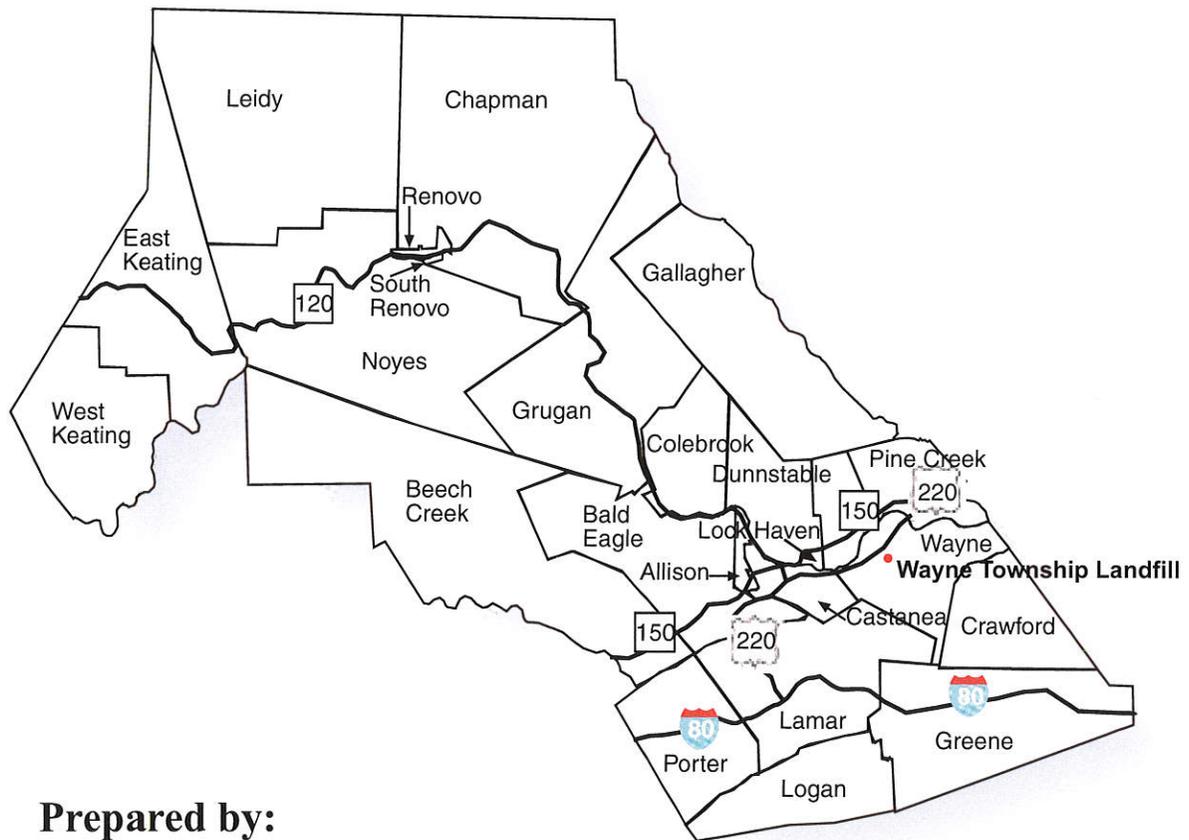




CLINTON COUNTY COMMISSIONERS CLINTON COUNTY SOLID WASTE AUTHORITY



Municipal Waste Management Plan



Prepared by:



Gannett Fleming

2000-2010

Clinton County Municipal Waste Management Plan

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Partial funding for this plan revision was provided by
the Pennsylvania Department of Environmental Protection

Table of Contents

1.1.	LOCATION OF PLANNING AREA	1-1
1.2	POPULATION	1-3
1.3	SOLID WASTE GENERATION	1-3
1.4	CONSTRUCTION AND DEMOLITION WASTE GENERATION	1-5
1.5	SEWAGE SLUDGE GENERATION	1-5
	1.5.1 Publicly-Owned Treatment Facilities	1-5
	1.5.2 Private and Institutional Treatment Facilities	1-5
	1.5.3 Sludge Quantity Projections	1-5
1.6	INFECTIOUS AND CHEMOTHERAPEUTIC WASTE	1-6
1.7	INVENTORY OF CURRENT SEPTAGE AND HOLDING TANK WASTE GENERATION IN CLINTON COUNTY	1-7
	1.7.1 Septage	1-7
	1.7.2 Holding Tank Waste	1-8
	1.7.3 Recycling of Septage and Holding Tank Wastes	1-8
1.8	HOUSEHOLD HAZARDOUS WASTE	1-9
1.9	RESIDUAL WASTE	1-10
1.10	WASTE TIRES	1-10
1.11.	LEAF AND YARD WASTE	1-10
2.1	MUNICIPAL SOLID WASTE COLLECTION	2-1
2.2	MUNICIPAL SOLID WASTE TRANSPORTATION, PROCESSING, & DISPOSAL	2-2
	2.2.1 Transportation and Transfer Facilities	2-2
	2.2.2 Description of Disposal and Processing Facilities	2-2
	2.2.3 Consideration of Existing Facilities	2-3
2.3	CONSTRUCTION & DEMOLITION (C&D) WASTE COLLECTION AND DISPOSAL	2-4
2.4	BIOSOLIDS DISPOSAL	2-4
2.5	INFECTIOUS AND CHEMOTHERAPEUTIC WASTE COLLECTION & DISPOSAL	2-5
2.6	HOUSEHOLD HAZARDOUS WASTE	2-5
2.7	RESIDUAL WASTE	2-5
3.1	REQUIRED DISPOSAL CAPACITY	3-1
3.2	RESIDUAL WASTE CONSIDERATION	3-2
4.1	RECYCLING	4-1
4.2	RECYCLABLE MATERIALS IN THE COUNTY WASTE SYSTEM	4-2
	Newsprint	4-2
	Corrugated Paper	4-3

	High-Grade Office Paper	4-3
	Mixed Paper	4-3
	Glass	4-3
	Steel/Tin Cans	4-4
	Aluminum Cans	4-4
	Plastics	4-4
	Other Recyclable Materials	4-4
4.3	POTENTIAL BENEFITS OF RECYCLING	4-6
4.4	EXISTING RECYCLING ACTIVITIES	4-6
4.5	RECYCLING COLLECTION METHODS	4-7
4.5.1	Curbside Collection Alternatives	4-7
	Commingled or Segregated Collection	4-7
	Recycling Collection Contracting Options	4-7
4.5.2	Recycling Collection at Multi-Family Housing	4-7
4.5.3	Clinton County Materials Recovery Facility (MRF)	4-9
4.5.4	Commercial and Institutional Recycling	4-9
4.6	YARD WASTE MANAGEMENT	4-10
4.6.1	Introduction	4-10
4.6.2	Yard Waste Collection	4-10
4.6.3	Composting Process Options	4-11
4.6.4	Compost Distribution and Marketing	4-11
4.6.5	Composting Program Operation Alternatives	4-11
4.6.6	Authority Initiatives in Yard Waste Management	4-12
4.6.7	Backyard Composting	4-12
4.7	PUBLIC EDUCATION TO ENCOURAGE PARTICIPATION IN RECYCLING PROGRAMS	4-12
4.8	RECOMMENDED RECYCLING STRATEGY & IMPLEMENTATION SCHEDULE	4-13
4.8.1	Goals and Objectives	4-13
4.8.2	Processing and Marketing of Recyclables	4-13
4.8.3	Curbside Recycling Program	4-13
4.8.4	County Drop-Off Program	4-14
4.8.5	Yard Waste Program Development	4-14
4.8.6	Public Education Program	4-14
4.8.7	Consideration of Existing Recyclers and Coordination with Recycling in Mandated Municipalities	4-15
4.8.8	Recycling Program Implementation Tasks	4-15
	Recycling Program 5-year Strategic Plan	4-15
	General	4-16
	Curbside Recycling Program	4-16
	Drop-Off Recycling Program	4-16
	Yard Waste Composting	4-16
	Public Education Program	4-16

5.1	PLAN BENEFITS	5-1
	Achievement of County Program Goals and Implementation Strategy	5-1
	Efficiency of Solid Waste Management System	5-1
	Market Participation	5-2
	Disposal Capacity Assurance	5-2
	Plan Benefits	5-2
5.2	WAYNE TOWNSHIP LANDFILL	5-3
	5.2.1 Wayne Township Landfill - Current Operations	5-3
	5.2.2 Wayne Township Landfill - Expansion Plan	5-4
5.3	CLINTON COUNTY RECYCLING PROGRAM	5-4
5.4.	OTHER WASTES	5-4
	Household Hazardous Waste	5-4
	Biosolids Management	5-5
	Septage Management	5-5
	Medical Waste	5-5
5.5.	SOLID WASTE RELATED SERVICES	5-6
	5.5.1 Existing Solid Waste Management Services	5-6
	Hauler Services	5-6
	Disposal Services	5-6
	Recycling	5-6
	Waste Management Information	5-6
	Public Education	5-6
	Municipal Services	5-7
	Waste Management Planning	5-7
	5.5.2 New Solid Waste Management Program Initiatives	5-7
	Waste Management Information Services	5-7
	Recycling Programs and Services (5-year Strategic Plan)	5-8
	Public Education Programs	5-8
	Waste Management Planning	5-8
6.1	INTRODUCTION	6-1
6.2	LOCATION OF RECYCLABLES COLLECTION & PROCESSING FACILITIES	6-1
6.3	WASTE DISPOSAL SITES	6-1
7.1.	CLINTON COUNTY SOLID WASTE AUTHORITY	7-1
7.2.	LEGAL BASIS	7-1
8.1.	PUBLIC PROVISION FOR WASTE DISPOSAL	8-1
8.2.	PUBLIC PURCHASE OF RECYCLING EQUIPMENT	8-1
8.3.	PUBLIC PROVISION OF FACILITIES	8-1

9.1	IMPLEMENTING DOCUMENTS	9-1
10.1	ORDERLY EXTENSION OF MUNICIPAL WASTE MANAGEMENT SYSTEMS	10-1
11.1	FACILITIES DEVELOPED PURSUANT TO SUBCOUNTY PLANS.....	11-1
12.1	PUBLIC PARTICIPATION	12-1

Figures

Figure 1-1, Clinton County, PA	1-2
Figure 4-1, Drop-off Recycling Sites	4-8

Tables

Table 1-1, 1998 Population Estimates and Municipal Waste Volumes	1-1
Table 1-2, Population	1-3
Table 1-3, Clinton County Projected Gross and Net Discards of MSW	1-4
Table 1-4, Clinton County Sludge Quantities and Characteristics of Publicly Owned Wastewater Treatment Plants	1-6
Table 1-5, Clinton County Septage and Holding Tank Waste Haulers	1-9
Table 2-1 Residential Waste Collection Practices in Clinton County Municipalities	2-1
Table 2-2 Clinton County Solid Waste Authority Licensed Haulers	2-2
Table 2-3 MSW Received at Disposal Facilities from Clinton County	2-3
Table 2-4 Capacity Estimates for Municipal Waste Processing & Disposal Facilities Receiving MSW from Clinton County	2-3
Table 2-5 Sludge Disposal Practices & Plans Publicly-Owned Treatment Plants Clinton County	2-4
Table 3-1 Volumes of MSW Requiring Disposal in Clinton County	3-1
Table 4-1, Potential Recyclable Quantities for Clinton County	4-2
Table 4-2, Clinton County Curbside and Drop-off Recycling Program	4-5
Table 4-3, Recyclable Materials Processed at the Clinton MRF	4-9

Appendices

Public Notification
Public Participation
Implementing Documents

1.1. LOCATION OF PLANNING AREA

Clinton County, located in north-central Pennsylvania, is bounded on the south by Centre County, on the east by Lycoming County, on the north by Potter County, and on the west by Cameron and Clearfield counties (Figure 1-1). Two major highways, Interstate 80 and U.S. Route 220, pass through the County

Clinton County is made up of 29 municipalities that includes one-third class city, seven boroughs, and 21 townships of the second class. The major concentrations of both population and economic activity are in the eastern part of the County, along U.S. Route 220 at the city of Lock Haven.

The major economic activities in the County are agriculture, manufacturing, government (state and local), institutional, medical, retail trade, and services. These activities employ a majority of the county's workers.

Forest land/open space is the single largest land use in the County, concentrated in the mountain ridges of the north and northwestern regions of the County.

Table 1-1, 1998 Population Estimates and Municipal Waste Volumes

Municipality	1998 Population ⁽¹⁾	1998 MSW Generation Volumes (tons)
Allison Township	201	151
Avis Borough	1486	1115
Bald Eagle Township	1923	1442
Beech Creek Borough	699	524
Beech Creek Township	1015	761
Castanea Township	1204	903
Chapman Township	955	716
Colebrook Township	186	140
Crawford Township	637	478
Dunnstable Township	913	685
East Keating Township	23	17
Flemington Borough	1247	935
Gallagher Township	220	165
Greene Township	1181	886
Grugan Township	50	38
Lamar Township	2343	1757
Leidy Township	216	162
Lock Haven City	9012	6759
Logan Township	753	565
Loganton Borough	431	323
Mill Hall Borough	1602	1202
Noyes Township	477	358
Pine Creek Township	3243	2432
Porter Township	1483	1112
Renovo Township	1399	1049
South Renovo Boro/Twp	533	400
Wayne Township	910	683
West Keating Township	35	26
Woodward Township	2623	1967
Total	37,000	27,751

All numbers rounded.

⁽¹⁾1998 US Census Bureau estimates

⁽²⁾Based on 0.75 tons/person/year (including C&D waste)

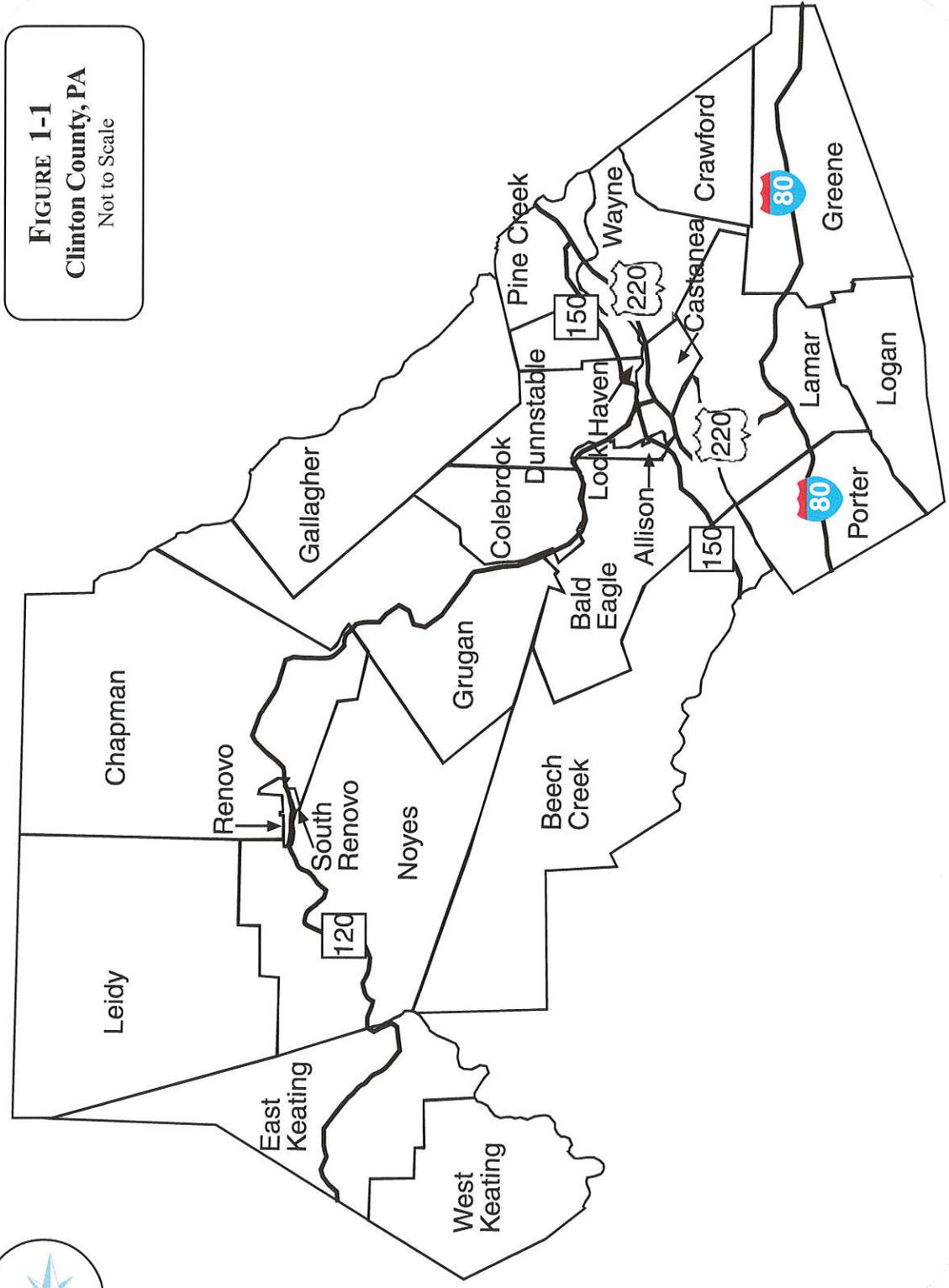


FIGURE 1-1
Clinton County, PA
Not to Scale

1.2 POPULATION

Table 1-1 presents estimated populations of each Clinton County municipality for 1998. The 1990 County population was 37,182 according to the U.S. Census Bureau, while the 1998 estimate is 37,000.

The 2000 and 2010 County population projections were developed by the Clinton County Planning Commission. These projections indicate the population will increase to 38,170 in 2000 (2.9 percent) and to 39,315 (3.0 percent) by 2010.

A projection for the year 2010 is required in order to forecast future solid waste quantities that will require disposal. For this purpose, a three-percent growth rate scenario is assumed for the entire 10-year period based upon projections compiled by the Clinton County Planning Commission. Therefore, the year 2010 population projection for Clinton County is 39,315.

Unfortunately, the timing of this plan precludes the use of 2000 Census Data. Based upon estimates obtained from the Pennsylvania State Data Center and the Clinton County Planning Commission staff, it is believed that the County has experienced a slight decline in population, and then a subsequent revival to the 1980 level. This conclusion is attributed to a decline in manufacturing activities within the County. The figures in Table 1-2 were obtained to represent the County.

Table 1-2, Population (1990-2010)

Source/Year	Population
U.S. Census - 1990	37,182
U.S. Census Bureau - 1998 estimate	37,000
Clinton County - 2000 projection	38,170
Clinton County - 2010 projection	39,315

1.3 SOLID WASTE GENERATION

Act No. 1988-101, the Pennsylvania Municipal Waste Planning, Recycling, and Waste Reduction Act defines municipal waste as:

Any garbage, refuse, industrial lunchroom or office waste and other material, including solid, liquid, semisolid or contained gaseous material, resulting from operation of residential, municipal, commercial or institutional establishments and from community activities and any sludge not meeting the definition of residual or hazardous waste in the Solid Waste Management Act from a municipal, commercial or institutional water supply treatment plant, waste water treatment plant or any pollution control facility. The term does *not* include source-separated recyclable materials.

To a major degree the municipal waste of Clinton County as defined above is received for disposal at the Wayne Township Landfill. The exceptions to disposal at this facility will be treated individually in subsequent report sections. Based on landfill disposal records, it is possible to determine Clinton County waste generation on a per capita basis for 1999. This time period corresponds to the most recently available PADEP Annual Operations Report for Municipal Waste Landfills. The total municipal waste tonnage charged to Clinton County, according to PADEP and Authority records for 1999, was 28,270.5 tons. It is assumed that tonnage for the year 2000 will be similar. Therefore, the 2000 annual waste generation rate for Clinton County is 77.5 tons/day (7 day/week basis). These figures include C&D waste, but do not include residual and special handling wastes (sludges, septage, infectious, ash, asbestos).

Table 1-3 depicts gross and net discards of MSW for 2000-2010. A per capita generation rate of 0.75 tons was used to project waste generation volumes based on numbers calculated above.

Table 1-3, Clinton County Projected Gross and Net Discards of MSW (2000 - 2010)

Year	Population ⁽²⁾	Gross MSW Generation (tons) ⁽³⁾	Diversion Rate ⁽⁴⁾	Net MSW Discards (tons) ⁽⁵⁾	Waste Diverted to Recycling (tons) ⁽⁶⁾
2000 ⁽¹⁾	38,170	28,628	22%	23,475	6,298
2001	38,285	28,714	25%	21,536	7,178
2002	38,399	28,799	30%	20,159	8,640
2003	38,514	28,885	35%	18,725	10,110
2004	38,628	28,971	35%	18,831	10,140
2005	38,743	29,057	35%	18,886	10,170
2006	38,857	29,143	35%	18,893	10,200
2007	38,972	29,229	35%	18,899	10,230
2008	39,086	29,314	35%	19,054	10,260
2009	39,201	29,401	35%	19,111	10,290
2010	39,315	29,486	35%	19,166	10,320

⁽¹⁾Year 2000: Gross Discards, Diversion Rate, Net Discards, Recycling Tonnages are estimated.

⁽²⁾2000 - 2010 Population Projections – Clinton County Planning Commission.

⁽³⁾Gross MSW Generation - Population x 0.75 tons per capita generation includes C&D wastes (1991 Clinton County Solid Waste Plan and Gannett Fleming, 2000).

⁽⁴⁾2000 - 2010 are projected diversion rates.

⁽⁵⁾Net MSW Discards = Gross MSW Generation (100% - Diversion Rate). All volumes are approximate.

⁽⁶⁾Gross MSW Generation - Net Discards = Waste Diverted to Recycling.

1.4 CONSTRUCTION AND DEMOLITION WASTE GENERATION

The total quantity of construction and demolition (C&D) waste changed to Clinton County in 1999 was 5,800 tons according to the Authority tonnage records. C&D waste generated in Clinton County was also disposed at the following facilities in 1999: Mifflin County Landfill, Lycoming County Landfill, and Pine Grove Landfill. It should be noted that a great deal of C&D waste is potentially recyclable material, such as wood, bricks, concrete, and asphalt. An undetermined volume of C&D waste materials may also have been diverted from the county's wastestream through recycling or reuse.

1.5 SEWAGE SLUDGE GENERATION

In order to obtain data on each source of sludge generation, a municipal wastewater treatment plant (WWTP) survey was sent to each public wastewater treatment plant in the County.

1.5.1 PUBLICLY-OWNED TREATMENT FACILITIES

At present, Clinton County has four publicly-owned wastewater treatment facilities owned or operated by municipal or regional authorities. Total capacity of all facilities is 6.11 million gallons per day (MGD). The facilities treat an average of approximately 3.322 MGD of wastewater, based on 1999 data. Currently, these facilities are at 54 percent total processing capacity. Table 1-4 presents the 1999 operating data for each facility as provided by a WWTP Survey that was completed by the facility operators.

The total quantity of sludge produced from public sewage treatment facilities in Clinton County is 43 wet tons per day based on a five-day per week basis (WTPD-5). The eastern region of the County generates the majority of the sludge within Clinton County.

According to 1999 PADEP County Waste Destination Records, 2,682.1 tons (10.3 dry tons per day) of sewage sludge generated in Clinton County was disposed of at two permitted disposal facilities: Wayne Township Landfill and Shade Landfill in Somerset County.

1.5.2 PRIVATE AND INSTITUTIONAL TREATMENT FACILITIES

The total quantity of sludge produced from these facilities could not be determined due to insufficient data. It has been assumed these facilities generate a minor amount of sludge in the County.

1.5.3 SLUDGE QUANTITY PROJECTIONS

Table 1-4 summarizes the sludge disposal in the County. The total sludge produced in Clinton County in 2000 is estimated at 3,000 tons per year. At an estimated

Table 1-4, Clinton County Sludge Quantities and Characteristics of Publicly Owned Wastewater Treatment Plants

Source	1999 Plant Capacity (MGD)	Average Wastewater Flow (MGD)	Sludge ⁽¹⁾				Sludge Disposal Method	
			(DTPW-5) Solids/%	Phase	Cake (WTPD-5)	Liquid (GPW)		Percent Solids
City of Lock Haven	3.75	2.15	40.83/18	Dewatered	40.83	N/A	18	Landfill
Pine Creek Municipal Authority	1.3	0.74	N/A	Digestion	1.0	N/A	40-45	Landfill
Beech Creek Borough	0.16	0.07	N/A	Digestion	0.96	—	—	Landfill
Western Clinton Municipal Authority	0.900	0.362	N/A	Digestion	N/A	8,000	1.4	Landfill Land Application
TOTAL CLINTON COUNTY	6.11	3.322	40.83		42.79	8,000		

N/A = Not Available

mgd = million gallons per day

⁽¹⁾DTPD-5, dry tons per day, 5 days per week; WTPD-5, wet tons per day, 5 days per week; GPW—gallons per week, percent solids, in wet sludge; percent volatile solids, in dry sludge solids.

Source: 1998 WWTP Survey, Clinton County, PA

2000 population of 38,170, the sludge generation rate is 0.08 tons per capita per year. This per capita generation rate may be expected to increase as a larger proportion of the population is served by public sewers. However, the prediction of this change is beyond the scope of this plan. Assuming there are no process or other changes that will substantially affect this generation rate, sludge quantities for 2001, 2005, and 2010 are projected to be 3,063, 3,100, and 3,145 tons per year, respectively.

1.6 INFECTIOUS AND CHEMOTHERAPEUTIC WASTE

Infectious and chemotherapeutic waste (ICW) constitutes a very small portion of the municipal waste generated in Clinton County. Most ICW is generated by hospitals, medical and dental offices, veterinarians, and funeral homes. The most common types of materials are blood and body fluids, bandages, and dressings. Contaminated surgical equipment and cultures of etiological agents are also typical medical wastes generated. Medical facilities located within the County generate the overwhelming majority of ICW in Clinton County.

The Pennsylvania Infectious and Chemotherapeutic Waste Plan (1989-as revised) reports an estimated annual generation of ICW in Clinton County of approximately 60 tons per year.

1.7 INVENTORY OF CURRENT SEPTAGE AND HOLDING TANK WASTE GENERATION IN CLINTON COUNTY

1.7.1 SEPTAGE

Septage is defined as the solids that settle out in the bottom of a septic tank utilized as an on lot sewage disposal system for a residential or commercial establishment. While bacterial action does consume some of the solids, over time, they accumulate in sufficient amounts that require their removal from the tank. Failure to remove them can result in the destruction of the drain field, and necessitate an expensive repair or replacement of the drain field component of the system. The frequency of required pumping is dependent upon the size of the tank, number of residents, and the presence of a garbage disposal unit.

The U.S. Census data for Clinton County inventories housing units by type of sewage disposal. There are 9,668 housing units with access to central sewage facilities, and 5,563 housing units with on-lot sewage facilities in Clinton County. Based upon the Pennsylvania State University - Cooperative Extension Service Engineering Fact Sheet - Septic Tank Pumping (SW-40), an estimate of annual septage generation for Clinton County can be determined using the following criteria:

- assumed septic tank size is 900 gallons
- average family size (1990 Census) is 2.7
- determined pumping interval from SW-40 is 3.1 years

Based on this criteria:

$$\frac{(5,563 \text{ households}) * (900 \text{ gallons per household})}{3.1 \text{ years}} = 1.62 \text{ million gallons}$$

of septage generated annually in Clinton County.

Based upon Lock Haven City WWTP records, approximately 300,000 gallons of septage are received for treatment at their sewage treatment plant. No other sewage treatment plants in the County receive septage for treatment. Other options for septage disposal include sewage plants located outside of Clinton County and land application.

Septic tank wastes (septage), for the most part in recent years, has been disposed of on agricultural and rural land surfaces, and is basically accepted as a legitimate disposal practice. However, it has been discovered that this practice, without using proper application procedures, may pose a detrimental impact to the environment in the form of surface and groundwater pollution. It can be assumed that the volume of septage generated in the County will increase as more rural development occurs.

When a sewage treatment plant receives septage, the waste is added to the influent flow directly from the septic tank trucks, or slowly introduced into the system. Septage is most commonly applied to agricultural lands using surface or subsurface application techniques. Surface application is the most common technique used in land disposal of septage. Subsurface application of septage involves injecting the untreated septage a few inches below the soil surface. This process reduces odors, and is an adequate soil conditioner and fertilizer. It should be noted that septage should not be applied within 60 days to land used for production of human food crops, spread on crops used for grazing, or harvested for livestock feed.

Septage generated in Clinton County must be disposed of at a permitted disposal site as required by state regulations. Disposal sites receiving septage from Clinton County include permitted agricultural fields and municipal wastewater treatment facilities. To lessen the problem of locating septage disposal sites, municipal wastewater treatment plant operators are encouraged to accept septage from its municipal service areas.

1.7.2 HOLDING TANK WASTE

Another type of liquid sewage waste collected is holding tank waste. It is typically collected from restaurants, gas stations, parks, bakeries, and meat packers without access to a municipal sewage treatment plant or permittable on-lot system. It differs from septage in having a much lower biological oxygen demand (BOD) concentration, and is therefore more readily treatable. The Lock Haven WWTP accepts holding tank wastes. No other Clinton County sewer authorities receive holding tank wastes. According to Lock Haven STP records, 24 commercial/industrial establishments dispose of their holding tanks wastes at the plant. Volume of holding tank waste received in 1999 was approximately 7.8 million gallons.

Septage and holding tank pumpers or “honey dippers” that provide service to Clinton County are located in the County and in adjacent Lycoming and Centre counties. A list of these firms is provided in Table 1-5.

1.7.3 RECYCLING OF SEPTAGE AND HOLDING TANK WASTES

Clinton County septage and holding tank wastes are, in effect, currently being 100 percent recycled. It is recycled through land application, either directly or as sewage sludge, following processing at the Lock Haven STP.

Table 1-5, Clinton County Septage and Holding Tank Waste Haulers

Name	Location	Phone
PETERS	Box 42, Loganton, PA 17747	(570) 725-2751
John Braim	1429 Cemetery St., Jersey Shore, PA 17740	(570) 398-2071
R.L. Macialek	P.O. Box 178, Bellefonte, PA 16823	(814) 355-2185
Ron Braim & Son	1477 Allegheny St., Jersey Shore, PA 17740	(570) 398-0169
Lycomming Toilets	RR #1, Box 201, Montgomery, PA 17752	(570) 547-6322
William J. Ingram	P.O. Box 185, Lamar, PA 16848	(570) 726-6162
Columbia Gas & Transmission	P.O. Box 447, North Bend, PA 17760	(570) 923-1950
Tim Muthler	RR #1, Box 226 A, Beech Creek, PA 16822	(570) 726-4584
J.L. Rishel Co.	1131 W Front St., S. Williamsport, PA 17701	(570) 322-8294
Conrad Septic Service	3rd St., Avis, PA 17721	(570) 753-3332
Robert Laudig, Jr.	523 Broad St., Montoursville, PA 17754	(570) 368-8505
McGuire's Septic	P.O. Box 82 Rt. 187, Rome, PA 18837	(570) 247-7633
Dan Jackson	7 S. Hanna St., Lock Haven, PA 17745	(570) 748-3530
Cromley's Septic	RR #3 Box 555, Lewisburg, PA 17837	(570) 524-0249
Penn Cheese Corp.	P.O. Box 137, Winfield, PA 17889	(570) 524-7700
Cogan Valley Farms	480 Rt. 973 West, Cogan Station, PA 17728	(570) 998-2110
R.S. Stahlnecker	P.O. Box 296, Milton, PA 17847	(570) 742-7636
Repards Septic	P.O. Box 36, Liberty, PA 16930	(570) 324-2401
Kreamer Construction	522 Nort, Middleburg, PA 17842	(570) 837-1463
A-1 Portable Toilets	802B W.Southern Ave., S. Williamsport, PA 17702	(570) 326-5152
Dremels Sunoco	P.O. Box 492, North Bend, PA 17760	(570) 923-2437
MERLE PETERS	P.O. Box 575, Howard, PA 1684	(814) 625-2525
Easy House	P.O. Box 8379, Lancaster, PA 17604	(800) 386-8444
Billtown Portable Toilets, Inc.	109 Central Ave., Williamsport, PA 17701	(570) 322-9967

1.8 HOUSEHOLD HAZARDOUS WASTE

Household hazardous waste (HHW) constitutes a small fraction of the municipal waste stream (less than 0.5 percent according to the PADEP), but because of its chemical or biological nature, is potentially hazardous to humans and the environment. EPA classifies waste as hazardous if it is toxic, corrosive, ignitable, or reactive. There are numerous federal and state statues which regulate hazardous wastes, but the disposal of hazardous waste from households is exempt form these regulations.

Although the disposal of HHW is not subject to special regulations, there are a number of reasons why safe handling and disposal are important. Traditionally, these

wastes have been disposed as ordinary trash in municipal waste landfills, poured down drains, or stored in garages or basements. When HHW is disposed as municipal waste, there is a potential health hazard to waste handlers or haulers. Large amounts of hazardous waste disposed down drains may cause septic tank failure; may upset sewage treatment plant effluent requirements; or may pass through the system and contaminate a downstream drinking water source. With the development of new technologies and higher standards of living, the volumes of HHW has increased, and many municipalities and local governments are now evaluating options for safer handling and disposal of HHW. Act 101 requires operators of resource recovery facilities to develop programs to remove hazardous materials from municipal wastes. The Act also requires recycling of lead acid batteries.

PADEP offers HHW collection program grant funding for counties or municipalities to offset the costs of conducting HHW collection programs. Additional information on this program is included in Chapter 4 - Recycling Programs and Strategy.

1.9 RESIDUAL WASTE

The quantity of residual waste generated in Clinton County in 1999 was determined by reviewing the PADEP County Waste Destinations Report from area landfills. The total residual waste disposed at in 1999 was 8,958 tons. Additionally, substantial quantities of residual wastes may be disposed in captive facilities owned by industry or in other disposal sites not in close proximity to Clinton County, or located at out-of-state facilities.

1.10 WASTE TIRES

Based on the monthly records of the Authority, the 1999 tonnage of waste tires recycled at the Wayne Township Landfill was 66.8 tons. To the extent feasible, landfill personnel utilize process tires for leachate and gas collection. Surplus tires may be accumulated for shredding and removal from the landfill property at a later date should such processing be feasible.

1.11. LEAF AND YARD WASTE

Five Clinton County municipalities are involved in municipal leaf collection. Flemington and Loganton Boroughs and Woodward Township pick up bagged leaves, and arrange for farmland disposal. Castanea Township also picks up bagged leaves; however, they deliver them to a greenhouse operator who uses them to insulate worm beds and ultimately composts them for soil enrichment. The city of Lock Haven has a municipal yard and leaf collection service including curbside bulk and bagged leaf pickup. The yard waste is delivered to Wayne Township for integration to the mulching operation. While no municipal compost programs are in operation, sev-

eral municipal officials expressed interest in new commercially available leaf loader/shredder equipment that facilitates the compost process by finely shredding the leaves during pickup.

Statistics on collected leaf quantities are not available. Generation rates vary greatly depending upon age, number, and species of trees, climate, weather, method of collection, amount of participation, and degree of urbanization in the community. A rough estimate may be developed from a report prepared by E&A Environmental Consultants for the National Corn Growers Association, which cites an Illinois community where 200 pounds of leaf waste and 750 pounds of grass clippings per year per household are collected. Table 1-4 tabulates theoretical leaf waste and grass clipping quantities for the communities that are currently involved in municipal collection programs. Larger quantities could be generated in Clinton County in the event that more municipalities became involved in the collection of these materials.

An examination of the existing waste management system in Clinton County serves as a baseline from which to create alternative scenarios for future waste management. The first section of this chapter describes the current collection practices for conventional municipal solid waste. The second section describes the processing and disposal facilities that receive MSW generated in the County. Finally, Sections 2.3 - 2.7 describe the collection, processing, and disposal practices for special handling wastes. Current recycling and yard waste composting activities are described in Chapter 4 - Description of Recyclable Materials.

2.1 MUNICIPAL SOLID WASTE COLLECTION

Table 2-1 presents information on waste collection practices in the county's municipalities. The table reveals that waste collection and hauling in Clinton County is handled exclusively by private hauling firms in all municipalities. Four of 29 municipalities in the County have solid waste management ordinances governing storage and collection of municipal waste.

Table 2-2 lists licensed refuse haulers operating in Clinton County. A licensed refuse hauler typi-

Table 2-1 Residential Waste Collection Practices in Clinton County Municipalities

Municipality	Residential Collection Service	Municipal Waste Ordinance	Estimated % with Collection
Avis Borough	P	N	90
Bald Eagle Township	P	N	NP
Beech Creek Borough	P	NP	96
Beech Creek Township	P	NP	NP
Castanea Township	—	—	—
Chapman Township	—	—	—
Colebrook Township	P	N	NP
Crawford Township	—	—	—
Dunnstable Township	P	N	NP
East Keating Township	P	N	NP
Flemington Borough	P	Y	NP
Gallagher Township	—	—	—
Greene Township	P	N	NP
Grugan Township	—	—	—
Lamar Township	P	N	NP
Leidy Township	M	Y	100
Lock Haven City	P	Y	100
Logan Township	NP	N	NP
Loganton Borough	—	—	—
Mill Hall Borough	P	NP	NP
Noyes Township	—	—	—
Pine Creek Township	P	N	95
Porter Township	P	N	NP
Renovo Township	P	Y	98
South Renovo Borough	P	NP	99
Wayne Township	P	N	75
West Keating Township	—	—	—
Woodward Township	—	—	—

P=Private Contract; M=Municipal Contract; Y=Yes; N=No; NP=Not Provided or Known. Source: Clinton County Solid Waste Management Authority-Municipal Questionnaire, 2000

Table 2-2 Clinton County Solid Waste Authority Licensed Haulers (2000)

Licensed Hauler	Address	Telephone
Big Mountain Disposal	RR 4 Box 308 Jersey Shore, PA 17740	570-753-5192
Bousum's Sanitation	P.O. Box 290 Petersburg, PA 16669	814-669-4639
John Glenn Sanitation Service Inc	P.O. Box 683 Philipsburg, PA 16866	814-342-4166
Grenoble's Disposal	RR 1 Box 266A Jersey Shore, PA 17740	570-753-5060
Fred Hamm, Inc.	P.O. Box 5096 Jersey Shore, PA 17740	570-398-1814
Loves Disposal, Inc.	RR 1 Box 316 Lock Haven, PA 17745	570-748-0983
Kevin Peacock Disposal Service	RR 3 Box 504 Williamsport, PA 17701	570-745-7730
J.J. Peters Disposal, Inc.	212 James Street Flemington, PA 17745	570-748-7957
L W Peters Disposal Service	134 East Bald Eagle Street Lock Haven, PA 17745	570-748-4830
Renovo Disposal Services, Inc.	900 Ontario Avenue Renovo, PA 17764	570-923-1112
T&M Disposal	P.O. Box 254 North Bend, PA 17760	570-923-0364

cally provides residential, commercial, institutional, construction and demolition, and residual waste collection and disposal services. The haulers may also provide recycling collection and processing services.

Title 25 of the Pa. Code mandated curbside recycling in communities with a population over 5,000 and a density of 300 persons per square mile. Only one (1) municipality, the city of Lock Haven with a 1990 population of 9,230, is mandated to provide curbside recycling to its residents.

2.2 MUNICIPAL SOLID WASTE TRANSPORTATION, PROCESSING, & DISPOSAL

2.2.1 TRANSPORTATION AND TRANSFER FACILITIES

Clinton County MSW is hauled directly to the disposal facility by privately-owned hauling companies who are licensed by the County. There are no transfer stations operating in the County.

2.2.2 DESCRIPTION OF DISPOSAL AND PROCESSING FACILITIES

According to municipal waste operating reports filed with the PADEP, municipal waste from Clinton County was disposed of at the Wayne Township Landfill in Clinton County that is owned and operated by the Clinton County Solid Waste Authority. A negligible quantity of waste was also reported as being disposed at the Lycoming County Landfill (10 tons). Table 2-3 presents municipal waste volumes generated in Clinton County received at each of these facilities.

Table 2-4 lists current permit information and waste volumes accepted at the disposal facilities that received Clinton County waste in 1997.

Table 2-3 MSW Received at Disposal Facilities from Clinton County (1998)

Disposal Facility	Municipal Waste ⁽¹⁾ (tons)	C&D Waste ⁽¹⁾ (tons)	Total MSW	
			Tons	TPD-7 ⁽²⁾
<i>Contracted Facilities</i>				
Wayne Township Landfill	22,421.5	5232.6	27,654.1	75.8
<i>Other Facilities Receiving Waste</i>				
Lycoming County Landfill	7.0	194	201	0.55
Total	22,421.5	5426.6	27,848.1	76.4

⁽¹⁾ PADEP - County Waste Destination Tonnage Records - 1999

⁽²⁾ TPD-7: tons per day based on 7 days per week, 365 days per year.

Table 2-4 Capacity Estimates for Municipal Waste Processing & Disposal Facilities Receiving MSW from Clinton County

Facility ⁽²⁾	Current Site ⁽¹⁾					Planned Expansions ⁽¹⁾
	Materials ⁽³⁾	Expected Quantities		Remaining Capacity (years)	Permitted Average Per Day (tons)	Additional Acreage
		Tons Per Year	Tons Per Day ⁽⁴⁾			
Wayne Township Landfill	MSW, Residential C&D, Sludge, Asbestos	156,000	500	12	725	60

⁽¹⁾ "Current site" means the disposal area included in the permit modification application, including expansions. "Planned Expansion" means additional expansions.

⁽²⁾ Wayne Township receives approximately 100-percent of Clinton County MSW.

⁽³⁾ MSW: Municipal Solid Waste other than special handling wastes and C&D: Construction and Demolition Waste

⁽⁴⁾ All tons per day estimates are calculated for a 6-day week

2.2.3 CONSIDERATION OF EXISTING FACILITIES

Chapter 271 mandates that the County plan must consider facilities which meet the definition of "existing facility".

In Chapter 5 of this Plan, the selection and justification of the municipal waste management program is outlined. Since Clinton County has an in-County facility with at least 10-years of capacity, the Wayne Township Landfill is the only facility listed in this plan to receive waste generated in the County.

The Clinton County Solid Waste Authority owns and operates the Wayne Township Landfill in McElhattan, PA under Waste Disposal Permit No. 100955. The landfill was originally permitted in 1973, and was re-permitted in 1990 due to Municipal Waste Management Regulations promulgated on April 9, 1988. The new

regulations resulted in the construction of new 33.2-acre doubled lined facility adjacent to the existing unlined facility. The 33.2-acre facility has both leachate collection and landfill gas collection and control systems.

Additional information on Wayne Township Landfill is in Chapter 5.

2.3 CONSTRUCTION & DEMOLITION (C&D) WASTE COLLECTION AND DISPOSAL

The predominant collection method of C&D waste is hauling by company vehicles or by a waste hauling contractor. According to PADEP Waste Destination Reports in 1999, 5,426.6 tons of C&D waste generated in Clinton County were disposed at Pennsylvania landfills with almost all disposed at the Wayne Township Landfill. The remainder is apparently recycled, or possibly used as fill. Some C&D debris may be disposed by other means.

2.4 BIOSOLIDS DISPOSAL

Table 2-5 summarizes the sludge disposal practices of the publicly-owned treatment facilities in the County. The table reveals that, with a few exceptions, one facility relies on land application for the disposal of at least a portion of its sludge. No facilities rely exclusively on land application for sludge disposal. Also, two facilities rely exclusively on landfilling for disposal of sludge.

The questionnaire asked how long the facility planned to use its current disposal method. The responses showed that most facilities in the County expressed plans to use land application and/or landfilling for 5 years or longer.

**Table 2-5 Sludge Disposal Practices & Plans
Publicly-Owned Treatment Plants Clinton County**

Source	Method of Sludge Disposal	Location of Sludge Disposal	Sludge Disposal Problems ⁽¹⁾	Planning to Use Current Disposal Method (years)	Plans for Alternative Disposal Method(s)
City of Lock Haven	Landfill/LA	Wayne Township Landfill LA site-never used	none	5+	Will review in 2000
Pine Creek Municipal Authority	Landfill	Wayne Township Landfill McElhattan, PA	none	15+	none
Beech Creek Borough Authority	Landfill	Shade Landfill Cairnbrook, PA	none	15+	none
Western Clinton County Municipal Authority	Landfill WWTP (Liquid)	Wayne Township Landfill McElhattan, PA	none	10+	Adding belt filter press— dewater all all sludge

LA - Land Application; CP - Composting; LF - Landfill; IN - Incineration; TP - Treatment Plant; ARB - Aquatic Reed Beds

⁽¹⁾ Responses concerning sludge disposal problems include: a. cost; b. site to apply sludge

Source: 2000 WWTP Survey, Clinton County, PA

2.5 INFECTIOUS & CHEMOTHERAPEUTIC WASTE COLLECTION & DISPOSAL

Most infectious waste in the County is generated at medical, dental, and veterinarian offices, as well as funeral homes. Most infectious waste generators have collection contractors handle their waste disposal. Some generators perform their own sterilization before disposal. It is recommended that the County not take a role in medical waste management other than possibly licensing the haulers. In the future, should conditions change, it may become advisable for the County to consider expanding its role in infectious waste management.

2.6 HOUSEHOLD HAZARDOUS WASTE

Recent PADEP studies indicate that less than one (1) percent of the municipal solid waste generated is household hazardous waste. Clinton County does not have any separate County or municipal sponsored collections of household hazardous waste. However, the Authority provides an information service to citizens on the proper preparation and disposal of household hazardous waste.

Information can and is provided to citizens on proper preparation and disposal of household hazardous waste includes the following items: paint use, solidification and donation; solvent preparation; pesticide disposal and unmarked container preparation and disposal. Additionally, citizens are advised of the proper disposal of automotive batteries.

2.7 RESIDUAL WASTE

In 1999, residual waste from Clinton County was disposed of seven waste disposal facilities. According to 1999 PADEP County Waste Destination Report, 8,958.5 tons of residual waste generated in Clinton County was disposed at the following facilities (tonnages in parenthesis):

- Wayne Township Landfill (5,739.5)
- Superior-Greentree Landfill (2,204.6)
- County Landfill (205.6)
- Lancaster County Landfill (5)
- Lancaster County Resource Recovery Facility (66.8)
- Bradford County Sanitary Landfill (30.2)
- York County Resources Recovery Center (706.8)

PADEP requires that solid waste disposal facilities obtain the necessary permit approvals for each generator. Disposal agreements are individually arranged between facility and generator.

3.1 REQUIRED DISPOSAL CAPACITY

According to PADEP County Waste Destinations tonnage records, Clinton County disposed of 27,848.1 tons of MSW (including C&D waste) in 1999. Current County-wide recycling programs diverted an estimated 5,583 tons of recyclable materials in 1999, according to County and municipal recycling records. Based on 1999 numbers, the county's recycling rate was 20 percent. In the future, these volumes will change as County waste generation grows, and new recycling activities come on-line. The purpose of this section is to consider possible changes, and estimate additional municipal waste disposal capacity for Clinton County from 2001 through 2010.

The estimated municipal waste requiring disposal after recycling certain waste materials required by Clinton County for 2001 through 2010 (10-year planning period) is estimated at 193,260 tons.

The method and assumptions used to determine these capacity requirements are described in detail in Chapter 1 - Description of Waste. The analysis in Chapter 1 assumed a waste reduction rate of 25 percent in 2001, 30 percent in 2002, and 35 percent from 2003 through 2010. Table 3-1 lists volume of wastes requiring disposal in Clinton County from 2001 through 2010 (before and after recycling).

These reduction rates should be considered as waste reduction goals by the County. Act 101 set a recycling goal of 25 percent by 1998. This recycling goal has since been increased to 35 percent attainable by 2003. The primary variables affecting waste generation estimates and projections include, but are not limited to, population, economic development and employment growth, per capita income, waste minimization, source separation and recycling efforts, recycling materials markets, and consumer purchasing trends.

Table 3-1 indicates the estimated required disposal capacity will decrease from 2001 to 2003. This is because the percentage of recyclable materials diverted from the waste stream will remain at a constant 35-percent, while population (thus waste generation) will continue

Table 3-1 Volumes of MSW Requiring Disposal in Clinton County

Year	MSW Requiring Disposal (before recycling)	MSW Requiring Disposal (net discards after recycling)
2001	28,714	21,536
2002	28,799	20,159
2003	28,885	18,725
2004	28,971	18,831
2005	29,057	18,886
2006	29,143	18,893
2007	29,229	18,899
2008	29,314	19,054
2009	29,401	19,111
2010	29,486	19,166
Total Tons	290,999	193,260

Note: Volumes do not include C&D waste.

Source: Clinton County Solid Waste Authority and Gannett Fleming, Inc., 2000

to increase. But, the disposal capacity will increase slightly from 2004 to 2010. This is due to the percentage of waste diverted from the waste stream to recycling will remain at 35-percent, but population (thus waste generation) will continue to increase. However, waste requiring disposal from 2004 through 2010 will decrease if the percentage of waste stream recycled increases above the state established goal of 35 percent.

It is not necessary for Clinton County to give public notice of a determination that additional disposal capacity to serve the County is required. The 33.2-acre facility has approximately 4,196,355 cy of capacity under the current permit. Per the 1999 Annual Survey, approximately 1,539,574 cy have been consumed by disposal operations leaving approximately 2,656,781 cy of remaining capacity. The facility accepted approximately 1,087,619 tons of waste since opening in November of 1991. This equates to 1,413 lb/cy. In the most recent quarter ending December 1999, the landfill accepted approximately 500 tpd. Based on six days per week of operations and 52 weeks per year this equates to 156,000 tons per year or 221,811 cy/yr. Therefore, the facility has approximately 12 years of capacity remaining.

The Authority is evaluating the feasibility of redevelopment of the closed unlined landfill. This 60 acre site was filled using both trench and area fill disposal methods. Development of this site would provide for an additional 9,000,000 cy of capacity. Based on accepting 156,000 tons per year or 221,811 of capacity, the new area will provide approximately 40 additional years of disposal capacity.

3.2 RESIDUAL WASTE CONSIDERATION

Residual waste generated in the County was disposed of at seven disposal facilities in 1998, as presented in Section 2.7. The County does not regulate nor is it required to manage residual waste disposal. According to PADEP County Waste Destination Report, 8,958.5 tons of Clinton County generated residual waste was disposed in 1999.

4.1 RECYCLING

In Act 101 (incorporated as 25 Pa. Code Chapter 272), Pennsylvania adopted an unprecedented level of support for the use of recycling as a waste management tool. Besides setting a goal of 35 percent reduction in the municipal waste stream through recycling by 2003, the regulation includes a variety of recycling provisions.

Act 101 requires counties to prepare municipal waste management plans, and requires that these plans contain a recycling plan for the County. The County plan must provide for “the maximum feasible development and implementation of recycling programs.”

The regulation supports recycling by setting up grant programs for municipal recycling program development and implementation (Section 902 of the Act), for partial reimbursement of County recycling coordinator costs (Section 903), and for performance-based reimbursement for municipal recycling programs (Section 904). Also, Act 101 requires landfills and resource recovery facilities to establish at least one recycling drop-off center; requires resource recovery facilities to develop a program for the removal, to the greatest extent possible, of recyclable materials; and prohibits landfills and resource recovery facilities from accepting for disposal, truckloads composed primarily of leaf waste. Finally, Act 101 requires certain municipalities to implement a mandatory source separation and curbside collection program for recyclables. Municipalities with a population exceeding 5,000 and population density of at least 300 persons per square mile are required to implement a curbside recycling program.

Act 101 states that mandated municipalities must do the following:

- Require persons to separate at least three of the following materials from their household waste for collection in a recycling program: clear glass, colored glass, aluminum, steel cans, high-grade office paper, newsprint, corrugated paper, or plastics.
- Require persons to separate leaf waste from their household waste for on-site composting or for separate collection and handling.
- Require persons to separate high-grade office paper, aluminum, corrugated paper, and leaf waste and other materials the municipality deems appropriate from waste generated by commercial, municipal and institutional establishments and from community activities.
- Provide a system to collect the separated material, at least once per month, from the curbside or similar location.
- Enact an ordinance or regulations to achieve the above, and make provisions to ensure compliance with the ordinance.
- Provide for the recycling of the collected materials.

- Establish a comprehensive and sustained public information and education program concerning recycling program features and requirements.

Act 101 accords certain powers to counties and municipalities regarding recycling. Municipalities and counties may adopt ordinances, resolutions, regulations, and standards for the recycling of municipal waste or source-separated recyclable material. At the County level, the ordinances or resolutions included must be set forth in the approved plan, and may not interfere with the implementation of the recycling program of a mandated municipality.

4.2 RECYCLABLE MATERIALS IN THE COUNTY WASTE SYSTEM

This section will briefly describe the materials that are most commonly targeted in municipal recycling programs. Table 4-1 presents the estimated percent of recyclable materials in Clinton County's municipal solid waste stream. Projections of potential quantities of recyclable materials theoretically available in Clinton County are based upon 1986 Environmental Protection Agency estimates, of the recyclable fraction of the waste stream. Volumes were calculated by multiplying the total annual waste volume of 28,628 tons (2000) for Clinton County by the recyclable fraction and are shown in Table 4-1.

Table 4-1, Potential Recyclable Quantities for Clinton County (2000)

Recyclable Material		Recyclable Fraction (%) ⁽¹⁾	Quantity (Tons) ⁽²⁾
Paper	Newspaper	8.0	2,290
	Corrugated Paper	12.3	3,521
	Office Paper	3.9	1,116
	Mixed Paper	16.8	4,809
	Total	41.0	11,736
Glass	Clear	4.9	1,403
	Color	3.3	944
	Total	8.2	2,347
Ferrous		7.0	2,004
Aluminum		1.5	429
Plastic		6.5	1,861
Yard Waste ⁽¹⁾		200#/household	1,445
TOTAL			19,822

⁽¹⁾1990 Clinton County Solid Waste Plan

⁽²⁾Volumes based on 2000 solid waste generation estimates.

NEWSPRINT

Newsprint or newspaper comprises 8 percent of the municipal waste stream, and is primarily generated in the residential sector. Post-consumer waste newspaper is called "old newspaper" or "ONP."

ONP can be recycled back into newsprint. It can also be made into cellulose insulation, animal bedding, mulch, low-grade computer printout, and paperboard. Paperboard is a trade term that includes all cardboard types, such as corrugated card-

board and tablet backings, as well as the paper lining on gypsum wallboard. ONP can also be shredded and used as a bulking agent in composting wet organic wastes, such as sludge or manure. All curbside programs and drop-off collection sites accept ONP.

CORRUGATED PAPER

Corrugated paper, referred to in the recycling industry as “old corrugated containers or OCC” also comprises a substantial portion of the municipal waste stream — 12.3 percent. The majority of it is generated in the commercial sector. The commercial waste generators and public and private haulers to reduce disposal costs and potentially earn a modest sales revenue conduct recovery of OCC.

Recovered OCC is mixed with virgin pulp to make new corrugated. It can also be used in the manufacture of other types of paperboard.

Two programs within the County collect OCC at their drop-off collection sites, while one curbside collection program collects OCC (Table 4-2).

HIGH-GRADE OFFICE PAPER

High-grade paper includes computer printout, office papers, and ledger. High-grade paper is estimated to comprise approximately 3.9 percent of Clinton County’s waste stream. Most of it is found in the commercial sector, particularly in office buildings, where it can comprise the majority of the office’s waste stream. Computer printout and white ledger can be made back into high-grade paper. However, to make bright white paper requires that the recycled fiber be supplemented with a large percentage of virgin pulp. A common use is in the manufacture of tissue products such as paper towels and toilet paper. High-grade paper is also used to make paperboard. Office paper is collected at the Wayne Township MRF located at the Wayne Township Landfill (Table 4-2).

MIXED PAPER

Mixed paper refers to a mix of any of the above three types of waste paper plus other waste papers such as junk mail, and magazines.

Roofing material and boxboard manufacture are traditional uses of mixed paper, and for the production of low-grade tissue and toweling products.

Mixed paper is collected at municipal curbside programs and accepted at the Wayne Township MRF and the City of Lock Haven.

GLASS

Although glass is found in a variety of forms and colors (e.g. clear, green and amber) in the municipal solid waste stream, container glass (i.e., bottles and jars), and is the most commonly recyclable type of glass. Container glass comprises approxi-

mately 8.2 percent of the county's waste stream, and the majority is generated in the residential sector. Waste container glass can be melted and mixed with virgin glass ingredients to make new container glass.

All curbside and drop-off recycling programs operating in the County accept glass (Table 4-2).

STEEL/TIN CANS

Steel and tin cans comprise approximately 2 percent of the County's wastestream.

All curbside and drop-off recycling programs operating in the County accept steel and tin cans (Table 4-2).

ALUMINUM CANS

Aluminum comprises about 1.5 percent of the municipal waste stream. Aluminum cans or used beverage cans (UBC) are among the most readily recoverable aluminum products.

Aluminum cans are very readily reprocessed into new aluminum sheet. Other products containing aluminum, such as cookware, use a different type of aluminum; the different varieties are not readily substitutable. The cost savings from using scrap aluminum rather than virgin inputs has provided for a strong scrap aluminum market.

UBCs are collected in all municipal curbside and drop-off recycling programs and sites in the County (Table 4-2).

PLASTICS

Plastic is a generic term that defines a wide variety of materials that are made up of one or a combination of plastic resins. The two most common, recyclable types of plastic are PET (polyethylene terephthalate - #1) and HDPE (high density polyethylene - #2). PET is most commonly used to produce soft drink bottles. HDPE is most commonly used to produce milk and water containers, colored and opaque detergent bottles, and motor oil containers. Plastics in the county's municipal waste stream is estimated at 6.5 percent.

Many of the drop-off sites within the County collect #1 and #2 plastics (Table 4-2).

OTHER RECYCLABLE MATERIALS

Large appliances or "white goods" can be shredded and the steel separated for recycling. White goods are accepted at the Wayne Township Landfill.

Provided markets can be found, various other types of materials in the municipal waste stream can be recycled. Tires, used motor oil, and automotive batteries are examples of recyclable items that pose disposal problems. Used tires can be retreaded, shredded and processed into crumb rubber for use in rubber plastic products, or they

Table 4-2, Clinton County Curbside and Drop-off Recycling Program

Municipality	Collection Schedule ⁽¹⁾	Material Collected ⁽²⁾	Location
Curbside Recycling Programs			
Avis Borough	Thursday	1,2,3,5 & 9	Borough
Beech Creek Borough	Monday	1,2,3,5 & 9	Borough
Castanea Township	Monday	1,2,3,5 & 9	Township
Chapman Township	Friday	1,2,3,5,6 & 9	Township
Dunnstable Township	Wednesday	1,2,3,5 & 9	Township
Flemington Borough	Thursday	1,2,3,5 & 9	Borough
Lock Haven	Tuesday/Wednesday/Friday	1,2,3,5 & 9	City
Mill Hall Borough	Monday	1,2,3,5 & 9	Borough
Pine Creek Township	Tuesday	1,2,3,5 & 9	Township
Renovo Borough	Friday	1,2,3,5,6 & 9	Borough
South Renovo Borough	Friday	1,2,3,5,6 & 9	Borough
Wayne Township	Monday	1,2,3,5 & 9	Township
Woodward Township	Wednesday	1,2,3,5 & 9	Township
Drop-off Recycling Sites			
Wayne Township	M-F, 8:00 AM-4:30 PM Sat. 8:00 AM-Noon	1,2,3,4,5,6,7,8,9 & 10	Wayne Township Landfill
Bald Eagle Township	24 hours	1,2,3 & 4	Township Building
Beech Creek Borough	24 hours	1,2,3 & 4	Borough Building
Castanea Township	24 hours	1,2,3 & 4	Township Building
Chapman Township	24 hours	1,2,3 & 4	Township Building
Lock Haven	24 hours	1,2,3,4,5,6,8 & 9	City
Crawford Township	24 hours	1,2,3 & 4	Township Building
Farrandsville	24 hours	1,2, & 3	Farrandsville People's Church
Green Township	24 hours	1,2,3 & 4	Township Building
Kettle Creek	24 hours	1,2 & 3	Kettle Creek State Park
Larmar Township	24 hours	1,2,3 & 4	Township Building
Leidy Township ⁽³⁾	24 hours	1,2 & 3	Township Building
Loganton Borough	24 hours	1,2,3 & 4	Township Building
Logan Township	24 hours	1,2,3 & 4	Township Building
Mill Hall Borough	24 hours	1,2,3 & 4	Borough Building
Pine Creek Township ⁽³⁾	24 hours	1,2,3 & 4	Harrisland & Chatham Run
Swissdale	24 hours	1,2,3 & 4	Swissdale UM Church
Woodward Township	24 hours	1,2,3 & 4	Route 664

⁽¹⁾Twice per month for curbside programs

⁽²⁾1-Glass, 2-Aluminum, 3-Newspaper, 4-#1 & #2 Plastics, 5-Magazines, 6-Corrugated Cardboard, 7-Motor Oil, 8-Office Paper, 9-Junk Mail, 10-Vehicle Batteries

can be used to produce a durable ingredient in the production of asphalt. Alternatively, tires can be shredded and burned as a source of fuel. The metal in automotive batteries and the polypropylene plastic case are recyclable. Used motor oil can be refined to produce heating fuel, industrial lubricants and even new motor oil. Used textiles can also be recycled. Textiles can be reused as rags, or reprocessed into filler products such as insulation or furniture padding. Non-treated wood can be recycled into playground mulch and used as a fuel source.

4.3 POTENTIAL BENEFITS OF RECYCLING

Chapter 272.226(a)(2) requires that the plan describe and evaluate the potential benefits of recycling. The benefits of recycling stem from two sources: the value of the recycled material in its financial reuse and the reduction in waste requiring collection, transportation, processing, and disposal. The reuse value of the material is reflected in its market price. With an average recyclables net market value (after transportation and processing) close to zero, the chief benefit of recycling is the avoided cost of disposal.

As indicated on Table 1-3, with a projected generation of 28,628 tons of gross discards in 2000, a 22 percent recycling rate would divert 6,298 tons of municipal solid waste from disposal. This tonnage is expected to increase to 10,320 tons by the end of the 10-year planning period (2010). Waste diverted in 2000 for recycling would result in a savings of \$251,920 based on a disposal fee of \$40 per ton at the Wayne Township Landfill.

4.4 EXISTING RECYCLING ACTIVITIES

The Authority is under contract with the City of Lock Haven, to provide curbside recycling services. The city of Lock Haven is the only mandated municipality in Clinton County that is required to provide curbside collection for all City residents. The Authority also offers curbside collection to 12 additional municipalities within Clinton County. Curbside collection occurs bi-weekly and includes the following materials: aluminum and steel containers, clear/brown/green (C/B/G) glass containers, newspaper, magazines, and mixed paper. The collection program for the Renovo areas also includes corrugated cardboard.

The Authority has also established 20 recycling drop-off sites throughout the County (Figure 4-1). The materials generally collected at these sites includes: aluminum containers; steel containers; clear, brown and green glass containers; newspaper; and #1 & #2 plastic containers. Several of the satellite sites also collect magazines, corrugated cardboard, and mixed paper. The Authority's recycling center also accepts: corrugated cardboard; office paper; motor oil, and car batteries. Table 4-2 summarizes the mandatory and voluntary curbside and drop-off recycling programs.

The Authority also provides information about County recycling programs and facilities and recycling markets for the County and region. The Authority office is located at the Wayne Township Landfill near McElhattan.

4.5 RECYCLING COLLECTION METHODS

This section presents the collection system options for residential curbside collection programs, for drop-off programs, and for commercial and institutional recycling programs.

4.5.1 CURBSIDE COLLECTION ALTERNATIVES

Some of the program choices facing a municipality planning a residential curbside collection program are whether the materials should be collected mixed in the container or segregated, what storage containers residents should use, how frequently and on what days to offer collection, what special provisions to make for multifamily dwellings, and how the collection service will be provided. These considerations are examined below.

Commingled or Segregated Collection

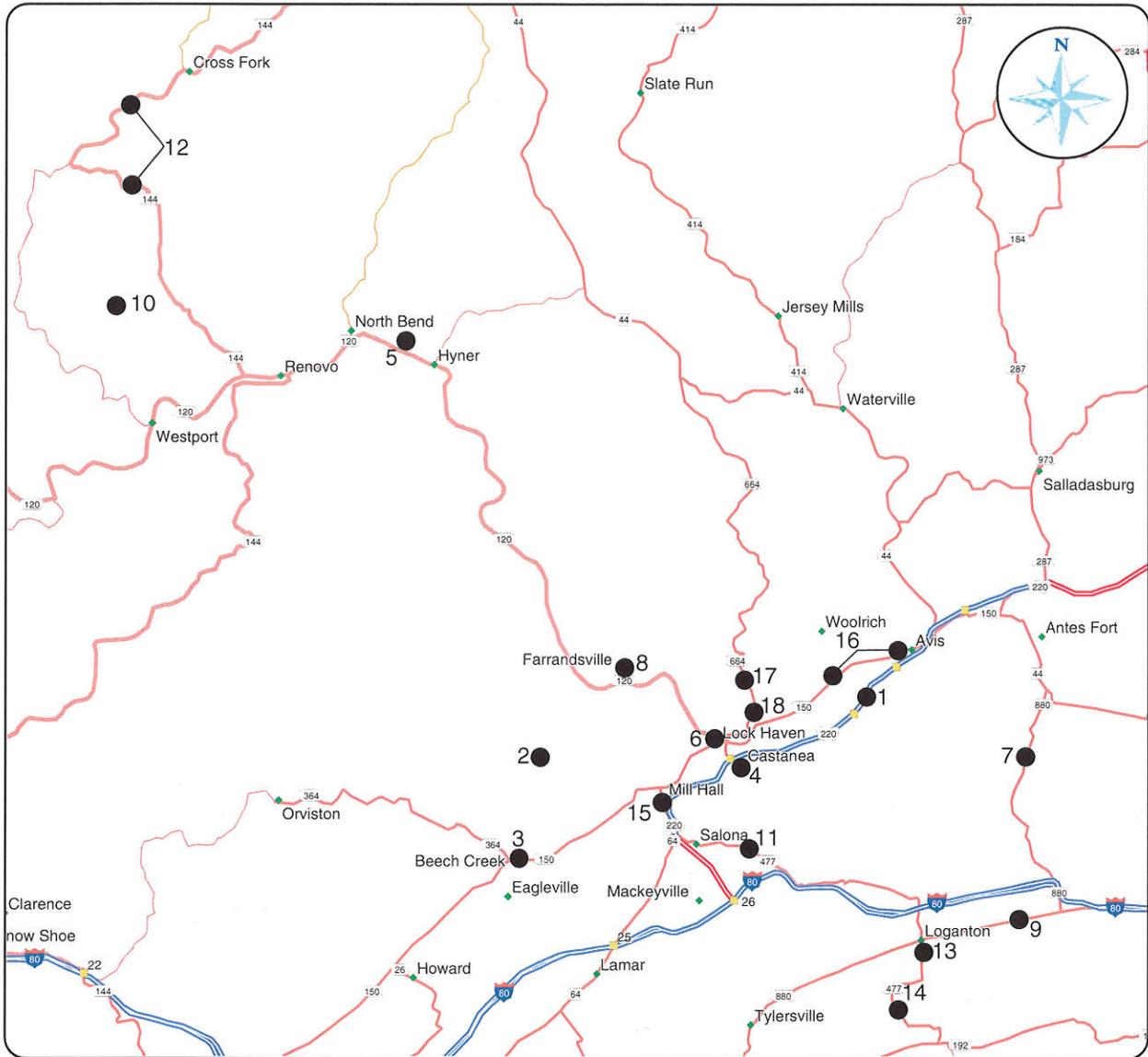
There are a variety of ways that material can be set out by residents and collected by the recycling service provider. Residents can place all materials in a single bin or bag. Collection workers can then either place the contents in a single bin on the collection vehicle or sort the materials at the curb into separate bins. The most common variant of commingled collection is to place glass and metal food and beverage containers in one truck bin and place newspapers (and perhaps also corrugated cardboard) in another bin. Segregated set-out would require residents to sort materials into multiple containers.

Recycling Collection Contracting Options

A municipality may use its own vehicles and staff to collect recyclables, or it may contract with the Authority or private collector for the service. PADEP grants are available to reimburse up to 90 percent of the cost of collection equipment. Currently, the Authority provides all recycling services to County residents.

4.5.2 RECYCLING COLLECTION AT MULTI-FAMILY HOUSING

Multi-family residential housing units (4 or more units) are not required under Act 101 to recycle as part of a municipal mandatory curbside recycling program. Multi-family housing units typically provide recycling as part of an independent commercial waste collection and recycling program, or if required by municipal ordi-



1. Clinton County Solid Waste Authority Recycling Center
2. Bald Eagle Township Building
3. Beech Creek Township Building
4. Castanea Township Building
5. Chapman Township Building
6. City of Lock Haven
7. Crawford Township Building
8. Farrandville People's Church
9. Green Township Building
10. Kettle Creek State Park
11. Lamar Township Building
12. Leidy Township Building
13. Loganton Borough Building
14. Logan Township Building
15. Mill Hall Borough Building
16. Pine Creek Township
17. Swissdale United Methodist Church
18. Woodward Township

FIGURE 4-1
Clinton County
Drop-off Recycling Sites

nances. Act 101 provides that a mandated municipality must make recycling available for owners of multi-family housing in its recycling ordinance. The ordinance must define landlord compliance as establishing a collection system that includes “suitable containers for collecting and sorting materials, easily accessible locations for the containers and written instructions to occupants...” Municipal officials and the general public can obtain multifamily guidelines and recycling program development information from the County. The Authority will assist municipalities and owners of multifamily units develop recycling programs.

4.5.3 CLINTON COUNTY MATERIALS RECOVERY FACILITY (MRF)

Employees of the Clinton County Solid Waste Authority provide all residential collection and processing services for the County. The Authority also accepts recyclables collected from commercial operations by private waste haulers.

The MRF is equipped with a horizontal, closed-door baler with a conveyor feed system. This equipment is used to bale: aluminum and steel cans, #1 plastics, mixed paper, newspaper, and corrugated cardboard. The MRF also is equipped with an aluminum/steel separation system. Volumes of materials processed at the facility in 1998 and 1999 are listed in Table 4-3.

4.5.4 COMMERCIAL AND INSTITUTIONAL RECYCLING

Act 101 instructs mandated municipalities to require persons at commercial, institutional, and municipal establishments and at community activities (e.g., fairs, sporting events) to source separate certain materials for recycling. At a minimum, mandated municipalities must require programs to include high-grade office paper, corrugated cardboard, aluminum cans, and leaf waste, if applicable.

Table 4-3, Recyclable Materials Processed

Material	1998 Market (tons)	1999 Market (tons)
Aluminum Containers	22.6	21.2
Steel Containers	77.6	91.8
Corrugated Cardboard	56.3	125.7
Glass (clear, green, brown)	251.1	215.7
#1 Plastics	27.8	37.3
Newspaper	364.5	397.5
Mixed Paper	125.1	95.5
Total	925	984.7

Mandated municipalities are required to provide a system that collects recyclable materials from the curbside or similar location. In municipalities, the mandate applies to all residences, institutions, and commercial or municipal establishments and, these municipalities must adopt a recycling ordinance that may not be less stringent than the Act 101 mandate.

Municipalities must also allow establishments to meet their recycling requirements by providing for their own collection and marketing, as long as they provide written documentation of the tons recycled. This documentation is required to be submitted to the County each year.

The PADEP has issued guidelines for recycling at commercial, municipal, and institutional establishments. These guidelines and other recycling information are available at the Clinton County Solid Waste Authority office, www.waynetwplandfill.com or the PADEP website at www.dep.state.pa.us.

4.6 YARD WASTE MANAGEMENT

4.6.1 INTRODUCTION

Chapter 272 defines “leaf waste” as “leaves, garden residues, shrubbery and tree trimmings, and similar material, but not including grass clippings.” Although not defined in Act 101 or the PA Municipal Solid Waste Regulations of 1988, an accurate description of “yard waste” would be leaf waste plus grass clippings. Yard waste comprises as much as 18 percent, possibly more, of Clinton County’s municipal waste stream, making it an attractive target for diversion through a composting program.

Composting is a natural biological process in which organic matter decomposes into a useful humus material that is valuable as a soil amendment. While the nutrient content of yard waste compost is too low for it to be considered a fertilizer, it is a valuable soil conditioner and organic amendment, improving the physical, chemical, and biological properties of the soil.

In general, development of a composting site/facility requires a PADEP municipal waste permit. Leaf waste composting, however, is exempted, provided the process is approved by PADEP. PADEP has developed guidelines for an acceptable leaf waste composting process. This information is available from the Authority and PADEP.

Grass clippings can make up one-third to one-half of all yard waste. However, presently grass clippings may not be composted with yard waste without a PADEP permit.

4.6.2 YARD WASTE COLLECTION

There are generally two basic methods used to collect leaves — loose collection or containerized collection. For more general yard waste including grass clippings, loose collection is not appropriate.

Loose collection of leaf waste is accomplished using a vacuum loader or front-end loader. Containerized collection is the method used when yard waste is placed in a bag or plastic container by a resident and placed at the curbside for collection.

Yard waste can be collected by municipal crews or by a municipally-contracted private hauler. Some municipalities provide drop-off locations for other yard waste (e.g. brush, tree trimmings).

4.6.3 COMPOSTING PROCESS OPTIONS

The composting process requires heat, water, and oxygen to proceed properly. The various approaches to composting can be ordered into the following four general categories:

No Technology (“sheet composting”) - The material is spread over a field and allowed to decompose naturally without further intervention. The PADEP has given verbal consent to a number of previously existing yard waste collection programs that deposit their leaves on farm fields or at nurseries that use this method.

Low-Level Technology (Windrow Method) - This is the most common method of leaf composting, and the method specified in the PADEP Guidelines. This method usually produces compost in approximately 18 months.

Medium Technology (Aerated Static Pile) - The yard waste material is piled over perforated piping. The material is aerated by blowing air out of the pipe and into the pile or by drawing air through the pile and into the pipe. This method produces compost in less than 12 months.

High Technology (In-Vessel Method) - Material is composted in a fully enclosed, mechanical system. All of the environmental factors that affect the decomposition process can be controlled, allowing the first stage of composting to be completed in a very short period of time. In-vessel composting is generally applied to composting of more general municipal solid waste and sewage sludge rather than yard waste alone.

4.6.4 COMPOST DISTRIBUTION AND MARKETING

The finished compost can be made available to residents, nurseries, landscapers, and farmers. Municipal crews can use it for reseeding and landscaping projects. Given the high transportation costs relative to the compost’s value, the compost users generally will be located close to the compost source.

4.6.5 COMPOSTING PROGRAM OPERATION ALTERNATIVES

The simplest option is to deliver the material to a farm or nursery for its own composting and end use. A farmer, for instance, can compost the material on a pile before use, or allow the material to compost on a fallow field, or disk or till the raw yard waste onto cropland in the autumn.

Unlike recycling, it is more common for municipalities to conduct their own yard waste composting and compost distribution than to contract out for the service.

Composting programs can be operated by municipalities acting individually or cooperatively or by the County. The use of special composting equipment such as a turning machine, tub grinder, and screening equipment is more cost effective if the equipment is shared by a number of municipalities. In contrast, because of the prominent role of hauling costs, it is generally more cost effective to use several compost sites, close to the major yard waste sources, rather than to use a single centralized site

for the entire County. Two or more neighboring municipalities may find it advantageous to share a site and equipment, particularly since locating a suitable site may be difficult for some municipalities.

4.6.6 AUTHORITY INITIATIVES IN YARD WASTE MANAGEMENT

Currently there is only one yard waste composting operation in Clinton County, operated by Lock Haven. The County does not operate a County-wide composting program.

The Authority accepts brush and yard waste, pallets, and other miscellaneous wood material. The Authority owns a Morbark Model 1300 Tub Grinder, which is used to process the wood material into high-quality landscape mulch. This machine is available for rent to grind wood waste throughout the north central region of Pennsylvania.

Drop-off sites are being pursued in various municipalities to allow residents to drop-off brush and yard waste. Once established, the Authority would periodically grind this material into mulch, which could be offered back to the residents.

4.6.7 BACKYARD COMPOSTING

Composting by individuals in their own yards is an activity that can be encouraged regardless of whether the municipality has its own composting program. By reducing the amount of yard waste collected, backyard composting saves collection and composting costs and provides the homeowner with his or her own supply of valuable compost. Backyard composting is most suitable for grass clippings and vegetative (not meat) food wastes. Leaves take up a great deal of space and are much slower to breakdown. Rather than composting, grass clippings can be left on the lawn. However, this requires that the lawn be cut frequently. The County has available information to promote backyard composting and to insure that it is done in a manner that minimizes visual and odor nuisances. Additional information on backyard composting is available through the Clinton County Solid Waste Authority.

4.7 PUBLIC EDUCATION TO ENCOURAGE PARTICIPATION IN RECYCLING PROGRAMS

Both the Authority and municipalities can share the responsibility for public education. The Authority provides recycling educational materials to municipalities, special interest groups, commercial and institutional establishments and local school districts throughout the County. The Authority will also assist municipalities to tailor their educational materials to their specific programs. Community-specific promotional materials have the advantage of harnessing community pride to generate in-

terest and boost participation. Even for program-specific public education efforts, the County has and will provide assistance, such as model brochures, names of printers, 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 Clinton County Solid Waste Authority can provide recycling program cost analysis and guidance to any municipality or group that seeks assistance in developing a program.

4.8 RECOMMENDED RECYCLING STRATEGY & IMPLEMENTATION SCHEDULE

4.8.1 GOALS AND OBJECTIVES

The guiding objectives used in developing the county's recycling plan are to attain the maximum economically feasible recovery of material through recycling and yard waste processing and composting and to do so in the most economically efficient manner and with the full support of the local municipalities.

The following is a list of Authority recycling program goals:

- Provide and maintain convenient curbside collection.
- Provide and maintain a convenient drop-off collection service available to all County residents.
- Expand yard waste composting efforts.
- Comprehensive public information and education program that will be coordinated with local municipal efforts.
- Integration of plastics to curbside program.

The implementation of the recommended recycling strategy involves the tasks described in the following sections.

4.8.2 PROCESSING AND MARKETING OF RECYCLABLES

The Authority provides collection and transportation for all recyclable materials collected at all curbside recycling programs and drop-off collection sites in the County. This material is processed for sale to market at the Clinton County MRF owned and operated by the Authority and located at the Wayne Township Landfill near McElhattan, PA.

4.8.3 CURBSIDE RECYCLING PROGRAM

The Authority currently offers curbside collection services throughout Clinton County. The Authority has established curbside collection programs in Avis, Beech Creek, Castanea, Chapman, Dunnstable, Flemington, Lock Haven, Mill Hall, Pine

Creek, Renovo, South Renovo, Wayne and Woodward. The cost for the twice per month pick-up is \$30 in 2000. Materials collected at the curb include: clear, green and brown glass containers, aluminum cans, newspaper, magazines, corrugated cardboard and junk mail (Table 4-2). Additional information is available at the Clinton County Solid Waste Authority or visit the website at www.waynetwplandfill.com.

4.8.4 COUNTY DROP-OFF PROGRAM

The Authority will continue to implement its drop-off program for recyclables. The Authority continues to encourage the development of municipal and other drop-off programs for recyclables throughout the County, particularly in areas where recycling programs do not exist.

Many other municipalities in the County may wish to consider drop-off collection programs as the main thrust of their recycling programs. With Authority assistance and coordination, municipalities can develop one or multiple sites, or use multiple locations for a roving drop-off program. Multi-municipal drop-off programs can also be developed. Strategically located drop-off sites will reduce inconvenience to residents that may have to drive long distances to a drop-off site.

The Clinton County Solid Waste Authority will provide guidance and management assistance to municipalities or entities interested in developing recycling drop-off sites or programs.

Drop-off collection sites require a minimal amount of equipment and site preparation to develop. Equipment and site development costs are low as compared to a curbside program. Site preparation costs are typically low and include costs such as paving, fencing, lighting, and the purchase of collection bins or drop-off containers. Equipment costs are up to 90 percent reimbursable through Action 101-Section 902 recycling grants.

4.8.5 YARD WASTE PROGRAM DEVELOPMENT

To maximize the amount of yard waste diverted from disposal and to do so in the most efficient manner possible, the Authority plans to assist municipalities to develop yard waste programs.

4.8.6 PUBLIC EDUCATION PROGRAM

The Authority will continue to play a substantial role in educating the public about recycling and yard waste management, as well as other aspects of solid waste management. The Authority public education program is designed to complement the activities of Authority MRF and local activities in order to maximize the effectiveness and efficiency of all public education efforts. The Authority's program targets not only households, but schools and commercial, industrial and institutional establishments.

The following public education program initiatives are the cornerstone of the Authority's ongoing efforts.

- Support professional presentations for schools/interested organizations
- Provide through coordination and possibly monetary support professional presentations that are available through local, state and national organizations, agencies and businesses in the waste management and recycling industries.
- Benefits of proper agricultural use of sewage sludge (biosolids) and septage.
- The Authority, with input from residents, interested groups and organizations and municipal officials, will evaluate the need for developing or expanding public education program for the general public, local businesses and haulers on the proper processing, transportation and disposal on agricultural lands of biosolids that would include environmental (biological, soil) effects of improper use of these wastes.

4.8.7 CONSIDERATION OF EXISTING RECYCLERS AND COORDINATION WITH RECYCLING IN MANDATED MUNICIPALITIES

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, and will be integrated with municipal recycling programs and with non-profit and for-profit recycling drop-off operations.

4.8.8 RECYCLING PROGRAM IMPLEMENTATION TASKS

The tasks that are involved in implementing this recycling strategy are identified below.

Recycling Program 5-year Strategic Plan

- Evaluate expansion of MRF to include processing system for plastics.
- Development of a commercial/industrial collection program.
- Expand plastic collection program, curbside and drop-off.
- Expand recycling programs at County schools and universities.
- Develop County-wide composting/mulching program, residential and municipal.
- Develop "event" recycling collection programs.
- Evaluate expansion of existing curbside and drop-off programs into other parts of the County.

General

- Expansion of the Wayne Township MRF.
- Ongoing recycling market investigation.

Curbside Recycling Program

- Integration of plastics to program.
- Evaluate and offer curbside programs to non-mandated municipalities.
- Curbside program promotion.
- Evaluation of equipment needs.

Drop-Off Recycling Program

- Evaluate drop-off program options/opportunities.
- Acquisition of sites or agreements for use of sites.
- Site development.
- Evaluation of equipment needs.
- Drop-off program promotion.

Yard Waste Composting

- Site selection in cooperation with host municipalities.
- Designation of site for each participating municipality's yard waste.
- Agreements between host municipalities and the County.
- Process design and equipment specification.
- Site preparation and operation by municipalities.

Public Education Program

- Continuation of Authority's educational program efforts.
- Investigation of municipal needs.
- Continue to design program.
- Design, production, and distribution of educational materials.
- Continue to provide landfill and MRF tours.

5.1 PLAN BENEFITS

Section 4 examined the options for collecting and processing recyclable materials and yard wastes. Based on the recommended county recycling strategy, the quantity of waste diverted to recycling and composting was estimated and deducted from the gross waste generation estimates developed in Section 1. Table 1-3 depicts gross and net waste quantities (after recycling) for the county. The table reveals that in 2000, approximately 23,475 tons (65 tons per day) of municipal solid waste (including construction and demolition waste) will require disposal.

The current municipal waste system implemented by Clinton County involves a combination of public and private participation. Collection services for municipal solid waste and recycling are managed by both the Authority and private sector. The Authority manages the processing and disposal of municipal solid waste and recyclable materials from residences and businesses using the Wayne Township Landfill and Materials Recovery Facility (MRF). Processing and recycling/disposal of municipal waste is shared between the Authority and the private sector. The private sector collects and transports municipal solid waste. Yard waste, biosolids and septage are managed by a combination of private and municipal entities. Medical waste is managed privately. The Authority plans to maintain this system for the ten-year planning period.

The Authority has determined that the current system satisfies the requirements of Act 101 due to the following:

Achievement of County Program Goals and Implementation Strategy

The current solid waste system, including the Wayne Township Landfill, is the preferred system of the residents of Clinton County communities, and local officials. Since 1973, when the landfill was just developed, the landfill has been the preferred disposal location because of its location near the waste centroid of the county. The economic advantages are the same today as they were during the 1970's. As regulations changed regarding solid waste management, the Wayne Township Landfill has upgraded its facilities to meet the stringent permitting and operating requirements demanded of all municipal waste facilities in Pennsylvania.

Efficiency of Solid Waste Management System

Municipal waste and recyclable materials are currently collected, transported, processed and disposed at facilities with little or no difficulty. The location of the Authority's solid waste and recycling facilities are convenient to haulers. Other public and private processing facilities for municipal waste and recyclables are readily accessible to haulers. Private and public facilities are available throughout the County for the management of yard waste, biosolids and septage.

Market Participation

As a market participant for disposal, the Clinton County Plan does not prohibit or restrict waste from being disposed or processed out-of-state. The Plan does not place any undue burden on the disposal or processing of waste out-of-state. The Plan allows for fair and open competition for the waste through ordinary market forces.

Haulers will enter into agreements with the Authority to deliver municipal and residual wastes to the Wayne Township Landfill. The Authority offers tipping fees which are competitive with rates at other facilities in the region. In addition, the location is convenient and minimizes transportation costs to the haulers. There are many options within the County for managing recyclables, yard waste, biosolids and septage, and other special wastes.

Disposal Capacity Assurance

The system has more than sufficient disposal capacity to manage all waste and recyclables generated in Clinton County. There is no need to seek additional facilities or consider other management options with the solid waste management system infrastructure already in place within the county.

The County will use the Authority's Wayne Township Landfill as its disposal facility. With a daily capacity of 750 tons per day, this facility has sufficient capacity needed for disposal of all municipal waste generated in the county.

The disposal system appears to be efficient and cost effective as demonstrated by the haulers' participation in delivering waste to the Wayne Township Landfill and more than sufficient to meet the disposal needs of the County. The Authority is not exploring further options for this ten-year planning period.

The Authority may elect to impose an administration fee on all licensed county haulers no matter if the county's generated municipal waste is delivered to a county processing/disposal facility or an out-of-county processing/disposal facility. The administration fee may include costs associated with planning and plan implementation activities, the Authority sponsored recycling programs, debt service, or equipment maintenance. Copies of hauler agreements may be provided to PADEP annually as set forth in Section 513 of Act 101.

There are currently no transfer and haul facilities that operate within Clinton County, nor are there any planned facilities due to the availability of the Authority's Wayne Township Landfill.

Plan Benefits

The following is a list of benefits as a result of the plan revision to residents and businesses of Clinton County:

- Protect public health, safety, and welfare from the short and long term dangers of transportation, processing, treatment, storage, and disposal of municipal waste.

- Encourage the development of waste reduction and recycling as a means of managing municipal waste.
- Maintain cooperation between state and local government for planning, technical, and financial assistance.
- Provide for the cost effective means of municipal waste disposal.
- Provided the Authority and County with an opportunity to redefine their responsibilities with regard to solid waste planning and program implementation.
- Plan revision included a public participation process that allowed public and private entities an opportunity to provide input to the Plan for the Authority's solid waste management and recycling programs.
- New recycling program initiatives have been outlined in the Plan that will assist the County to attain Pennsylvania's recycling goal of 35% by 2003.
- The Authority and County had an opportunity to evaluate the success of current solid waste management and recycling programs and services.
- Provided a forum to determine future solid waste management and recycling programs and services for the 10-year planning period.

5.2 WAYNE TOWNSHIP LANDFILL

The following section briefly describes the processing and disposal technology already available to Clinton County. The 1990 Clinton County Municipal Waste Management Plan contained an a detailed evaluation of numerous technologies and potential solid waste management initiatives for the Wayne Township Landfill and Materials Recovery Facility (MRF).

The Wayne Township Landfill, operated by the Clinton County Solid Waste Authority, will be used as the primary disposal facility for Clinton County generated municipal solid waste.

5.2.1 WAYNE TOWNSHIP LANDFILL - CURRENT OPERATIONS

The Wayne Township Landfill is located in Wayne Township, near McElhattan, PA. The permit site area is 300 acres with a disposal area of 33 acres. Permitted capacity is approximately 4.2 million cubic yards. The facility accepts a maximum of 750 tons per day of waste, and averages approximately 525 tons per day. The facility receives approximately 156,000 ton per year of municipal waste. Disposal capacity for the facility is approximately 12 years as of 2000.

5.2.2 WAYNE TOWNSHIP LANDFILL - EXPANSION PLAN

The south side is a 33.2-acre lined landfill with a capacity of 4,272,727 cubic yards. The north side is 60.5 acres with a total lined landfill capacity of 9,000,000 cubic yards. There is 900,000 tons of refuse in the north side (natural renovation site) which must be re-landfilled. On the south side Field 8 was constructed in 1998, Field 9 & Field 10 were constructed in 1999, and Field 11 & Field 12 will be constructed in 2000. With all fields constructed on the south side we will have enough remaining capacity to operate at 130,000 tons per years until 2016. This is calculated using a compaction ratio of 0.75 tons per cubic yard. The permit for the north side will be prepared in the year 2006 assuming approval in the year 2009. The north side will be divided into 8 fields. Excavation of existing refuse will begin in 2009. At the present permitted tonnage projected capacity is to the year 2045.

5.3 CLINTON COUNTY RECYCLING PROGRAM

Act 101 of 1988 (as amended) states as a goal that 35% of all municipal waste generated in Pennsylvania by 2003 should be recycled. The Clinton County Solid Waste Authority has aggressively moved ahead with a recycling program in order to contribute to this goal. Section 4 describes current and future recycling program initiatives and goals.

Curbside recycling has been implemented in the County's only mandated community and expanded to 12 other municipalities. In addition, the Authority has developed a county-wide drop-off collection program that now includes 20 sites.

The recycling program design is readily expandable to accommodate future growth due to increased citizen participation in recycling or the addition of materials not currently collected in the program. The Authority's processing center can be enlarged, and the number of collection routes can be increased should quantities so justify. As with any new program, actual experience is required in order to determine the optimal system.

Detailed information on the County recycling program is also detailed in Section 4.

5.4. OTHER WASTES

Household Hazardous Waste

Critical developmental details of this program include compliance with PADEP guidelines and regulations, insurance considerations, educational benefits, and cost.

One alternative to the operation of a household hazardous waste program is to not conduct the program and to continue to rely completely upon landfill disposal. Another alternative is to incorporate a collection feature into the program utilizing

PADEP grants and guidelines. This feature would likely result in the retention of an outside, PADEP authorized collection contractor and the scheduling of an annual household hazardous waste turn back day.

There are also alternatives to the educational feature of the program for household hazardous waste that should be noted. An education program should be conducted that would emphasize alternative solutions including waste reduction (purchase only what you need), aerosols (use pump-spray or other non-aerosol versions), sharing (ask a neighbor if they could use up the product as it was intended to be used) and the use of less hazardous alternative products.

Public education was selected as the preferred program due to overall program impact and cost considerations. The only cost associated with this type of household hazardous waste program will be the cost of preparing and delivering the education program.

The value of an education program regarding household hazardous waste cannot be stressed enough, both in terms of enhancing participation and finding alternatives to municipal waste disposal.

Biosolids Management

Clinton County will continue to rely on the current system for managing biosolids, which involves processing of wastewater at publicly-owned and operated facilities into biosolids that are primarily land applied, composted, or otherwise recycled back into a productive use. The landfill has the capacity to accept sludge generated in the county over the 10-year planning period.

Septage Management

The county will continue to rely on wastewater treatment plants that are accepting septage, as well as land application using permitted sites in the county. As indicated with biosolids, the current system is adequate, and the county is not considering other options at this time. However, if management of septage were to become difficult for any reason, the Authority will reevaluate this management strategy.

Medical Waste

The disposal of medical wastes is regulated by the PADEP and outside the responsibility of the county. There are a number of generators of this waste in the county that includes: hospitals and doctors, dentists, funeral and veterinarian offices. Generators of this waste currently have sufficient and adequate disposal options available.

5.5. SOLID WASTE RELATED SERVICES

5.5.1 EXISTING SOLID WASTE MANAGEMENT SERVICES

The Authority currently provides numerous services related to solid waste management and recycling to a number of entities that includes municipalities, haulers, the general public, special interest groups and organizations. The following is a list of services provided by the Clinton County Solid Waste Authority.

Hauler Services

- Annual licensing of waste haulers
- • Enforcement of hauler regulations
- Provide regulatory compliance information
 - Transport/disposal regulations and methods
 - Processing and disposal facility information

Disposal Services

- Wayne Township Landfill operation, maintenance and administrative responsibilities

Recycling

- Curbside and drop-off recycling program coordination
- PADEP Annual Recycling Report
- Grantsmanship

Waste Management Information

- Provide solid waste collection, storage, transport and disposal information to county residents and businesses
- Provide waste reduction/recycling information to businesses and institutions
- Provide hazardous materials reporting procedures guidance
- Provide household hazardous waste (HHW), used oil and other special handling waste information

Public Education

- Newsletters/brochures
- HHW and used oil disposal/recycling information
- Development and maintenance of Clinton County Solid Waste Authority website (www.waynetwplandfill.com)

Municipal Services

- Curbside and drop-off recycling program operation and coordination
- Grant application and assistance (Act 101- Section 902 & 904)
- Recycling ordinance assistance
- Solid waste contract ordinance assistance
- Provide solid waste management and recycling information
- Curbside and drop-off program operation and administration

Waste Management Planning

- County Plan implementation
- Grantsmanship (Act 101- Section 901)

5.5.2 NEW SOLID WASTE MANAGEMENT PROGRAM INITIATIVES

As part of this plan revision process, the Authority has developed a list of future services and initiatives that may be provided to residents and business and institutional establishments in the county. The Authority has developed these new initiatives as part of the overall solid waste management system implementation for the following reasons:

- To achieve the Pennsylvania recycling goal of 35% by 2003.
- To develop recycling services that may not be as readily available to non-mandated municipalities;
- To provide special waste recycling programs to county residents;
- To provide commercial, institutional and industrial establishments with waste management and recycling information and options; and,
- To increase solid waste management and recycling awareness in the county.

The following is a brief listing and discussion of programs and services the Authority will initiate and implement (if feasible) during the plan implementation period.

Waste Management Information Services

- *Business/institutional waste audits*—The Authority has received requests to perform or assist local establishments perform waste audits. These audits will assist owners/operators of these establishments to implement or improve waste management initiatives including waste reduction and recycling that potentially could reduce waste disposal costs.
- *Develop a commercial and institutional establishment recycling performance reporting procedure*—to be implemented by municipalities with no reporting program currently in place, or a program that could be implemented by the county.

A commercial reporting program would more accurately depict the volume of waste diverted from the county's waste stream and identify areas of the county's waste management system in need of additional programs.

- *Survey of waste recycling performance*—The Authority will evaluate and may institute a system to survey recycling performance at commercial and institutional establishments, in conjunction with municipal requirements and initiatives.

Recycling Programs and Services (5-year Strategic Plan)

- Evaluate expansion of the MRF to include processing system for plastics.
- Development of a commercial/industrial collection program.
- Integrate plastics collection into curbside recycling program.
- ➔ • Expand recycling programs at County schools and Lock Haven University.
- Develop a county-wide composting/mulching program (residential and municipal).
- Develop “event” recycling collection programs (HHW, etc.)

Public Education Programs

- Support professional presentations for schools/interested organizations. Provide through coordination and possibly monetary support professional presentations that are available through local, state and national organizations, agencies and businesses in the waste management and recycling industries.
- Benefits of proper agricultural use of sewage sludge (biosolids) and septage. The Authority, in conjunction with municipalities, will evaluate the need for developing a public education program for the general public, local businesses and haulers on the proper processing, transportation and disposal on agricultural lands of biosolids that would include environmental (biological, soil) effects of improper use of these wastes.

Waste Management Planning

- Assessing technologies/solutions for processing and disposal of municipal waste.
- Clinton County Planning Commission interface. The Authority will coordinate/update the county planning commission on appropriate waste management issues.
- State waste management regulatory reviews. The Authority will review and comment on any potential regulations related to waste management planning, recycling or waste facility development when submitted to the Authority for official review and comment and as requested by the Clinton County Commissioners, residents, organizations or other agencies of the county.

- Evaluate the expansion of existing curbside and drop-off recycling programs into other parts of the County.
- County Waste Management Plan review/update. The Authority will review the county municipal waste management plan annually to determine if programs initiated, planned or scheduled for implementation have been addressed. This review could lead to plan updates and revisions.

6.1 INTRODUCTION

Chapter 4 examined the options for collecting and processing of recyclable materials and yard waste. Chapter 5 evaluated the various options available for the collection, transportation, processing and disposal of municipal solid waste generated in Clinton County. Based on the recommendations outlined in these chapters, this chapter summarizes various components of the solid waste management system. Section 6.2 describes recyclables collection and processing facilities and yard waste composting sites. Section 6.3 identifies the waste disposal site utilized by the County.

6.2 LOCATION OF RECYCLABLES COLLECTION & PROCESSING FACILITIES

Location of programs for collection of recyclable materials includes:

- Mandated Act 101 Curbside Program - City of Lock Haven
- Voluntary Curbside Program - Avis Borough, Beech Creek Borough, Castanea Twp., Chapman Twp., Dunnstable Twp., Flemington Borough, Mill Hall Borough, Pine Creek Twp., Renovo Borough, South Renovo Borough, Wayne Twp. and Woodward Twp.
- Drop-off Recycling Sites - Wayne Twp., Bald Eagle Twp., Beech Creek Borough, Castanea Twp., Chapman Twp., Lock Haven, Crawford Twp., Farrandville, Green Twp., Kettle Creek, Lamar Twp., Leidy Twp., Loganton Borough, Logan Twp., Mill Hall Borough, Pine Creek Twp., Swissdale, Woodward Twp.

Only the City of Lock Haven operates a leaf and yard waste collection program in Clinton County.

The Authority will coordinate with municipalities to identify potential composting program and sites and will assist in their development by supplying technical assistance and coordination.

6.3 WASTE DISPOSAL SITES

Clinton County generated municipal solid waste will be disposed at the Wayne Township Landfill, located near McElhattan in Clinton County for the 10-year planning period of this solid waste management plan. This satisfies Act 101 requirements that the County provide 10-years of disposal capacity for all municipal waste generated in the County. Chapter 5 explains in detail Clinton County's selected solid waste management system.

7.1. CLINTON COUNTY SOLID WASTE AUTHORITY

The Clinton County Solid Waste Authority is a governmental entity that is responsible for implementing the plan on behalf of the County. This responsibility was assigned to the Authority by the Clinton County Board of Commissioners pursuant to Act 101, Section 303, which allows for counties to enter into written agreements with others to fulfill some or all of the county's responsibilities.

The Authority was established in accordance with the Municipal Authorities Act of 1945 of the Commonwealth of PA. It received a certificate of incorporation on March 31, 1972 which states that the Authority "shall exist for a term of fifty years unless sooner dissolved according to law." The purpose of the Authority, as indicated in their Articles of Incorporation, includes, "the right to plan, regulate, and operate solid waste storage, collection, transportation, processing and disposal systems within Clinton County."

The membership of the Authority was originally comprised of 15 members, but was later amended in 1977 to reduce membership to 11 individuals, and again in 1997 which reduced membership to 9 individuals, all of whom must be residents of Clinton County. Membership terms are 5 years and are staggered so that no more than three members of the Authority will have their terms expire in any given year.

The Authority holds regularly scheduled meetings at the Wayne Township Land-fill office on the second Wednesday of each month. The meetings are open to the public and frequently attended by the media.

7.2. LEGAL BASIS

The legal basis for the Clinton County Solid Waste Authority's power to implement the solid waste management plan within the County is outlined in their Articles of Incorporation and in PA Act 1988-101. The Authority was incorporated by the Clinton County Board of Commissioners who declared in a resolution dated March 24, 1972 states that "Whereas, the Board of Commissioners of Clinton County, Pennsylvania, recognize that the problem of solid waste storage, collection, transportation, processing and disposal can only be solved by a County-wide Authority, with the cooperation of all the citizens of the County."

Section 303(a) of Act 101 outlines the primary responsibility of the County concerning municipal waste management. "Each County shall have the power and its duty shall be to insure the availability of adequate permitted disposal capacity for the municipal waste which is generated within its boundaries." Section 303.(d) of Act 101 allows the County to delegate some of its responsibility, "A County may enter into a written agreement with another person pursuant to which the person undertakes to fulfill some or all of the county's responsibilities under this act for municipal waste planning and implementation of the approved County plan." In fact, such a delegation of responsibility has occurred in Clinton County as a result of the

agreement and resolution referenced above. However, in accord with Act 101, the County and the Authority shall remain jointly and individually responsible for solid waste management in Clinton County.

8.1. PUBLIC PROVISION FOR WASTE DISPOSAL

Clinton County determined in 1973 that it is in the public interest for municipal waste disposal to be a public function and has provided for the appropriate mechanism to accomplish this through the establishment of the Solid Waste Authority, and the Authority's ownership and operation of the Wayne Township Landfill. Additional waste management services are now being offered and other programs developed by the Authority, effectively improving waste handling in the County with the same public sector tradition. Refinements to the system included the establishment of a recycling program and construction of recycling materials recovery facility at the Wayne Township location and development of curbside program drop-off recycling sites.

8.2. PUBLIC PURCHASE OF RECYCLING EQUIPMENT

The Clinton County Solid Waste Authority has developed a recycling program with an ideal relationship with the private sector. The Authority provides for all phases of collection including home recycling containers, curbside collection vehicles, drop boxes, and equipment for drop box pickup. Authority involvement in collection will achieve greater participation in recycling due to a convenient and efficient collection system.

8.3. PUBLIC PROVISION OF FACILITIES

The Authority has been providing the County with a landfill facility since the issuance of its permit on August 20, 1973. This plan does not propose that the County own or operate any new landfill facility, but rather that the County carry on the tradition of providing permitted disposal capacity for County generated wastes within County boundaries. The existing Wayne Township Landfill is part of the PADEP approved County plan that was adopted in 1990, as well as the result of earlier PADEP supported planning efforts originally drafted in 1971. The Clinton County Solid Waste Authority has been in existence since 1972. This plan proposes to continue the same practices of providing disposal capacity as a public function that have historically been undertaken in Clinton County by the Authority.

9.1 IMPLEMENTING DOCUMENTS

The provisions of Act 101, Section 303 state that each County shall have the power and its duty shall be to ensure the availability of adequate permitted processing and disposal capacity for the municipal waste which is generated within its boundaries. Additionally, Section 303 allows for counties to delegate their responsibility by entering into agreement with another entity to undertake some or all of the county's responsibilities for municipal waste planning and implementation.

On November 23, 1988 the Clinton County Board of Commissioners passed a resolution to enter into an agreement with the Clinton County Solid Waste Authority to provide such services. Both the resolution and the agreement are provided as Appendices F and G. The terms of the agreement state that the Authority does, pursuant to the request of County, undertake to fulfill all of the County's responsibilities under Act 101 for municipal waste planning and implementation of the approved County plan and that the County does hereby confirm and ratify the County plan dated February 1985 previously submitted to the Department of Environmental Protection. This agreement demonstrates that the Authority is authorized to provide disposal capacity to the residents of Clinton County.

When authorized by agreement between a hauler and the Authority, an administrative fee may be charged on waste delivered to waste facilities in Pennsylvania other than the Wayne Township Landfill. No additional fee will be assessed to a hauler for waste delivered to out-of-state disposal facilities.

These documents, which transferred County responsibility to the Authority, provide the basis for County control of a disposal facility. The Clinton County Solid Waste Authority owns and operates the Wayne Township Landfill, which currently has a life expectancy of approximately 12 years. However, expansion plans for the site, as described in Section 5 of this plan, would provide capacity for an additional 46 years. Currently, capacity is available to properly dispose of all municipal waste that is expected to be generated within the County for the 10-year planning period and beyond.

In 1991, a municipal waste management ordinance was enacted for the health, safety, and welfare, and to protect the environment of the citizens of Clinton County. The existing ordinance, originally enacted in 1989, provided that all municipal waste generated in the County must be delivered to the Wayne Township Landfill. The ordinance stipulated that municipal waste must be disposed of at permitted disposal facility.

As part of the planning process of the Plan Revision, the County has revised its municipal waste management ordinance. The ordinance is provided as an Implementation Document to this Plan Revision. The County has acknowledged that it is acting as a market participant, meaning that it is competing as a private entity regarding

disposal. However, the recised municipal waste ordinance continues to require the licensing of haulers to protect the health, safety, and welfare of citizens from the transportation, processing, and disposal of municipal waste.

10.1 ORDERLY EXTENSION OF MUNICIPAL WASTE MANAGEMENT SYSTEMS

This plan seeks to provide for the orderly extension of municipal waste management systems in a manner that is consistent with the needs of Clinton County. This plan has been developed in accordance with current federal, state and local laws and regulations.

11.1 FACILITIES DEVELOPED PURSUANT TO SUBCOUNTY PLANS

Act 101 instructs that the county plan must insure that it will not affect the design, construction, operation, financing or contractual obligations of any municipal waste landfill or resource recovery facility located in the county meeting certain criteria. There are no sub-county plans in Clinton County, and therefore, there are no conflicting plans.

12.1 PUBLIC PARTICIPATION

The plan revision process was conducted in the appropriate public forum. Public notifications of the revision process were sent to PADEP, all County municipalities, and the County Solid Waste Advisory Committee (SWAC). These notifications advised all parties of the intention of the County and Authority to conduct a “non-substantial plan” revision. The planning process has followed the requirements of 25 PA Code Chapter 272 of the PADEP Rules and Regulations. Act 101, Section 503, provides that counties shall establish an advisory committee before initiating the development or revision of the County municipal waste management plan.

The County commissioners appointed the SWAC as required by Act 101 of 1988 and as part of the 1990 plan development process. The Authority reappointed the SWAC in January 2000 as part of this plan revision process. Each meeting was advertised in the local paper and was open to the public.

The SWAC’s primary objective was to assist the Authority to prepare the County plan and provide input from the citizenry, waste management organizations, selected interest groups, and municipal officials of Clinton County. The SWAC met three times during the plan revision process and were consulted for comment and input during each of the meetings. At each stage of the plan development the SWAC members were invited to provide input and recommendations to the Plan for Authority consideration. Public participation information including public meeting documentation is appended to this plan.

