0	2,244	0	78	74,960	15.95%
Chester County SWA	26,037	1,339	0	0	1,866	0	31	29,273	6.23%
Commonwealth Environmental System	14,281	1,496	162	0	630	0	1	16,570	3.53%
Cumberland County Landfill	5,425	4,705	368	0	261	0	13	10,772	2.29%
Modern Landfill	240	2,088	118	0	3,909	0	7	6,363	1.35%
Shade Twp. Waste Man.	0	5,953	0	0	0	0	5	5,959	1.27%
Advanced Disposal Services Green	3,973	3	0	0	29	0	0	4,005	0.85%
Grand Central Sanitary Landfill	2,537	33	15	4	440	0	0	3,029	0.64%
Pine Grove Landfill Inc.	2,116	153	0	0	506	0	0	2,775	0.59%
Covanta Plymouth Renewable Energy	816	29	0	0	0	0	0	845	0.18%
Lancaster County SWMA	0	812	0	0	0	0	0	812	0.17%
Harrisburg Materials Energy	433	0	0	0	0	0	0	433	0.09%
GROWS North	27	291	3	0	1	0	4	325	0.07%
York County Res. Recovery System	167	1	0	0	0	0	0	168	0.04%
Chrin Brothers San. Landfill	16	2	0	0	62	3	1	84	0.02%
Clinton County SWA	7	0	0	0	89	0	2	97	0.02%
IESI PA Bethlehem Landfill	95	0	0	0	15	0	0	110	0.02%
Lycoming County Resource Man	1	28	0	0	1	0	0	30	0.01%
Tullytown Resource Recovery	43	17	0	0	1	0	0	60	0.01%
Wheelabrator Falls Inc.	23	1	0	0	3	0	0	27	0.01%
LCSWMA Frey Farm Landfill	0	18	0	0	0	0	0	18	0.00%
Total - All Pa Facilities	300,005	85,708	18,949	20,448	13,398	31,037	402	469,946	100.00%
Total - Berks County Facilities	243,768	68,740	18,284	20,444	5,584	31,034	337	388,191	82.60%

Source: PA DEP Bureau of Land Recycling & Waste Mgt., Division of Reporting & Fee Collection, County Waste Destinations Report.

Fourteen other landfills and six WTE facilities within Pennsylvania provided disposal capacity for the remaining waste from Berks County, although the majority of these facilities provided disposal capacity for less than 1,000 tons per year of municipal wastes (i.e., excluding residual wastes) from Berks County. Only the landfills that disposed of more than 5,000 tons per year of Berks County municipal waste are described in Table 2-2 of this Plan Revision. The WTE facilities are discussed in Section 2.3.1. The DEP does not maintain records on volumes of materials delivered to out-of-state facilities.

TABLE 2-2
DISPOSAL FACILITIES MOST UTILIZED BY BERKS COUNTY
(2009 – 2013)

Disposal Facility	Municipal Solid Waste (a)		Total Solid Waste (b)	
	tons	%	Tons	%
New Morgan Landfill Co. (Conestoga)	103,779	26%	121,114	26%
DCSWA – Rolling Hills Landfill	98,880	24%	112,472	24%
F.R.& S. Inc. (Pioneer Crossing)	66,358	17%	79,645	17%
Western Berks Landfill	50,435	16%	74,960	16%
Chester County SWA	27,935	6%	29,273	6%
CES Landfill	15,074	4%	16,570	4%
Cumberland County Landfill	6,068	2%	10,772	2%
Subtotal	95%		95%	
Other Facilities	5%		5%	
Total	100%		100%	

Source: DEP Waste Destination Reports, average 2009 – 2013.

^a Municipal Solid Waste includes the municipal, sewage sludge, construction, ash residue and asbestos waste components; excludes residual wastes.

^b Total Solid Waste includes all waste components (i.e., includes all municipal waste types plus residual wastes).

2.1 Landfills

The 1990 Municipal Waste Management Plan and the 2005 Municipal Waste Management Plan Revision stated that Berks County executed agreements with Browning Ferris, Inc. (i.e., Conestoga Landfill) and the Delaware County Solid Waste Authority to provide short-term and long-term landfill capacity. The 2007 Plan Revision stated that Berks County had executed a Disposal Capacity Agreement with Western Berks Landfill LLC to provide ten years of disposal capacity to Berks County. All three of these Disposal Capacity Agreements were extended in December of 2013 for a period expiring after, 2025 or 10 years from the date of approval of this Solid Waste Management Plan Revision by PADEP. The execution of these agreements was to provide landfill capacity for municipal waste, for this planning period.

The following landfill descriptions include references to the maximum daily volume (MDV), which is the maximum amount the facility is permitted to receive on a given day and the average daily volume (ADV), which is the daily tonnage a facility can receive averaged over the quarter.

Specific permit limits are provided for information purposes and is not intended to limit the facility from applying for and receiving permit modifications that will change the volume of waste the facility receives. Based on this and other information available for the landfills, the status of disposal facilities providing capacity assurance to Berks County is presented in Table 2-3.

TABLE 2-3

	Estimated Remaining Landfill Capacity (as of Dec. 2013)	Estimated Remaining Landfill Life (until date)	Permit Expiration Date
DCSWA - Rolling Hills Landfill	7.6 mil cy	>10 Years	Renewal application under review by DEP.
New Morgan Landfill Co. - Conestoga Landfill	27.9 mil cy	2048	Sept. 1, 2017
Western Berks Landfill	3.2 mil cy	2024	August 2016

2.1.1 Delaware County Solid Waste Authority – Rolling Hills Landfill

The Delaware County Solid Waste Authority Landfill operates under DEP Solid Waste Permit No. 100345. It is also known as the Rolling Hills Landfill and formerly known as the Colebrookdale Landfill. This facility was described in the original 1990 Plan and 2005 Plan Revision and is still used to provide capacity for the County's municipal waste. As mentioned above, the 1990 plan and 2005 plan revision stated that Berks County executed agreements with Delaware County Solid Waste Authority on October 12, 1989 and extended the Agreement on January 22, 2004, July 25, 2013 and again on December 9, 2013, to ensure capacity for this Plan Revision. The December 9, 2013 extension, extended the Agreement through December 31, 2025, or ten (10) years from the date of adoption of the new revision to the Plan and final approval and acceptance thereof by Pennsylvania Department of Environmental Protection, whichever is later. The execution of the agreement was to provide landfill capacity for municipal waste.

In 2013, the DEP Waste Destination reports indicate that this facility received 133,407 tons, or nearly 29%, of the total solid waste generated by the County. In the past five years, this facility received an average of 112,472 tons, or 24%, of total solid waste generated by the County.

The Rolling Hills Landfill has a permitted area of 213.8 acres with a disposal area of 156.7 acres. The facility operates under a permitted MDV of 3,840 tons and an ADV of 3,200 tons. The facility reports that the ADV in 2013 was approximately 1,641 tons, thus the facility accepts waste at a rate substantially lower than its permitted ADV. According to the facility's 2013 Annual Report, the remaining landfill capacity is approximately 7.6 million cubic yards (cy). The remaining landfill life at the ADV of 3,200 TPD is less than 10 years. Their permit renewal is currently under review by DEP.

2.1.2 Conestoga Landfill

This facility, described in the original 1990 Plan and 2005 Revision, operates under DEP Solid Waste Permit No. 101509, and is still used to provide capacity for the County's municipal waste. As mentioned above, the 1990 Plan and 2005 Revision state that Berks County executed an agreement with Browning Ferris, Inc. (i.e., Conestoga Landfill) on October 12, 1989. On December 9, 2013 that Agreement was extended through the remaining term of the pending revision of the Plan. The execution of the agreement was to provide landfill capacity for municipal waste for the County.

In 2013, DEP Waste Destination reports indicate that this facility received 109,528 tons, or 24%, of total solid waste generated by the County. In the past five years, this facility received an average of 121,114 tons, or nearly 26%, of total solid waste generated by the County.

The Conestoga Landfill has a permitted area of 423 acres with a disposal area of 294 acres. The facility operates under a permitted MDV of 10,000 tons, and an ADV of 7,210 tons. However the facility reports it currently accepts waste at a rate substantially lower than its permitted ADV. In 2013, the facility reported the remaining landfill capacity was approximately 27.9 million cubic yards (cy) and the estimated remaining landfill life was 34 years (i.e., until 2048). The existing permit is set to expire in September 2017.

2.1.3 Western Berks Landfill

This facility, described in the original 1990 Plan and 2007 Revision operates under DEP Solid Waste Permit No. 100739, and is still used to provide capacity for the County's municipal waste. As mentioned above, the 2007 Plan revision states that Berks County executed an agreement with Western Berks Refuse Authority on April 3, 2007 to provide disposal capacity assurance for Berks County municipal waste. The execution of this agreements was to provide landfill capacity for municipal waste for the County over 10-Years (2007 – 2017). On December 9, 2013 this Agreement was extended through December 31, 2025, or ten (10) years from the date of adoption of the new revision to the Plan and final approval and acceptance thereof by Pennsylvania Department of Environmental Protection, whichever is later.

In 2013, DEP Waste Destination reports indicate that this facility received 82,064 tons, or nearly 15%, of total solid waste generated by the County. In the past five years, this facility received an average of 74,960 tons, or nearly 16%, of total solid waste generated by the County.

The Western Berks Landfill has a permitted area of 110 acres with a disposal MSW footprint of 65 acres and an active disposal area of 12 acres. The facility operates under a permitted ADV of 1,000 tons and a MDV of 1,250 tons. In 2013, the facility reported the remaining landfill capacity was approximately 3.2 million cubic yards (cy) and the estimated remaining landfill life is approximately 10 years (i.e., until 2024). The existing permit is set to expire on August 23, 2016.

2.1.4 Other Landfills

The other twenty disposal facilities that have received minor amounts of Berks County municipal waste in the past five years are included in Table 2-1. Descriptions of these facilities and evaluations of existing and future capacity have not been provided, because the Agreements currently in place with Conestoga Landfill, Delaware County Solid Waste Authority and Western Berks Landfill meet our Disposal Capacity needs for this planning period.

2.2 Previous Landfill Disposal Facilities

The 1990 Plan and 2005 and 2007 Plan Revisions included several other landfill disposal facilities previously utilized by the County. These facilities are no longer in operation and are therefore not included in this Plan Revision.

2.3 Other Facilities

Other facilities that are utilized to dispose of wastes generated in the County include waste-to energy (WTE) facilities and transfer stations. These are discussed in the following sections.

2.3.1 Waste-To-Energy Facilities

The York County Resource Recovery Facility was added to the Berks County Plan as part of our 2013 Plan revision. The Covanta Plymouth Renewable Energy, Lycoming County Resource, Tullytown Resource Recovery, and Wheelabrator Falls Inc., have received minor amounts of Berks County-generated waste since the approval of the 2005 Plan. The York County Resource Recovery Center received 839 tons of Berks County waste in 2013. The Harrisburg Refuse Incinerator received 2,165 tons of Municipal Waste from Berks County in 2013. The Lancaster Resource Recovery Facility also received Berks County waste in the past five years (ranging from 716 to 873 tons per year), although this was of the residual type. Historically, very little of Berks County's generated municipal waste is managed at WTE facilities.

2.3.2 Transfer Stations

Because of the presence of multiple landfill facilities in and around Berks County, transfer stations are not used often to transfer municipal waste. Nothing in this Plan or this Plan Revision prohibits the transfer of municipal waste at a transfer station permitted by DEP.

Each and every application for a solid waste transfer facility proposed to be located in Berks County shall be copied and reviewed by the Berks County Planning Commission.

CHAPTER 3 - ESTIMATED FUTURE CAPACITY

3.1 Estimated Future Capacity at Facilities

As indicated in Chapter 2, Table 2-2, there are seven disposal facilities that accept the majority of Berks County waste for disposal. Three of the disposal facilities among the most utilized by Berks County (e.g., DCSWA Rolling Hills Landfill, the Connestoga Landfill and the Western Berks Comm. Landfill), have executed ten year Disposal Capacity Agreements with Berks County and together have future capacity of over 38.7 million cubic yards (cy), as well as adequate permitted life to serve the needs of Berks County for the duration of this planning period.

The need for capacity assurance was recognized by the County, and in December of 2013, the Authority and the County extended our existing Disposal Capacity Agreements through 2025 or 10 years from the date of adoption or approval of this Plan revision.

3.2 Estimated Future Waste Generation

Solid waste disposal reports and population figures from the past five and ten years were used to determine the trend in per capita waste generation rates. Table 3-1 shows the generation rates that were calculated for the County for the municipal waste component, that is, wastes generated by residential households, and commercial and institutional establishments; this component excludes all other components of the waste stream (i.e., C&D, sewage sludge, etc.), but does include recovered recyclables. Estimated waste generation rates for these other components of the municipal waste stream are included in Table 3-2.

In 2005, the municipal waste component generation rate was approximately 6 pounds per person per day (see Table 3-1). In 2006, this number increased to 8 pounds per person per day and remained stable around 8 pounds through 2009. By 2010 this number had decreased to 5.4 pounds per day per person, and remains stable between 5.4 and 5.2 through 2013. Based on this data, this Plan Revision will assume a municipal waste component generation rate of 5.77 pounds per person per day (i.e., most recent five-year average, 2009-2013) over the planning period.

Table 3-3 shows the estimated generation and disposal quantities over the planning period for both the municipal waste component and for the total municipal solid wastes. The total municipal solid wastes include all municipal waste stream components (i.e., excludes residual wastes; includes municipal, sewage sludge, construction, infectious, ash and asbestos wastes).

TABLE 3-1**HISTORICAL AND CURRENT WASTE GENERATION RATES**

YEAR	MUNICIPAL WASTE COMPONENT DISPOSAL	RECYCLING	MUNICIPAL WASTE COMPONENT GENERATION	POPULATION	GENERATION #PERSON/DAY
2005	318,705	82,756	401,461	363,452	6.05
2006	318,578	215,401	533,979	363,452	8.05
2007	338,486	186,313	524,799	363,452	7.91
2008	348,301	143,229	491,530	363,452	7.41
2009	323,636	163,319	486,955	363,452	7.34
2010	307,564	97,695	405,259	411,442	5.40
2011	310,430	113,280	423,710	411,812	5.64
2012	291,168	117,180	408,348	412,183	5.43
2013	267,248	128,277	395,525	412,554	5.25

TABLE 3-2**ESTIMATED WASTE GENERATION RATES**

Year	Population	Municipal	Sewage Sludge	I/C	C&D	Ash	Asbestos	Total
2009	363,452	486,955	21,851	23,153	14,002	3,721	401	550,083
2010	411,442	405,259	20,522	21,321	14,009	40,950	250	502,311
2011	411,812	423,710	17,101	20,587	14,882	41,137	702	518,119
2012	412,183	408,348	15,645	18,757	11,142	35,103	229	489,224
2013	412,554	395,525	19,627	18,421	12,998	34,259	437	481,267
5-Yr. Ave.	402,289	423,959	18,949	20,448	13,407	31,034	404	508,201
Estimated Per capita Generation (#/person/day)								
		5.77	0.26	0.28	0.18	0.42	0.01	6.92

TABLE 3-3
ESTIMATED MUNICIPAL WASTE STREAM GENERATION AND DISPOSAL
QUANTITIES OVER 10-YEAR PLANNING PERIOD (2015 - 2024)
Berks County, PA

Year	Population (b)	Municipal Waste Stream ^a				
		Generation		Recycled		Disposed
		Total Municipal Solid Wastes (tons) (a)	Municipal Component (tons) (c)	Recycled Materials (tons) (d)	Projected County Recycling Rate	Total Municipal Solid Wastes (tons) (e) (f)
2010	411,442	502,310	405,259	97,695	24%	404,615
2011	411,812	518,120	423,710	113,280	27%	404,840
2012	412,183	489,226	408,348	117,180	29%	372,046
2013	412,554	481,267	395,525	128,277	32%	352,990
2014	412,925	521,483	434,821	147,839	34%	373,644
2015	413,297	521,953	435,212	152,324	35%	369,628
2016	413,669	522,422	435,604	152,461	35%	369,961
2017	414,041	522,892	435,996	156,958	36%	365,934
2018	414,414	523,363	436,388	157,100	36%	366,263
2019	414,787	523,834	436,781	161,609	37%	362,225
2020	415,160	524,306	437,174	161,754	37%	362,551
2021	415,534	524,777	437,567	166,276	38%	358,502
2022	415,908	525,250	437,961	166,425	38%	358,825
2023	416,282	525,722	438,355	170,959	39%	354,764
2024	416,657	526,196	438,750	175,500	40%	350,696
TOTALS	(2015-2024)	5,240,715	4,369,787	1,621,366		3,619,349

Notes:

- a- Includes municipal waste stream components: municipal, C&D, I/C, sewage sludge, ash and asbestos wastes. Excludes residual wastes.
- b- Based on Year 2010 US Census Bureau population estimates and population growth rate of 0.9% per year.
- c- Calculated using a generation rate of approximately 5.77 pounds of waste / person / day throughout the planning period. Years 2015-2024 based on reported data. (Including materials collected for recycling)
- d- The recycling rate accounts for Act 101 recyclables from residential, commercial and institutional sources.
- e- Difference of Total Solid Waste Generation and Recycled Materials.
- f - Values in 2010, 2011, 2012 and 2013 are actual data from DEP Waste Destination Reports (posted as of February 2014) for Berks County.

Total waste generation is required by Act 101 to include all municipal waste components, but is also required to take into consideration the volumes of residual waste that would likely be disposed in facilities utilized by the County. Therefore, the projected quantity of residual waste generation over the planning period is also included in this Plan Revision.

It should be noted that, in 2010 and 2011 the municipal waste stream (i.e., municipal, sewage sludge, construction, ash residue, and asbestos wastes, per DEP reporting), made up approximately 84% of the total solid waste disposed of. During 2012 and 2013, however, the municipal waste stream made up approximately 77% of the total solid waste disposed (refer to Table 1-2).

Using population data and the per capita waste generation rate estimates described previously, total municipal solid waste generation projections for the County over the 10-year planning period have been estimated. In addition, the quantities of the recyclable portion of the municipal waste stream have been estimated based on historic recycling rates in the County and the DEP goal of 35% recycling. These projections are shown in Table 3-3. (Refer to Table 3-6 for a further breakdown of the generation projections into individual components of the municipal waste stream.)

The total municipal solid waste to be disposed of over the 10-year planning period is approximately 3.6 million tons. This includes the municipal waste stream (i.e., wastes originating from residential, commercial and institutional establishments), which includes the following waste components: municipal, C&D, I/C, sewage sludge and septage, ash residue and asbestos wastes; this does not include residual wastes or recyclables.

3.2.1 Residential Waste Projections

Based on the evaluation of current data, including 2010 census data for demographic, economic, housing and social characteristics, the current proportion of residential-generated waste in the municipal waste stream is estimated to be 54% (refer to Table 3-4). A breakdown of the municipal waste stream into fractions from residential sources, and projected disposal quantities is provided in Table 3-6.

3.2.2 Commercial/Industrial Waste Projections

Based on the evaluation of current data, including 2010 census data for demographic, economic, housing and social characteristics, the current proportion of commercial/industrial generated waste in the municipal waste stream is estimated to be 34% (Table 3-4). A breakdown of the municipal waste stream into fractions from commercial/industrial sources, and projected disposal quantities provided in Table 3-6.

3.2.3 Institutional Waste Projections

Based on the evaluation of current data, including 2010 census data for demographic, economic, housing and social characteristics, the current proportion of institutional-generated waste in the municipal waste stream is estimated to be 12% (refer to Table 3-4). A breakdown of the municipal waste stream into fractions from institutional sources, and projected disposal quantities is provided in Table 3-6.

3.2.4 Other Waste Types

The DEP requires Counties to project the volumes of special handling wastes for the planning period. These waste types include infectious/chemotherapeutic waste, residual waste, construction and demolition waste, and sewage sludge and septage, and are also generated by residential, commercial, industrial, and institutional sources. They are discussed individually here to give a sense of the individual portions generated.

3.2.4.1 Infectious/Chemotherapeutic Waste Projections

The wastes included in the medical sector are managed separately from typical municipal solid wastes. These wastes, often called infectious and chemotherapeutic (I/C) wastes in Pennsylvania, are separately quantified. The DEP waste receipts show that infectious and chemotherapeutic wastes currently make up approximately 4.4% of the Berks County waste stream disposed of in PA landfills (2009-2013 waste receipts). This represents a slight increase over the prior five-year average (2004 – 2008) of 4.3% (refer to Table 1-2).

3.2.4.2 Residual Waste Projections

The DEP waste receipts show that residual wastes make up approximately 18% of the waste stream disposed of in PA landfills (2009-2013 waste receipts). This represents a slight decrease over the prior five-year average (2004 – 2008) of 20%, (refer to Table 1-2). It is therefore estimated that, over the ten-year planning period, residual wastes to be disposed of will total 1.5 million tons. This value, added to the 3.62 million tons of municipal solid waste, (5.24 million tons of municipal minus 1.62 million tons of recyclables) results in a disposal capacity requirement of approximately 5.12 million tons over the ten-year planning period.

3.2.4.3 *Construction and Demolition Waste Projections*

The DEP Waste Destination Report show that construction and demolition wastes generated in Berks County, being disposed of at Pennsylvania disposal facilities, make up approximately 2.9% of our waste stream (2009-2013 waste reports). Which remained equivalent to the prior five year period (2004 – 2008), (refer to Table 1-2). However, this does not include the C & D waste that is processed at the Zwicky, Evergreen Power Plant and numerous transfer stations, which certainly has a huge diversion from area landfills and skews this number greatly.

3.2.4.4 *Sludge Generation Projections*

The DEP waste receipts show that sludge and septage wastes make up approximately 4% of the waste stream disposed of in PA landfills (2009-2013 landfill waste receipts). This represents a slight decrease in the prior five-year average of 4.5%, (refer to Table 1-2)

3.2.4.5 *Asbestos*

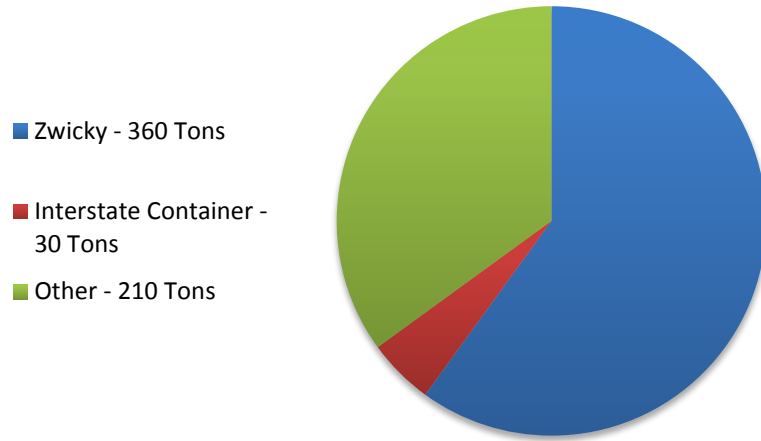
The DEP waste receipts show that asbestos make up approximately .1% of the waste stream disposed of in PA landfills (2009-2013 landfill waste receipts) which is the same as the prior five-year average. (refer to Table 1-2)

3.2.4.6 *Ash*

The DEP waste receipts show that ash make up approximately 6.6% of the waste stream disposed of in PA landfills (2009-2013 landfill waste receipts). This represents a huge increase in the prior five-year average of 3.2%, and a 100% increase from our 2005 Plan Revision (refer to Table 1-2)

This increase is due to the opening of the Evergreen Power Plant in 2008. They burn bio mass fuel mostly (60%) provided by Zwicky's C & D waste processing facility, with 10% coming from United Corrstack, their onsite paper mill and the remaining 35% coming from other outside sources. When they opened the facility the ash generated in Berks County increased exponentially, as shown in the graphic below. However, the percentage of ash is extremely low, approximately 16% in comparison to how much waste they are using for power generation.

Evergreen Fuel Suppliers (600 Tons per Day)



Percent of Ash to Landfill from Evergreen

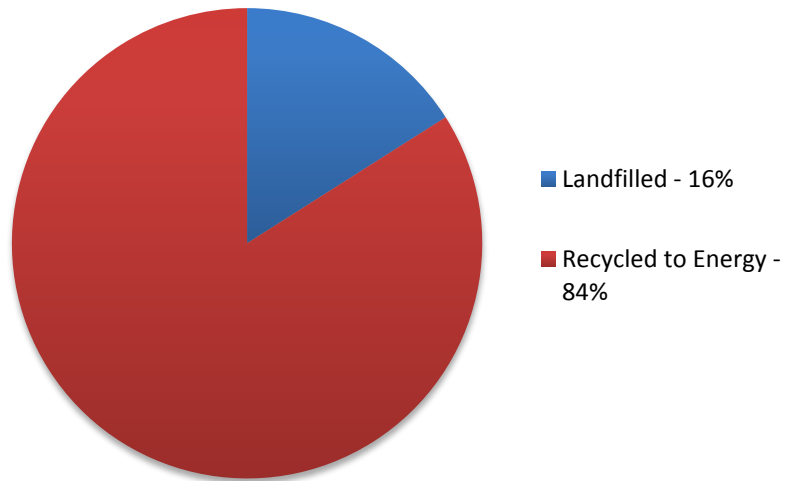


TABLE 3-4
MUNICIPAL WASTE STREAM ORIGIN AND PROJECTED DISPOSAL QUANTITIES
OVER 10-YEAR PLANNING PERIOD (2015 - 2024)
Berks County, PA

Year	Municipal Waste Stream Tons Disposed per Year			
	Total Municipal Solid Wastes (a) (b)	Residential Fraction (c)	Commercial Fraction (d)	Institutional Fraction (e)
2010	404,615	218,492	137,569	48,554
2011	404,840	218,614	137,646	48,581
2012	372,046	200,905	126,496	44,646
2013	352,990	190,615	120,017	42,359
2014	373,644	201,768	127,039	44,837
2015	369,628	199,599	125,674	44,355
2016	369,961	199,779	125,787	44,395
2017	365,934	197,604	124,418	43,912
2018	366,263	197,782	124,530	43,952
2019	362,225	195,602	123,157	43,467
2020	362,551	195,778	123,267	43,506
2021	358,502	193,591	121,891	43,020
2022	358,825	193,765	122,000	43,059
2023	354,764	191,573	120,620	42,572
2024	350,696	189,376	119,237	42,083
Total (2015-2024)	3,619,349	1,954,449	1,230,579	434,322

Notes:

- a- Includes municipal, C&D, I/C, sewage sludge, ash residue and asbestos wastes. Excludes recycled materials and residual wastes.
- b- Based on data presented in Table 3-6, Estimated Solid Waste Generation and Disposal Quantities.
- c- Residential Sector = 54% of municipal waste types. Waste Characteristics by Generation Source.
- d- Commercial = 34% of municipal waste types.
- e- Institutional - 12% of municipal waste types

3.3 Estimated Total Capacity Required

As shown in Table 3-3, the projected total capacity required for this planning period is approximately 3.6 million tons. This figure includes municipal, C&D, sewage sludge, I/C, ash residue and asbestos waste types but does not include materials that have been removed from the waste stream as a result of recycling and waste reduction or residual waste. As indicated in Section 3.2.4.2, it is estimated that residual wastes to be disposed of over the ten-year planning period will total 1.5 million tons. This value, added to the 3.6 million tons of municipal solid waste, results in a disposal capacity requirement of nearly 5.1 million tons over the ten-year planning period. In order for the disposal capacity required by the County to demonstrate a “worst case” scenario, the 5.1 million tons will be used for planning purposes.

3.3.1 Variables Affecting Total Capacity Requirements

The variables that affect the capacity required by the County for waste generated by its residents and businesses have been factored into the calculations and projections contained in this report. These variables include the rate of population growth, the rate of expanded development in the County, and the success of the County’s recycling and waste reduction programs. Population projections used in this Plan Revision are based on the most accurate and recent available data.

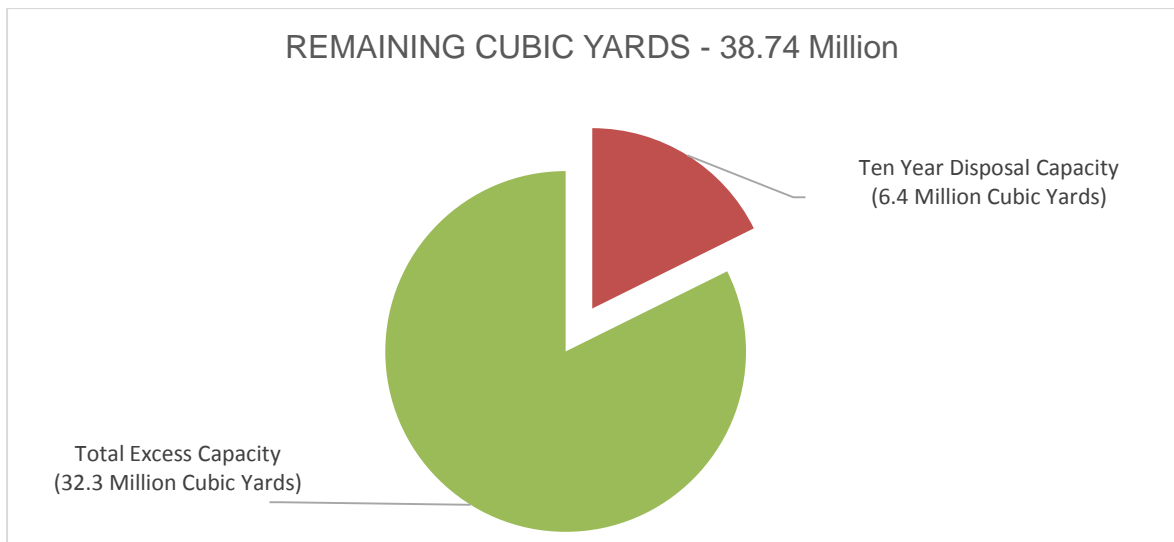
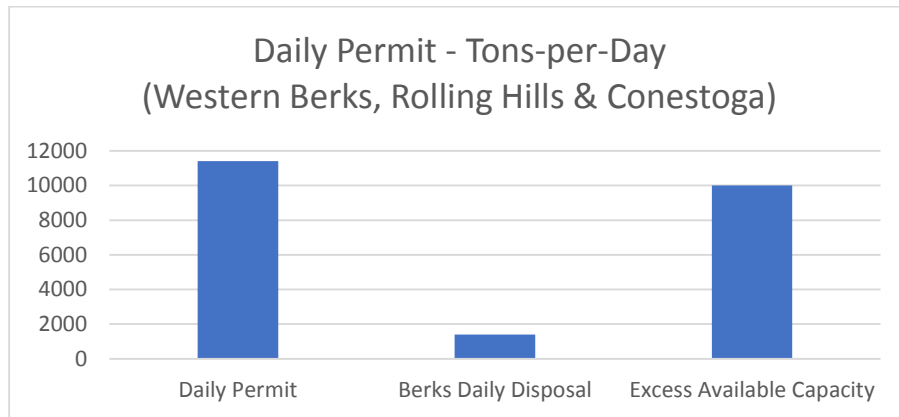
Real and probable data has been utilized to represent the volume of recyclable materials that the County will recover during the planning period. The County has established recycling programs and will continue to assist municipalities in improving these programs. As of the date of this submission, the County has not met the State 35% recycling goal for Act 101 materials, but the County is committed to work to continue increasing our recycling rate to achieve that goal by 2015 or earlier. Continued improvement in recycling and waste reduction efforts will decrease the volume of waste that requires disposal.

3.4 Need for Capacity Assurance

In December of 2013 the County and the Authority extended Capacity Agreements with three Berks County Landfills through 2025 or 10 years from the date of approval of this Plan revision. Copies of the executed disposal capacity agreements are included in Appendix A. An evaluation of the capacity offered by these facilities, based on the remaining life of the facility and the County’s annual waste disposal projections, was conducted. Based on this evaluation, the County has sufficient capacity available for the ten-year planning period.

**TABLE 3-5
FACILITIES PROVIDING CAPACITY ASSURANCE
Berks County, PA**

Owner	Facility Name (Location)	Type of Facility
Delaware County Solid Waste Authority	Rolling Hills Landfill (Berks County)	MSW landfill
New Morgan Landfill Company, Inc.	Conestoga Landfill (Berks County)	MSW landfill
WBLF Acquisition Co. LLC	Western Berks Community Landfill and Recycling Center LLC (Berks County)	MSW landfill



**TABLE 3-6
Breakdown of Estimated Municipal Waste Stream Generation and Disposal Quantities Over 10-year Planning Period (2015 - 2024)
Berks County, PA**

Year	Population	Recycling Tons	Recycling %	Generation (tons) b									
				Municipal Waste	C & D	Infectious	Sewage	Ash	Asbestos	Total MSW Generation	Total MSW without Recyclables	Residual Waste	
2007	399,600	186,313	36%	524,800	20,048	22,270	22,923	58	377	590,474	404,161	141,032	
2008	403,200	143,229	29%	491,530	24,598	22,972	21,258	213	103	560,675	417,446	115,664	
2009	406,800	163,319	34%	486,955	14,002	23,153	21,851	3,721	401	550,084	386,765	61,616	
2010	411,442	97,695	24%	405,259	14,009	21,321	20,522	40,950	250	502,310	404,615	75,439	
2011	411,812	113,280	27%	423,710	14,882	20,587	17,102	41,137	702	518,120	404,840	78,710	
2012	412,183	117,180	29%	408,348	11,142	18,757	15,645	35,103	229	489,226	372,046	101,892	
2013	412,554	128,277	32%	395,525	12,998	18,421	19,627	34,259	437	481,267	352,990	110,996	
Planning Period	2014	412,925	147,839	34%	434,821	13,565	21,100	19,593	31,651	754	521,483	373,644	151,230
	2015	413,297	152,324	35%	435,212	13,577	21,119	19,611	31,679	754	521,953	369,628	151,366
	2016	413,669	152,461	35%	435,604	13,589	21,138	19,629	31,708	755	522,422	369,961	151,502
	2017	414,041	156,958	36%	435,996	13,601	21,157	19,646	31,736	756	522,892	365,934	151,639
	2018	414,414	157,100	36%	436,388	13,613	21,177	19,664	31,765	756	523,363	366,263	151,775
	2019	414,787	161,609	37%	436,781	13,626	21,196	19,682	31,793	757	523,834	362,225	151,912
	2020	415,160	161,754	37%	437,174	13,638	21,215	19,699	31,822	758	524,306	362,551	152,049
	2021	415,534	166,276	38%	437,567	13,650	21,234	19,717	31,851	758	524,777	358,502	152,185
	2022	415,908	166,425	38%	437,961	13,663	21,253	19,735	31,879	759	525,250	358,825	152,322
	2023	416,282	170,959	39%	438,355	13,675	21,272	19,753	31,908	760	525,722	354,764	152,460
2024	416,657	175,500	40%	438,750	13,687	21,291	19,770	31,937	760	526,196	350,696	152,597	
10 Year Planning Period		1,621,366		4,369,787	136,319	212,052	196,905	318,078	7,573	5,240,715	3,619,349	1,519,807	

- a- Actual Census data for years 2000 thru 2010; others based on Year 2013 population estimates from U.S. Department of the Census, increasing at a rate of 0.9% per year.
- b- Years 2007 through 2013 values are from PADEP Waste Destination Forms for Berks County.
- c- Municipal Waste Generation includes recycling; values after 2013 are calculated using a generation rate of 5.77 pounds per person per day (based on Table 3-2).
- d- C&D Waste Generation after 2013 is calculated using a generation rate of approximately 0.18 pounds/person/day (based on Table 3-2).
- e- I/C Waste Generation after 2013 is calculated using a generation rate of approximately 0.28 pounds/person/day (based on Table 3-2).
- f- Sewage Sludge Generation after 2013 is calculated using a generation rate of approximately 0.26 pounds/person/day (based on Table 3-2).
- g- Ash Waste Generation after 2013 is calculated using a generation rate of approximately 0.42 pounds/person/day (based on Table 3-2).
- h- Asbestos Waste Generation after 2013 is calculated using a generation rate of approximately 0.01 pounds/person/day (based on Table 3-2).
- i- Total MSW includes municipal, C&D, I/C, sewage sludge, ash and asbestos waste components. Total MSW excludes the residual waste component.
- j- The recycling rate accounts for the municipal waste component recyclables (i.e., paper, plastic, glass, etc.) from residential, commercial and institutional sources.
- k- Total MSW Disposed is sum of municipal + C&D + I/C + sewage sludge + ash + asbestos - recycling. Total MSW excludes residual wastes.

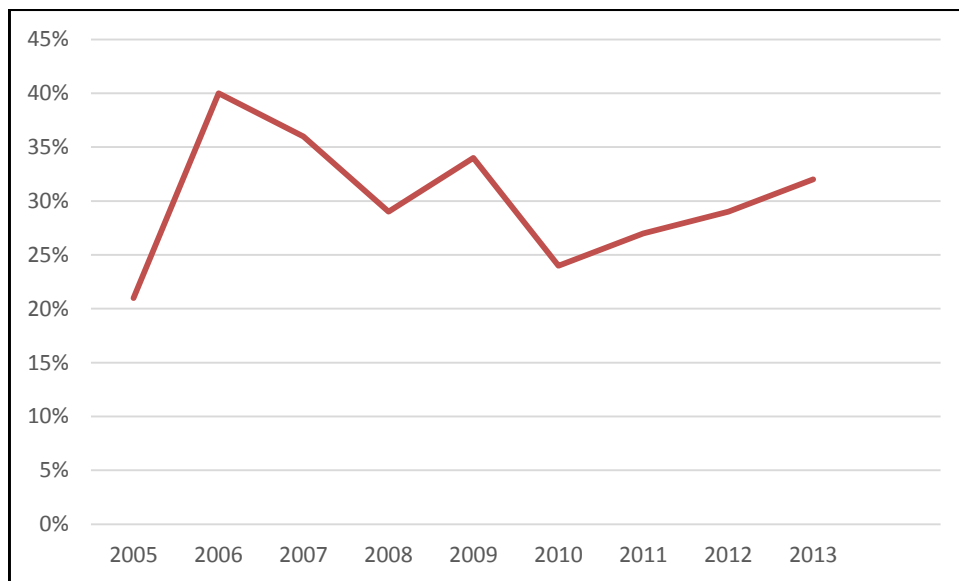
CHAPTER 4- DESCRIPTION OF RECYCLABLE MATERIALS

4.1 INTRODUCTION

In the past decade, recycling in Berks County has been expanded and reporting procedures and communication has greatly improved in order to increase our recycling rate with the goal of meeting and exceeding the DEP's recycling goal of 35%, by the end of this planning period.

The recycling rates in Berks County have increased and decreased from year to year since 2005, as seen in Figure 4-1.

FIGURE 4-1
Berks County Recycling Rates, 2005 through 2013
Percentage of Waste Stream each year



Since the 2005 Plan Revision, the County improved reporting channels for recycling data collection, thereby improving the accuracy of the County's overall reported recycling rate and improved the accuracy of the recycling reports.

4.2 Recyclables for Possible Consideration

4.2.1 Standard Materials

The 1990 Plan and 2005 Plan revision focused on basic material types for recycling programs, including:

- Paper (newspaper, corrugated cardboard, mixed paper, and high-quality office paper)
- Metal (aluminum cans, bi-metal cans, steel cans, scrap metals, and appliances)
- Glass (clear, amber, green, mixed colors)
- Others (food wastes, leaf and yard wastes, HDPE plastics, PET bottles, used motor oil, and household goods)

Due to the efforts put forth by the municipalities within the County, recycling in Berks County has moved beyond the traditional Act 101 materials and now includes such items as tires, textiles, consumer electronics, mixed plastic, magazines, auto parts, lead-acid batteries, and fluorescent tubes. The Authority has also conducted collection programs for the following types of materials: hazardous waste, electronic, pharmaceutical, tire recycling and paper shredding. These collections have been extremely successful in removing hazardous and toxic wastes from the waste stream, while greatly improving our recycling programs.

This section will briefly describe the materials that are most commonly targeted in municipal recycling programs.

4.2.2 Yard Waste

Another major change in municipal recycling programs is in the recovery of yard waste. Each year, Pennsylvania generates more than two million tons of yard waste, which accounts for approximately 20% of the municipal waste stream. This fraction increases significantly in autumn due to the seasonal collection of leaves from municipalities that do not have collection programs throughout the year. The definition of the materials that are the subject of this focus includes leaves, garden residues, tree trimmings, brush, and grass clippings.

Recovery of this organic portion of the waste stream, as an alternative to landfilling or burning, has been the focus of a number of recent DEP programs. In fact, Act 101 prohibits landfills from accepting truckloads of leaf waste for disposal and also mandates that larger municipalities collect this waste for composting. Grant applications under Act 101, Section 902 have historically been a popular way for municipalities to request monies to assist in the development of recycling and composting programs.

The Authority assisted Hopewell Nursery in Amity Township in obtaining their yard waste permit to accept Colebrookdale Township yard waste. Lower Heidelberg entered into an Inter-Municipal Agreement with South Heidelberg Township to use their yard waste site and received grant money to make necessary improvements. Maxatawny Township developed a new yard waste drop-off site for their residents to use. The Authority has assisted with the development of seven (7) yard waste sites since 2008.

4.2.3 Food Waste Composting

The Authority worked closely with PADEP and the Conrad Weiser School District in the development of a post-consumer food waste composting project, which was implemented throughout the School District in 2009. In 2010, PADEP awarded \$ 74,000 towards the development of a food waste collection program, EPA awarded a total of \$11,000 towards the 2011 and 2012 collection costs and the Authority dedicated \$10,000 towards the success of this program in both 2011 and 2012. The Authority awarded the collection contract to Cogle's Recycling in November of 2010 and moved forward with the purchase of our collection equipment, with the program kicking off in April of 2011.

In November of 2012, at the Authority's request, Gannet Fleming performed a Technical review of our program, on behalf of PADEP. The recommendation of that review was for the Authority to terminate our involvement in the food waste program, as originally designed and to have the program operated directly by the private sector, if there is adequate interest. A copy of the technical review can be found on the Authority website at:

<http://www.co.berks.pa.us/Dept/SWA/Documents/Special%20Wastes/Berks%20Co%20%20RTA%20527%20-%20Draft%20Rpt%2011-7-2012rev1.pdf>

Food waste composting is still being offered in Berks County to a number of businesses and institutions by Cogle's Recycling, without the Authority's involvement.

4.3 Potential Benefits of Recycling

The 1990 Plan and 2005 Plan revision discussed three main benefits of recycling. These benefits still exist in the County. The first and most direct potential benefit of recycling programs is economic. The economic benefits come both from the potential revenues from sale of materials and the avoided collection and disposal costs. In many municipal programs, it has been, and will continue to be, cheaper to collect and recycle materials for which markets can be found than to dispose of them in a landfill or resource recovery plant. The County as a whole also realizes some income from the sale of these materials. At a 35 percent recycling rate, the DEP recycling goal, 152,000 tons of recyclable materials would be diverted this year (2014) from disposal. However, currently and based on recycling data, Berks County is reporting recovery of recyclables on the order of approximately 128,000 tons (approximately 32% recycling rate). With the creation of new recycling programs, considering available markets, and the expansion of existing programs and increased/better reporting requirements, Berks County will exceed the DEP goal of 35 percent recycling, during this planning period.

The decrease in the tonnage of municipal waste requiring disposal in 2013 as a result of diversion for recycling (at the 32% recycling rate) would result in an estimated savings of \$7.7 - \$8.3 Million dollars in disposal fees (tipping fees only) (assuming a gate rate of \$60 – 65 /ton). By the end of the planning period (2024), as many as 1.62 million tons of recyclables can be expected to be diverted from the County's waste stream, with an estimated savings of \$97 - \$105 million dollars.

The second economic benefit of recycling is saving resources. This item applies primarily to materials that have commercial value, such as aluminum. However, items such as paper and glass that have relatively weaker markets are not as valuable when recycled. Paper is made from a renewable resource, and glass is inexpensive and easy to produce due to its commonly found ingredients. Analysis of economic benefit is not valid for yard waste, which is completely renewable and is not typically considered a raw material.

State recycling grants under Act 101 have provided support of, and benefits to, County and municipal recycling programs in the form of planning grants under Section 901, Development and Implementation Grants under Section 902, County Recycling Coordinator Grants under Section 903, and Recycling Performance Grants under Section 904. Some of these grants reimburse counties and municipalities for money spent implementing or enhancing recycling programs, while others reward counties and municipalities that have succeeded in recovering significant volumes of materials. Monies from these grants can be significant. Since the last Plan revision in 2005, Berks County municipalities have received over \$ 3 million in 902 grants, over \$5.4 million in 904 grants and \$240,000 in 903 grants.

The County and individual municipalities will continue to work with the DEP to enhance their recycling programs and, through the Authority's Executive Director, improve reporting channels for recycling data collection as well as determine which of the programs are eligible for appropriate grant funds. The Authority will also work with municipalities to prioritize applications for municipalities that are in the most need of grant funding to start recycling programs or improve the efficiency of existing ones.

In addition to the potential benefits of recycling, the benefits of waste reduction are extremely valuable.

4.4 Existing Recycling Activities

As per §272.411 of the PA Code, all municipalities with populations exceeding 5,000 people and population densities exceeding 300 people per square mile are required to recycle, as well as any municipality exceeding 10,000 residents. These are referred to as "mandated municipalities". Table 4-1 summarizes the recycling programs, both curbside and drop-off, that are presently in place in the municipalities in Berks County and also indicates if that municipality is required to recycle. The following sections summarize the existing recycling activities in the County available through state and county reports.

4.4.1 Mandated Municipalities

Prior to the 2010 Census, thirteen municipalities in the County were required to recycle. These are: the City of Reading; Amity, Bern, Colebrookdale, Cumru, Exeter, Maiden creek, Muhlenberg, South Heidelberg and Spring Townships; and the Boroughs of Birdsboro, Shillington, and Wyomissing. All thirteen of these mandated municipalities in the County utilize curbside collection of recyclables for residents, as shown in Table 4-1. Furthermore, each of these municipalities has implemented a curbside recycling program that collects more than the minimum required types of materials.

As a result of the 2010 Census, one municipality, Lower Heidelberg Township, in Berks County was newly mandated to recycle. However, Lower Heidelberg Township previously had a curbside recycling program that met the Act 101 requirements, therefore their only requirement was the implementation of a yard waste collection and drop-off program.

In 2012, Lower Heidelberg Township was awarded Section 902 grant monies for its efforts to expand their curbside recycling program and the implementation of their yard waste drop-off site, which is shared with South Heidelberg Township.

The Authority's Executive Director will continue to provide the municipalities with assistance in developing an appropriate program and coordinating details of these programs. The Authority's Executive Director will continue to assist municipalities to improve reporting channels for recycling data collection, thereby improving the accuracy of the County's overall reported recycling rate and improving the accuracy of the recycling reports.

**TABLE 4-1
CURBSIDE AND DROP-OFF RECYCLING PROGRAMS IMPLEMENTED IN BERKS COUNTY**

Municipality	Mandated	Curbside	Drop off	Materials - Curbside	Materials – Drop-off
Adamstown Borough	No	No	No	NONE	
Albany Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Alsace Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Amity Township	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Bally Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Bechtelsville Borough	No	No	No	NONE	
Bern Township	Yes	Yes	Yes	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper & OCC
Bernville Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Bethel Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Birdsboro Borough	Yes	Yes	Yes	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Boyetown Borough	No	No	No	NONE	
Brecknock Township	No	No	No	NONE	
Caernarvon Township	No	No	No	NONE	
Centerport Borough	No	No	No	NONE	
Centre Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
City of Reading	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Colebrookdale Borough	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Cumru Township	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
District Township	No	No	No	NONE	
Douglass Township	No	No	No	NONE	
Earl Township	No	No	No	NONE	
Exeter Township	Yes	Yes	Yes	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper and OCC
Fleetwood Borough	No	No	No	NONE	
Greenwich Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Hamburg Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Heidelberg Township	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Hereford Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Jefferson Township	No	No	No	NONE	
Kenhorst Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Kutztown Borough	Yes	Yes	Yes	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Laureldale Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Leesport Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Lenhartsville Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Longswamp Township	No	No	No	NONE	

Municipality	Mandated	Curbside	Drop-off	Materials – Curbside	Materials – Drop-off
Lower Heidelberg Township	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Lyons Borough	No	No	No	NONE	
Maidencreek Township	Yes	Yes	Yes	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Marion Township - Starting 07	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Maxatawny Township	No	No	No	NONE	
Mohnton Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Mount Penn Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Muhlenberg Township	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
New Morgan Borough	No	No	No	NONE	
North Heidelberg Township	No	No	No	NONE	
Oley Township	No	No	No	NONE	
Ontelaunee Township	No	No	Yes	NONE	
Penn Township	No	No	No	NONE	
Perry Township	No	No	No	NONE	
Pike Township	No	No	No	NONE	
Richmond Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Robeson Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Robesonia Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Rockland Township	No	No	No	NONE	
Ruscombamanor Township	No	No	No	NONE	
Shillington Borough	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Shoemakersville Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Sinking Spring Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
South Heidelberg Township	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Spring Township	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
St. Lawrence Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Strausstown Borough	No	No	No	None	
Tilden Township	No	No	No	NONE	
Topton Borough	No	No	No	NONE	
Tulpehocken Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Union Township	No	No	No	NONE	
Upper Bern Township	No	No	No	NONE	
Upper Tulpehocken Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Washington Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Windsor Township	No	No	Yes		Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper
Womelsdorf Borough	No	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	
Wyomissing Borough	Yes	Yes	No	Aluminum and tin cans, clear and colored glass bottles and jars, #1-#6 Plastic bottles and containers and mixed paper	

4.4.2 Non-mandated Municipalities

Sixty (60) municipalities in Berks County are not yet mandated to implement recycling programs. Of these 60 non-mandated municipalities, twenty-eight have voluntary programs in place.

Five non-mandated municipalities have voluntary recycling drop-off programs in place (Alsace, Lower Alsace, Ontelaunee, Robeson and Washington Townships), and eighteen non-mandated municipalities have curbside collection programs in place (Heidelberg and Marion Townships, Bally, Bernville, Hamburg, Kenhorst, Kutztown, Laureldale, Leesport, Mohnton, Mount Penn, Robesonia, St. Lawrence, Shoemakersville, Sinking Spring, Wernersville, West Reading and Womelsdorf Boroughs).

Nine non-mandated municipalities are included in the county's recycling drop-off program (Albany, Bethel, Centre, Greenwich, Hereford, Richmond, Tulpehocken, Upper Tulpehocken and Windsor Townships). The recycling roll-off containers are placed at each of these municipalities and serviced on an as need basis, typically every four days.

4.4.3 Curbside Collection

Standard Materials

Presently, the majority of successful County programs involve curbside collection of recyclables, often by the same vendor that provides the municipal waste collection services. The recycling vendor is typically contracted directly by the municipality or resident to provide the service. There is an extensive network of private haulers that provide recycling collection services to Berks County.

Robesonia, Wernersville, and Womelsdorf operate under a Council of Government (COG) through which trash collection and recycling for all three municipalities are contracted together. This type of inter-municipal cooperation and agreement benefits the participants by achieving lower rates for joint collection services than for individual collection services. An example of the inter-municipal agreement is included in Appendix B.

Yard Waste

The collection of fall leaves is often handled by municipal staff or addressed in municipal waste collection contracts. Amity, Bern, Colebrookdale, Cumru, Exeter, Fleetwood, Lower Heidelberg, Maiden creek, Muhlenberg, South Heidelberg and Spring Townships, and Hamburg, Kenhorst, Kutztown, Laureldale, Mohnton Mount Penn, Robesonia, St. Lawrence, Shillington, Sinking Spring, Topton,

Wernersville, West Reading, Womelsdorf, and Wyomissing Boroughs and the City of Reading all currently provide curbside fall collection of leaves for their residents.

In addition, Act 101 requires mandated municipalities to collect yard waste, including garden residues, shrubbery, tree trimmings and similar materials, through curbside collection twice per year, supplemented with a drop-off location. These materials are to be collected so they are diverted from disposal in landfills. Often these materials are collected for either mulching or composting operations. Yard waste composting facilities must be approved by DEP. Currently the DEP approved composting facilities relevant to the Berks County area include the following:

- Zwicky Processing and Recycling
- Ridgewood Soil
- Martin's Mulch
- Rodale Institute
- Exeter Township

Other seasonal drop-off facilities for leaves are available to residents around the County; drop-off centers for yard wastes are discussed in more detail in the following section. Throughout Berks County the leaves are currently taken to farms for direct land application or to other private composting facilities. Some examples of curbside leaf and yard waste collection practices are discussed herein.

The City of Reading provides a city-wide loose leaf collection program to its residents throughout the fall of each year, as well as spring and summer yard waste collection program. The yard waste must be placed in brown paper bags for pickup. Overall, both the leaf and yard waste collection programs yielded approximately 11,000 cubic yards of recycled yard wastes in 2013. The materials are taken to a permitted yard waste site for processing/composting.

Additional examples include Amity and Muhlenberg Townships. Amity Township operates a loose leaf collection program, where the leaves are used as mulch by a local farmer. The Township estimates 1,450 cubic yards of leaves and brush were collected in 2013. Muhlenberg Township also conducts a loose leaf collection program in the fall of each year. An estimated 2,000 cubic yards of leaf waste were collected in 2013 and taken to Giorgio Foods, Inc., for use in making compost solely for its own private facility operations and governed under agricultural guidelines. In addition, the Township collected over 1,000 cubic yards of yard waste for composting. Exeter Township operates their own yard waste composting facility processing their own yard waste into compost. All leaf waste that is stored at this site is shipped off site for processing.

The Rodale Institute accepts leaves from numerous municipalities located both in and outside of Berks County. Leaves are land applied and used as a natural fertilizer at the farm.

4.4.4 Municipal Drop-Off Centers

Standard Materials

Numerous municipalities feature drop-off facilities, as previously discussed in Section 4.4 and shown on Table 4-1. In addition, the County operates the Berks County Recycling Center in Bern Township. This facility is open 7 days a week for the convenience of County residents, and accepts clear, brown, and green glass; aluminum and bi-metallic cans; plastics; newsprint; cardboard; phonebooks; magazines; junk mail; catalogs; office paper; and paperboard.

In 2010, the Authority installed a baler at our recycling center on Hilltop Rd., in Leesport, Pa., which drastically decreased the operating expenses of that site, providing a net savings of over \$90,000 during the first three years of operation.

As indicated, many municipalities not mandated to recycle have voluntary drop-off centers, are able to participate either as part of the County's recycling drop-off program, or as a host municipality to one of the landfills, or with a private processing/recycling company.

Yard Wastes

Sixteen municipalities, up from nine in 2005, have drop-off centers where residents can bring their brush, branches, and other yard materials. For example, Bernville, Birdsboro, Kutztown, Shillington and Sinking Spring Boroughs and Amity, Bern, Colebrookdale, Cumru, Exeter, Lower Heidelberg, Maiden creek, Maxatawny, Muhlenberg, South Heidelberg, Spring Townships have drop-off center where its residents can bring their brush, branches, and other yard materials.

4.4.5 Facilities Provided by Landfills or Other Private Entities

Numerous waste-disposal and processing facilities in the County have provided drop-off centers for recyclable materials. These are listed on the Authority website with specific information related to location, availability, and items collected at each. Information on major commercial facilities, such as landfills and large recycling processing operations, is also summarized in the following sections.

4.4.5.1 Conestoga Landfill Recycling Center

A formal recycling center is provided at the BFI Conestoga Landfill Recycling Center in New Morgan Borough, just north of Caernarvon Township in Berks County. Items can be dropped off weekdays and limited hours on Saturday. The BFI Conestoga Landfill Recycling Center is currently accepting newspapers, magazines, telephone books, cardboard, junk mail, aluminum and bi-metal cans, and clear glass bottles and jars.

4.4.5.2 Western Berks Landfill

Western Berks Landfill offers a drop-off facility for newsprint, glass, aluminum, and steel cans. The drop-off facility is open to the general public during normal landfill operating hours.

4.4.5.3 Rolling Hills Landfill

Rolling Hills Landfill undertakes captive recycling of bulk metal/white goods that are received as part of the landfill's waste stream. In addition, they accept aluminum and tin cans, glass bottles and jars and PET/HDPE plastics.

4.4.5.4 Pioneer Crossing Landfill

The Pioneer Crossing Landfill currently accepts aluminum and tins cans, plastic bottles and containers and glass bottles and jars at their recycling center located at the landfill scale house. In addition, they accept electronic recyclables and freon containing items during certain operating hours.

4.4.5.5 Cogle's Recycling

Cogle's Recycling is located in Hamburg in the northern section of the County. Cogle's Recycling is open weekdays with limited hours on Saturdays. Cogle's accepts the following materials: all glass, plastics #1 to #7, aluminum and bi-metallic cans, brass, copper, lead, magnesium, stainless steel, tin and ferrous metals, newsprint, cardboard, office paper, paperboard, phone books, catalogs, magazines, and any type of uncontaminated paper.

4.4.5.6 *Others*

Numerous other private recyclers operate in Berks County, including Goldstan Trading, Laurel Street Recycling, Berks Container Recovery, Royal Green and Nester's Sanitation, to name a few (refer to the Authority website for a complete list of current recycling centers). These entities operate under market conditions and will continue to provide these services at market determined rates. Disadvantages of utilizing some private recycling centers include limitations on types of materials accepted, and/or restrictions on co-mingling of materials (i.e., glass must be separated by color, plastics must be separated by type, etc.).

4.4.6 Private Composting Facilities

There are several private composting facilities that currently service the Berks County area. These facilities include Rodale Institute, Zwicky Processing and Recycling, Giorgio Foods, Martins Mulch, Ridgewood Soils and the Berks County prison.

4.4.6.1 Zwicky Processing & Recycling, Inc.

Zwicky Processing & Recycling runs wood recycling and composting operations at facilities in Berks County. Zwicky processes and composts a variety of yard wastes, scrap wood, land clearing debris, grass clippings and leaves. Zwicky accepts materials from local land clearing operations, landscape contractors and homeowners, and has been aggressive in providing yard waste debris collection services to municipalities in Berks County by furnishing container services at drop off sites. Currently Zwicky runs two wood processing and composting operations, all in Berks County (Robesonia Borough, and Maiden creek Townships). Through its recycling processes, Zwicky produces several varieties of wood mulch, manufactured topsoil and finish compost that are available to landscape contractors and nurseries. In addition, Zwicky provides fuel for cement mills and the Evergreen Community Power plant by processing wood waste to the proper BTU value.

4.4.6.2 Giorgio Foods, Inc.

Giorgio Foods, Inc., is one of the largest growers, processors and distributors of mushrooms in the country. Giorgio operates several mushroom production facilities at sites located in Berks County. Giorgio Foods uses leaves as substrate for making high-quality compost, which Giorgio then uses as a feedstock for mushroom production in its many local growing facilities. With the use of this compost for mushroom production, the operation is governed under agricultural guidelines rather than under waste processing/composting/ recycling guidelines.

4.4.6.3 Rodale Institute Composting Education and Research Center

The Rodale Institute, located just outside the Borough of Kutztown, researches and promotes composting to help people improve soils, grow healthier crops, conserve resources, and protect the environment. Public and private partners include the U.S. Department of Agriculture, Pennsylvania State University, Composting Council, Pennsylvania Composting Association, and the Department of Environmental Protection.

Rodale's main production area features all-weather access and appropriate environmental protection, and is available to the Berks County Conservation District, Natural Resource Conservation Service, DEP, and others to use as a model site for agricultural compost production. This facility is primarily an experimental farm for manure composting, therefore is governed under agricultural guidelines rather than under waste processing/composting/recycling guidelines.

4.4.6.4 Martin's Mulch

Martin's Mulch is a private company located in Ephrata, Pa, offering materials for landscaping, including mulch derived from yard waste composting. According to PA DEP, the major sources of composting materials received at Martin's Mulch currently come from out of state.

4.4.6.5 Ridgewood Soil

Ridgewood Soil is a private company offering materials for landscaping, including mulch derived from yard waste composting. In addition, they provide collection and drop-off services for yard waste materials. They currently process all of the yard waste that is collected through the Cumru Township yard waste drop-off site.

4.4.6.6 Berks County prison

The Berks County prison in Bern Township currently operates a composting site for yard wastes and pre and post-consumer food waste. This operation is permitted by PA DEP. The materials come from on-site sources, with the rare exception of yard wastes received from public property within the County (i.e., parks and recreation areas). The composted material is used on the prison grounds for mulching flower beds and vegetable gardens, and occasionally on other county properties.

4.4.7 Special Waste Collections

The Authority operates a number of collection centers and collection events to handle different types of special wastes that residents have for disposal.

4.4.7.1 *Electronic Recycling Center*

On July 1, 2010 the Authority opened a full-time electronic recycling site at 1316 Hilltop Rd., in Bern Township. Since opening in July of 2010, 26,800 residents participated in our collections and brought in 2.58 million pounds of electronics for recycling. Nearly half of the material collected in the past three and a half years was collected in 2013, with approximately half of the total number of residents visiting the site last year. Effective January 1, 2012 residential materials were accepted free of charge in compliance with the Covered Device Act, which prohibits charging residents for certain types of electronics.

4.4.7.2 *Tire Recycling Center*

The Authority held its first tire collection event in November of 2007 and opened a full-time tire collection center in April of 2012 at the site of our electronic recycling center on Hilltop Rd. The center operates on the same hours as the electronic center, thereby not incurring additional labor costs. Since the start of our program 3,700 residents have recycled nearly 462,000 pounds of tires. Residents are charged a per tire disposal fee, which covers most of the program costs.

4.4.7.3 *Household Hazardous Waste Collection Event*

The Authority operates a spring and fall collection program for household hazardous waste from Berks County residents. Since 2007, 26,000 residents have disposed of approximately 1,140,000 pounds of hazardous waste at our collection events. In 2013, 3,200 residents disposed of 169,000 pounds of hazardous waste. Participation and the amount of wastes collected during these six hour events continues to grow each year, as residents become educated about the programs and have begun to rely on the semi-annual events, as the proper disposal method.

The following is a table outlining the costs and revenue sources associated with the operation of the Authority's Household Hazardous waste collection since 2008:

	2008	2009	2010	2011	2012	2013
Collection Costs	\$ 146,090	\$ 121,293	\$ 71,024	\$ 99,502	\$104,300	\$104,000
PADEP	\$ 73,045	\$ 60,647	\$ 35,512	\$ 49,751	\$ 52,144	\$ 56,537
Sponsorships	\$ 10,075	\$ 13,350	\$ 12,350	\$ 14,400	\$ 13,575	\$ 17,875
Solid Waste Authority *	\$ 62,970	\$ 47,299	\$ 23,162	\$ 35,351	\$ 38,581	\$ 29,588

4.4.7.4 Paper Shredding Event

The Authority held its first paper shredding event in October of 2009. From the fall of 2009 through the fall of 2013, 8,200 residents disposed of 335,000 pounds of confidential documents for shredding. The Authority expects this program to continue to grow as residents become educated about the importance of protecting yourself from identify theft and properly shredding your confidential documents.

4.4.7.5 Pharmaceutical Collection Event

The Authority held its first pharmaceutical collection events in 2009. Since that time 4,350 residents have properly disposed of 11,800 pounds of medications, through our events. This event is held free of charge with the following sponsors assisting with the operation and funding of this program: Pa American Water, Western Berks Water Authority, Reading Area Water Authority, Berks County District Attorney, Exeter Police Department, City of Reading Police Department, York County Solid Waste Authority and MXI Environmental.

In 2013, the Berks County District Attorney's office began a full-time collection program for pharmaceuticals in nineteen police stations throughout Berks County. The Authority expects this program to continue to grow as residents become educated about the importance of proper medication disposal. Below is a link to the Berks County District Attorney website with additional information on that program: <http://www.co.berks.pa.us/dept/da/Pages/medicationdropbox.aspx>

4.4.8 Commercial and Institutional Establishments Recycling

Commercial and institutional establishments have been contracting privately with haulers to provide recycling services, for years. This practice has been effective and will continue. Some businesses in the County have gone above and beyond typical recycling practices. For instance, Vanity Fair Factory Outlet, Cabella's retail store, Associated Wholesalers, Inc. are just a few local businesses that have done a great job in commercial recycling in Berks County. This includes training related to how to use a cardboard baler, information on paper recycling, buying recycled goods, and properly sorting, recycling, and disposing of trash. In addition, at Vanity Fair Factory Outlet the center provides on-site composting of its landscaping wastes and has provided all tenants with bottle and can recycling receptacles.

4.4.9 Summary of Existing Recycling Activities

In summary, 15% of County municipalities were mandated to recycle prior to the 2000 Census. Four additional municipalities were added based on the 2000 Census and one additional municipality based on the 2010 Census, bringing the total mandated to sixteen, or 21% of the County's municipalities. Currently twelve mandated municipalities rely on curbside programs alone and two utilize a combination of curbside and drop-off centers, In Berks County, 60% of all municipalities, mandated or not, have some form of recycling program in place.

As non-mandated municipalities become mandated or request assistance from the County to develop programs, the Authority Executive Director will assist them in developing appropriate programs. The Authority Executive Director will encourage municipalities to continue to take advantage of the PADEP and Technical Assistance grants described previously in this section, and will assist municipalities with developing reporting channels for recycling data collection.

4.5 Integration of Recycling with Waste Management Systems

At the present time, recycling programs in mandated municipalities in the County are relatively well integrated into the existing waste management systems by private haulers. Recycling has been implemented in the County, and in areas where residential recycling collection practices are routinely performed, recycling is fully integrated with existing waste management programs.

4.6 Increased Recycling

Increased recycling rates can be achieved by a number of different methods, or a combination of methods. Existing programs can be expanded by adding materials, increasing volume, or by the development of new collection programs.

The objective of the Plan Revision that was approved in December of 2005 was to meet the State goal of 35% recycling by 2012. At the time the Plan was approved the County recycling rate was 21% up from 17% in 2004. Of our seventy-four municipalities only sixteen are mandated under Act 101 to implement curbside recycling programs for their residents. Under the 2010 census, Lower Heidelberg Township also became a mandated municipality. As of December 31, 2013, thirty-one of the County's municipalities provide curbside recycling collection; thirteen provide drop-off programs for their residents, of which ten are operated by the Authority, with twenty-six municipalities in Berks providing no recycling services to their residents.

In 2013, the Authority continued to work with non-mandated municipalities to gather recycling data from their haulers who were providing recycling services to their residents and businesses, through private subscriptions. The County recycling rate rose from 21%

in 2005 to 29% in 2008 simply by evaluating the County's non-mandated municipalities and including all of their recyclable materials in the County's year end reports.

In January of 2008 the Authority assumed all recycling operations for the County, which included the operation of both the rural recycling program, which currently services nine municipalities, as well as the full time recycling center on Hilltop Road in Bern Township. In March of 2013, the rural recycling program was changed from monthly service to full-time locations, making these facilities more accessible to County residents, while increasing the amount of materials collected. During the past six year the Authority has invested much needed funds into the appearance and operation of the recycling centers, and has installed equipment which greatly reduced our operating costs. In 2010, the Authority hired a full-time employee to oversee the operation of the drop-off location and full-time electronic and tire recycling center on Hilltop Rd. This was required do to the increase in participation at the Center, which is requiring additional hours that were not originally contemplated under the original Agreement, with Easy Does It, Inc., who oversaw the Center in 2008 and early 2009.

With the completion of these projects it has both improved the appearance of the Center as well as the economics of the Center, by increasing the value of cardboard and mixed paper with the installation of the baler. Ninety percent of the costs for these improvements have been reimbursed to the Authority through our 902 Recycling Grant from PADEP. Approximately 500 tons of recyclables (cardboard, newspaper and commingled bottles and cans) have been recycled at the Center, each year, from 2010 through 2012. That number increased by 20%, to 600 tons in 2013. The cost of processing that material in 2010 was \$21,300. That same material was processed using the baler at an average profit of \$15,000 each year from 2011 through 2013. The installation of the baler has had a net effect of over \$90,000 in savings in the first three years of operation.

By improving the economics of operating the recycling centers for the County, the Authority is able to reallocate those funds and provide new recycling programs for County residents.

The Authority encourages municipalities to investigate and evaluate recycling options, including inter-municipal cooperation, and encourages the County and municipalities to work together to research and evaluate options for establishing a wide range program of recycling opportunities.

The following sections provide options for increasing recycling of municipal and yard wastes.

4.6.1 Options for Standard Materials

Inadequate reporting ultimately results in lower reported recycling rates. The Authority Executive Director will be available to assist municipalities with improving reporting channels for recycling data collection, thereby improving the accuracy of the County's overall reported recycling rate and improving the accuracy of the recycling reports, as has been done over the past eight (8) years.

4.6.1.1 Curbside Collection

As mentioned previously, the majority of successful programs involve curbside collection of recyclables, often by the same vendor that provides the municipal waste collection services. The recycling vendor is typically contracted directly by the municipality to provide the service.

Municipalities will continue to contract for these services. Municipalities desiring to increase curbside collection of recyclables can add materials to their current program. Municipalities desiring to add curbside collection of recyclables can investigate opportunities for joint/inter-municipal agreements for such services; refer to Section 4.8, for additional information. The Executive Director will strive to assist municipalities to reach their full recycling potential by providing information on recyclables markets as well as information on financial assistance and program costs.

4.6.1.2 Commercial and Institutional Establishments Recycling

Commercial and institutional establishments have been contracting privately with haulers to provide recycling services. This practice has been effective and will continue over the life of this Plan Revision. The Executive Director will strive to assist establishments to reach their full recycling potential. Among other programs, the County should encourage establishments to provide containers for recyclables in lunchrooms and encourage they hold cleaning services accountable for keeping wastes separate from materials collected for recycling.

4.6.1.3 Drop-Off Locations

The low-density, agricultural nature of much of the County encourages the use of multiple recycling drop-off areas that are sited at locations accessible to County residents. In 2013, all nine of rural recycling drop off locations were changed to full-time sites. The ten full-time drop-off locations currently operated by the Authority provide easy accessibility for residents to recycle their materials, as seen in the dramatic increase in materials being brought to these locations.

Although many municipalities not mandated to recycle have either curbside collection programs, participate in the County's recycling drop-off program, operate their own drop-off program or utilize one of the landfills or private recycling centers, there are still some non-mandated municipalities that do not provide any option for residential or commercial recycling within their municipality. Some of these municipalities have expressed interest in having the County program expanded to include drop-off facilities within their municipality, which will continue to be part of the budget discussions. Again, municipalities can investigate opportunities to cooperate with each other in establishing drop-off centers through inter-municipal agreements. A continued goal of the Authority Executive Director is to encourage these municipalities to develop and open drop-off centers, which should help the County exceed a recycling rate of 35%.

4.6.1.4 Facilities Provided by Landfills or Other Private Entities

Numerous waste-disposal and processing facilities in the County provide drop-off centers for recyclable materials (described in Section 4.4.5). Municipalities in need of increasing their recycling rates should consider the services available through these facilities.

4.6.2 Options for Yard Wastes

In addition to the following options for increasing recycling of yard wastes, municipalities should first consider reviewing, and if necessary, updating the method(s) of reporting. Inadequate reporting ultimately results in lower reported recycling rates. The Authority Executive Director is available to assist municipalities with improving reporting channels for recycling data collection, thereby improving the accuracy of the County's overall reported recycling rate and improving the accuracy of the recycling reports.

4.6.2.1 Curbside Collection

The collection of yard wastes is often handled by municipal staff or addressed in municipal waste collection contracts. Municipalities will continue to provide, or contract for, these services. Municipalities desiring to add or increase curbside collection of yard wastes can investigate opportunities for joint/intermunicipal agreements for such services. Refer to Section 4.2.2 for additional information concerning yard waste collection.

4.6.2.2 Municipal Composting Facility

A goal of the Authority is to encourage municipalities to develop and open yard waste drop-off centers to provide convenient options for area residents.

4.6.2.3 Private Composting Facilities

There are several private composting facilities that currently serve the Berks County area (described in Section 4.4.3). Municipalities looking to offer this service to their residents should consider the services available through these facilities.

4.6.2.4 Backyard Composting

The most common method of yard waste recycling in the County is backyard composting. Unfortunately, the quantities of yard wastes recycled via this method are not reported. With respect to backyard composting, the Authority Executive Director will continue to educate and encourage municipalities to assess the degree to which this practice is occurring in their area.

4.7 Options for Processing, Storage and Sale of Recyclables

Processing and disposal facilities in Berks County presently utilize the broker method to sell recyclable materials and move them into the market for reuse. This method takes advantage of market prices and is used by private entities.

Temporary storage of recyclable materials occurs at each drop-off center, whether private or municipal.

Storage of finished compost and mulch is always handled at the composting facility, whether it is a municipal or private operation.

4.8 Options for Intermunicipal Cooperation

The Berks County Planning Commission has prepared the Berks County Comprehensive Plan Revision, known as Berks Vision 2020. Berks Vision 2020 is a guide to growth and development within the County through year 2020. It focuses on many topics, including Intergovernmental Cooperation/Participation. The goal of this topic is “to develop and expand cooperation and communication among municipal officials and citizens to provide for increased participation in the planning process, and to create a more efficient mechanism to meet government responsibilities.”

Three municipalities (Robesonia, Wernersville and Womelsdorf), already operate under a Council of Government (COG) through which trash collection and recycling for all three municipalities are contracted together. Similarly, five municipalities have an intergovernmental cooperative agreement that enables them to provide curbside leaf collection to their residents. These types of inter-municipal cooperation and agreements benefit the participants by achieving lower rates for joint services than for individual services.

The Executive Director will work to provide municipalities with the information necessary to achieve the goals set in Berks Vision 2020 with respect to partnerships and coordination and inter-municipal incentives for collection, storage, and sale of recyclable materials. Options for consideration should include, at a minimum, joint collection contracts and cooperative drop-off locations.

4.9 Schedule for Implementation of Recycling Programs

As discussed in Section 4.4.1, sixteen municipalities in the County are now mandated to recycle and have appropriate programs in place. Lower Heidelberg Township was newly mandated to recycle under the 2010 census. Although Lower Heidelberg already had curbside recycling in place for their residents they entered into an inter-municipal agreement with South Heidelberg Township to use South Heidelberg's yard waste drop-off program, in order to meet Lower Heidelberg's yard waste requirements, under Act 101.

4.10 Estimated Costs of a Recycling Program

The three main benefits of implementing a recycling program are the potential revenues from sale of materials and the avoided disposal costs; the resources saved by reusing materials; and the removal of recyclable materials from the waste stream to improve the combustibility and/or decomposition characteristics of the waste stream.

Municipal waste collection contracts should be unaffected or may benefit from including recycling with the waste collection services because of avoided disposal costs and potential revenues. The cost of implementing these contracts is offset by the decrease in overall disposal costs for disposing of solid waste, because the volume of waste to be disposed of will be less. The sale of recyclable materials is often volatile, with a market that suffers from peak highs and lows.

The actual cost of the composting pilot project and any eventual Countywide system will depend on the extent to which the County and municipalities opt to utilize the services of the private sector versus the development and operation of municipal drop-off sites, transportation systems, and processing facilities. The County and municipalities will continue to research and analyze the available options and select and implement

the approach that best meets the overall needs of the overall community.

4.11 Consideration of Existing Recycling Businesses

Act 101 requires that the County Plan describe what consideration has been accorded to persons engaged in the business of recycling (as of September 26, 1988) and explain how recycling under the Plan will be coordinated with, and will not interfere with, recycling by mandated municipalities. The previous parts of this section pointed out how the County's current recycling strategy is based primarily upon continuation of the present municipal and other recycling programs in the County. These existing operations will coexist with municipal recycling programs and with non-profit and for-profit recycling drop-off operations.

4.12 Recycling Education Efforts

Both the County and municipalities share the responsibility for public education. The County will also assist municipalities to tailor their educational materials to their specific needs. Community-specific promotional materials have the advantage of harnessing community pride to generate interest and boost participation. Even for program-specific public education efforts, the County has, and will, provide assistance, such as model brochures and cost information.

Costs of developing a recycling program, whether curbside or drop-off, or a mandatory or non-mandatory program, are specific to each municipality or group developing the program. The County, through the Executive Director, can provide recycling program cost analysis, bidding assistance and guidance to any municipality or group that seeks assistance in developing a program.

4.13 Waste Reduction Strategies

Waste reduction, including reuse of products, may be achieved through both education of consumers and regulation of the amount and types of packaging. Educational efforts are to be carried out by the County working in conjunction with the waste system authorities and municipalities. Regulations designed to reduce the amount of packaging may be encouraged at both the state and federal level. Although Berks County can have little impact on the design of products ranging from food packaging to electronics, the County can educate residents to make wise decisions when they purchase these products.

Berks County has elected to focus on waste reduction in order to complement its recycling programs. Although the environmental benefits of recycling are well known, it is much more difficult to quantify the effect that successful waste reduction, minimization, and reuse programs have on decreasing the waste stream.

In the past three years, on average, each Berks County resident generated about 5.7 pounds of municipal waste material per day, which is slightly higher than the state average of 4.4 pounds per person per day (0.8 tons/person/year, PA DEP).

Berks County is not alone in examining possible programs and actions to decrease the volume of the waste stream at its source. Numerous federal programs and other states have begun to shift the focus from recycling and pollution cleanup to pollution avoidance and decreasing waste stream volume or pollution potential.

Source reduction techniques that will be encouraged by the County include:

- backyard composting of yard waste;
- buying products in bulk or larger containers rather than multiple small containers;
- making a concerted effort to purchase goods that feature reduced packaging;
- using reusable fabric bags for packing purchases at grocery stores instead of disposable paper or plastic ones;
- using a sponge rather than disposable towels;
- buying foods and detergents in concentrated form;
- buying fresh produce with minimal packaging;
- avoiding purchase of products that are double packaged;
- avoiding single-use products such as disposable razors, diapers, lighters, and some food products;
- repairing broken items rather than disposing of them;
- donating unwanted items to charity;
- decreasing the volume of unwanted “junk mail” by removing name from national mailing lists.

In addition, the County will encourage residents and businesses to complete the recycling loop by purchasing goods made from recycled materials. The County will educate residents about the logos that can be found on products that identify them as packaged in containers made from recycled materials. This includes foods such as dry food packages, canned foods and beverages, detergent and other cleaning product containers, glass bottles, health and beauty product containers, and paper products such as tissues, paper towels and bathroom tissue. County educational materials will also inform residents that recycled materials can be found in other consumer products as well, such as writing paper, cards, and other stationery supplies, carpeting, tools, cardboard boxes, plastic “lumber”, retread tires, and even some articles of clothing.

CHAPTER 5 - SELECTION AND JUSTIFICATION OF MUNICIPAL WASTE MANAGEMENT PLAN

5.1 Introduction

This section describes how the County evaluated waste processing and disposal options.

5.2 Financing of Selected Programs

Berks County does not intend to develop or construct a waste disposal facility and will, therefore, incur no financing costs associated with its obligation to ensure disposal capacity.

Berks County has Disposal Capacity Agreements with the Conestoga Landfill, Rolling Hills Landfill, and the Western Berks Landfill. There is no obligation on the part of the County to provide any of these facilities with specific amounts of waste.

This Plan Revision is considered an Open Menu Plan by PADEP, which allows waste from within Berks County to be disposed of at any permitted disposal facility. Berks County does not and will not flow control waste.

5.3 Recycling and Waste Reduction Programs

Under the Plan Revision, municipalities have the obligation to look at their recycling rates and to select a recycling program that best matches the needs of their municipality. Waste Reduction Programs, as outlined in the Plan Revision, are encouraged at all levels of government and in the private sector. The result of improvements recommended in the Plan Revision will be a significantly improved recycling rate for the County, one that meets the State goal of 35%.

5.4 Processing and Disposal Plan

The Berks County Solid Waste Authority elected to extend the existing disposal capacity agreements through 2025 or 10 years of the date of Plan adoption, which secured adequate disposal capacity for the Plan Revision's 10-year time frame. The County does not control the amount of waste delivered to the facility. There is no obligation by the County to provide a facility with a specific amount of waste.

Berks County will not designate any disposal facilities in this Open Menu Plan

CHAPTER 6 - LOCATION OF FACILITIES AND PROGRAMS

This Plan Revision identifies the location of all facilities that currently accept Berks County waste as well as recycling programs that exist or are planned in the County. This includes all landfills and waste-to-energy facilities, yard waste composting or processing facilities, recycling centers, and recycling drop-off or curbside programs.

6.1 Municipal Waste

The recycling programs (for mandated and non-mandated municipalities) that are presently in place in the County were discussed in Chapter 4, as were recycling drop-off centers and yard waste composting facilities.

Criteria for municipalities that wish to voluntarily implement a recycling and/or yard waste drop-off site are as follows:

- The site should be near the population center of the municipality so as to be as convenient as possible for the majority of residents. This will result in as much material being collected as possible.
- The property should ideally be owned by the municipality, which can sponsor the site and also submit grants to PADEP for site improvements. If this is not possible, perhaps a local civic or environmental group or even a private owner would be willing to donate land for the use.
- The location should be secure to prevent illicit dumping of non-recyclable materials or garbage, and to prevent persons from removing recyclable materials from the site illegally for personal profit.
- The site should be isolated from residences, local commercial establishments, or institutions so as not to produce a visual, noise, or factory nuisance.
- The site should be easily accessible by standard vehicles, with adequate signage to direct the resident where he or she may and may not drive.
- Signs should clearly indicate what materials are accepted and where they should be deposited.

Municipalities that will develop curbside collection programs should keep in mind the following factors when designing a program that best meets their needs:

- The municipality should work with the Authority Executive Director as well as neighboring municipalities, to design a program that will optimize recycling while keeping expenses down.
- The existing municipal waste management collection contract method utilized by the municipality, whether municipal, residential, or subscription.
- The number of haulers servicing their municipality or nearby municipalities that are equipped to collect recycled materials.
- The amount that the municipality is initially willing to pay for the recycling contract and startup costs.
- The availability of staff to promote the program, monitor participation, and follow through with DEP equipment and performance grant applications to secure monies based on a program's success.
- The centers of population in the municipality and the likely participation rate that would be provided by the area. This would entail review of existing participation rates of residents at nearby drop-off facilities.

6.2 Hilltop Road – Recycling Center

Improvements to Recycling Center on Hilltop Road

The Authority invested approximately \$269,000 during 2010-2013 installing the following equipment and completing much needed repairs to the center:

- Paved the parking lot at the recycling center on Hilltop Road
- Installed restroom facilities including the installation of a well and septic
- Completed structural repairs to the floor in the electronic recycling center
- Repaired the roof at the recycling center
- Installed a baler and tipper baling mixed paper and OCC
- Painted all roll-off containers at Hilltop Road and rural program
- Renovated a portion of the existing barn for the expansion of the electronic recycling storage area.
- Purchased two new roll-off containers for storage of tires and freon waste.
- Poured a new concrete pad for siting roll-off containers.

6.3 Household Hazardous Waste

In 2005 through 2014, the Authority utilized a program through the Pennsylvania Department of Agriculture whereby the Authority "piggy-backed" on a contract the Commonwealth of PA has with MSE Environmental. This program provides for two, one-day HHW drop-off events per year in Berks County. Based on available funding, the Authority intends to continue holding two such events for County resident's each year. DEP reimburses the Authority for 50% of the costs of operating such program and 100% of the cost of all pesticides collected through the event.

Future HHW drop-off programs beyond 2014 will continue to be considered after a thorough analysis of available program options and available funding from the County.

6.4 Full-time Electronic Recycling Center

On July 1, 2010 the Authority opened a full-time electronic recycling site at 1316 Hilltop Road, in Bern Township. Since opening in July of 2010, 26,800 residents participated in our collections and brought 2.58 million pounds of electronic for recycling. Nearly half of the material collected in the past three and a half years was collected in 2013, with approximately half of the total number of residents visiting the site last year. Effective January 1, 2012 residential materials were accepted free of charge in compliance with the Covered Device Act, which prohibits charging residents for certain types of electronics. Businesses are charged a \$1 disposal fee per item, except for television sets which range between \$5 and \$10 each.

6.5 Pharmaceutical Collection

The Authority held its first pharmaceutical collection events in 2009. Since that time 4,350 residents have properly disposed of 11,800 pounds of medications, through County events. This event is held free of charge with the following sponsors assisting with the operation and funding of this program: Pa American Water, Western Berks Water Authority, Reading Area Water Authority, Berks County District Attorney, Exeter Police Department, City of Reading Police Department, York County Solid Waste Authority and MXI Environmental.

In 2013, the Berks County District Attorney's office began a full-time collection program for pharmaceuticals in nineteen police stations throughout Berks County. The Authority expects this program to continue to grow as residents become educated about the importance of proper medication disposal. Please visit their website for additional information on that program:

<http://www.co.berks.pa.us/dept/da/Pages/medicationdropbox.aspx>

6.6 Tire Waste

The Authority held its first tire collection event in November of 2007 and opened a fulltime tire collection center in April of 2012 at the site of our electronic recycling center on Hilltop Rd. The center operates on the same hours as the electronic center, thereby not incurring additional labor costs. Since the start of our program 3,700 residents have recycled nearly 462,000 pounds of tires. Residents are charged a per tire disposal fee, which covers most of the program costs.

6.7 Paper Shredding

The Authority held its first paper shredding event in October of 2009. From the fall of 2009 through the fall of 2013, 8,200 residents disposed of 335,000 pounds of confidential documents for shredding. The Authority expects this program to continue to grow as residents become educated about the importance of protecting yourself from identity theft and properly shredding your confidential documents. This event is currently being held free of charge with United Document Destruction and Storage providing their services free of charge.

CHAPTER 7 - IMPLEMENTING ENTITY IDENTIFICATION

7.1 Berks County

The County's implementation responsibilities under the Plan Revision involve execution of disposal capacity agreements, as identified in Section 3 of this Plan Revision, to secure 10 years of disposal capacity. Section 303(a) of Act 101 gives the County the power and duty to ensure adequate disposal capacity. Berks County's solid waste responsibilities, which have been delegated to the Authority, are described in this portion of the Plan Revision.

7.2 Berks County Solid Waste Authority

The Berks County Solid Waste Authority (Authority) has been in existence since 1992. The Authority's primary activities include oversight of the implementation of the Plan Revision, operation and overseeing of all recycling for the County and payment of debt service remaining on an Authority debt obligation.

The Authority also has implemented programs for the collection of household hazardous waste, electronics, tires, pharmaceuticals and paper shredding, from County residents.

The Authority has proposed to coordinate municipal recycling activities in the County and to achieve or surpass the State recycling goal of 35%. The Authority personnel will be available to offer technical assistance to municipalities that need assistance in evaluating their programs and in learning which PADEP grants can be utilized to fund new collection programs or to improve operating costs.

The Authority will also have a general oversight responsibility for existing solid waste facilities in the County. This will include landfills, recyclables processing facilities and compost facilities.

7.3 Berks County Planning Commission

The Planning Commission receives an official copy of all solid waste permit applications filed with the PADEP for solid waste facilities located in Berks County. The Planning Commission will notify the County Commissioners and the Authority of each and every application received from landfills and solid waste facilities located within the County limits. The Planning Commission should request a determination from the Authority as to whether the application is consistent or inconsistent with the Plan Revision.

CHAPTER 8 - PUBLIC FUNCTION

As this Plan Revision does not propose a municipal waste processing or disposal facility to be operated by the County, no discussion comparing the benefits of public and private facilities is required to be included in this document.

CHAPTER 9 - COPIES OF ORDINANCES AND RESOLUTIONS

The County implementation documents associated with this Plan Revision will consist of documents as described below.

The County has secured disposal capacity agreements with the facilities designated in Section 3 of this Plan Revision. Copies of executed agreements are included in Appendix A

Disposal service agreements provided in the 1990 Plan and 2005 and 2007 Plan Revisions and still in effect and/or as amended by subsequent agreements and/or settlements between the County and contractors are presented in Appendix A.

Chapter 10 - ORDERLY EXTENSION

As new development takes place, the Executive Director will ensure that recycling is extended into those new areas by the public or private trash and recycling haulers involved, taking into consideration planning, zoning, population estimates, engineering, and economics. This Plan Revision proposes to use only facilities that have already been approved with respect to State, regional, or local plans affecting the development, use, and protection of air, water, or land.

The Executive Director will monitor development of the State Plan, and will work with DEP to ensure that the County Plan Revision does not conflict with the State Plan in its final form.

Chapter 11 – METHODS OF DISPOSAL OTHER THAN BY CONTRACTS

All waste in Berks County will be stored, transported and disposed of as required by local Ordinance.

Chapter 12 – NON-INTERFERENCE

As no other Municipal Solid Waste Plans are in effect in the County, this section is not applicable.

CHAPTER 13 - PUBLIC PARTICIPATION

13.1 Advisory Committee

Berks County established its Solid Waste Advisory Committee (SWAC) as required by Section 503(a) of Act 101 in August 1988. The members of the SWAC participated in the development of the 1990 Municipal Solid Waste Management Plan and 2005, 2007 and 2013 Plan revisions; these members are identified in those plans. In July 2013, Berks County appointed new members to the Solid Waste Advisory Committee for the purpose of developing this Plan Revision. The following is a list of the members of the Solid Waste Advisory Committee (SWAC) who participated in this Plan Revision, and the entities that they represent:

SOLID WASTE ADVISORY COMMITTEE

Charles Mowbray	Berks County Solid Waste Authority, Chairman
Charles Jones, PE	City representative (City of Reading)
Michael Mountz	Borough representative (Shillington Borough)
Troy Bingaman	2 nd Class Township representative (Exeter Twp.)
Anthony Sacco	1 st Class Township representative (Cumru Twp.)
Dale Ann Farina	Industry representative (Metro Bank)
Josh Clements	Private solid waste industry representative (A.J. Blosenski)
Scott Carl	Private scrap/recycling representative (Zwicky Processing & Recycling)
Brian Clements	Citizen representative
Jane Meeks	Recycling coordinator / Executive Director

The Solid Waste Advisory Committee's involvement and ability to make suggestions is demonstrated in the minutes from the meetings. The members of this Committee represent diverse interests, including municipalities, private industry, waste haulers, disposal facilities, recycling centers, and public interest groups.

The Berks County SWAC met three times. The initial meeting was on September 17, 2013 and focused on Disposal Capacity Agreements and the scope of the Plan Revision. The second meeting was held on March 18, 2014 and focused on reviewing Act 101 and planning requirements, statewide recycling goals, existing waste generation estimates, existing disposal facilities, future waste generation projections and the existing waste disposal capacity agreements. The final meeting was held on June 17, 2014, and focused exclusively on reviewing the draft Plan Revision. The draft Plan Revision was approved and the SWAC authorized sending it to the Municipalities, as drafted, for their review and comment. Minutes of these meetings are provided in Appendix C.

Act 101 requires counties to provide written notice to municipalities when the Plan Revision Process has begun. Berks County provided this notice to its municipalities in December of 2013, the same time at which it informed PA DEP.

Municipalities had the opportunity to provide input to the Plan Revision during the public review and comment period that was part of the revision process.

13.2 Public Participation in Previous Plans

The 1990 Plan and 2005 revision were drafted with input from approximately 70 municipalities through a series of public meetings, as well as with input from a Solid Waste Advisory Committee (SWAC), which met on numerous separate occasions to provide input on development of the Plan as a whole. The SWAC was comprised of members from various parts of the County and from many different points of interest, and included County and municipal officials, owners of disposal facilities, members of industry, small business owners, private citizens, and members of other community groups.

Public participation in the previous plans included meetings with many local businesses, haulers, recyclers, environmental groups and municipalities.

CHAPTER 14 – OTHER INFORMATION

No other information is being provided under this Chapter.