Regional Municipal Waste Management Plan

June 2014

Prepared for

Mifflin County, PA/Mifflin County Solid Waste Authority
and
Juniata County, PA

Barton & Loguidice

Two-County Region

Mifflin / Juniata Counties

Regional Municipal Waste Management Plan

June 2014

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Table of Contents

Table of Contents

Book 1 of 2

Regional Municipal Waste Management Plan

Appendix G Municipal Waste Ordinances and/or Regulations

List of Municipalities with Existing Municipal Waste Ordinances and/or Regulations

Mifflin County

- Armagh Township
- Brown Township
- Decatur Township
- Derry Township
- Granville Township
- Lewistown Borough
- Union Township

Juniata County

- Beale Township
- Delaware Township
- Mifflin Borough
- Mifflintown Borough
- Port Royal Borough
- Spruce Hill Township
- Susquehanna Township
- Thompsontown Borough

Appendix H Recycling Collection

Recyclables Collection Locations and Materials

Lewistown Borough Agreement to Market Recyclable Materials

Municipalities with Mandatory Curbside Recyclables Collection

Materials Collected at Curbside by Park's Disposal, Inc. and Cocolamus Creek Disposal Services

Appendix I Organics Recycling

List of Municipal Organics Programs

List of Private Organics Processors

Guidelines for Yard Waste Composting Facilities

Appendix J Waste Disposal Fee

2012 Mifflin County Solid Waste Authority Rate Structure

2013 Mifflin County Solid Waste Authority Rate Structure

2014 Mifflin County Solid Waste Authority Rate Structure

Mifflin County Hauler Cost Analysis

Appendix K Solicitation of Interest

Two-County Region Solicitation of Interest

Submittal Form

Draft Agreements

SOI Cover Letter to Facilities

SOI Advertisement

Direct Advertisement Mailing List for SOI Distribution

Table 1 – Completeness Review of Submittal Forms

Table 2 – Max Tipping Fees at Disposal Sites

Disposal Capacity Assurance Contract

Advanced Disposal - Greentree Landfill

Advanced Disposal - Mostoller Landfill

Advanced Disposal - Sandy Run Landfill

Book 2 of 2

Appendix K Solicitation of Interest…Continued

Clinton County Solid Waste Authority

IESI Blue Ridge Landfill

LCSWMA - Lancaster Waste-to-Energy Facility

LCSWMA - Susquehanna Resource Management Complex

Lycoming County

Waste Management Services - Laurel Highlands Landfill

Waste Management Services - Mountain View Reclamation

Waste Management Services - Southern Alleghenies Landfill

Appendix L Haul / Disposal Agreement

RFP for MCSWA Transfer Station Hauling/Disposal – November 2013

Solid Waste Haul / Disposal Agreement between MCSWA and Clinton County Solid Waste Authority

Appendix M Waste Destination Reports

Mifflin and Juniata Counties Regional Waste Destinations Report (2000-2013)

Appendix N WARM Model

EPA-WARM Model

Appendix O MCSWA PV Project

MCSWA Request for EPC Proposals - Photovoltaic (PV) Project
Advertisement for Proposals
Addendum No. 1

Appendix P Sample Bid Documents

Sample Recycling Municipal Bid – April 2012
Sample Waste and Recycling Municipal Bid – April 2012
Example Solid Waste Services Contract - Juniata Terrace

Appendix Q Implementation Documentation

Intermunicipal Agreement (IMA) - Planning Phase between Mifflin and Juniata Counties
Intermunicipal Agreement (IMA) - Implementation Phase between Mifflin and Juniata Counties
Mifflin County Regional Adoption Resolution
Juniata County Regional Adoption Resolution
Mifflin County Municipal Ratifications
Juniata County Municipal Ratifications

Appendix R Other Documents [Reserved]

Other Plan Implementation Documents

Appendix S SWAC Meeting Documentation

SWAC Meeting #1 - Mifflin County
SWAC Meeting #2 - Mifflin County
SWAC Meeting #1 - Juniata County
SWAC Joint Meeting #1 - Mifflin and Juniata Counties
SWAC Meeting #3 - Mifflin County
SWAC Meeting #2 - Juniata County
SWAC Meeting #3 - Juniata County
SWAC Meeting #4 - Mifflin County
SWAC Joint Meeting #2 - Mifflin and Juniata Counties
SWAC Joint Meeting #3 - Mifflin and Juniata Counties
SWAC Joint Meeting #4 - Mifflin and Juniata Counties
SWAC Joint Meeting #5 - Mifflin and Juniata Counties

Appendix S SWAC Meeting Documentation…Continued

- SWAC Public Hearing Meeting - Juniata County
- SWAC Public Hearing Meeting - Mifflin County
- Proof of Publication
  - Juniata Sentinel
  - Lewistown Sentinel
  - PA Bulletin

Appendix T Contingent Waste Assurance Ordinances [Not Adopted]

- Juniata County Contingent Waste Assurance Ordinance
- Mifflin County Contingent Waste Assurance Ordinance

1.0 Description of Waste

1.1 Introduction

1.1.1 Overview of Planning Process

This municipal waste management plan was prepared in accordance with the requirements of Act 101 of 1988, the Municipal Waste Planning, Recycling, and Waste Reduction Act. Act 101 delegates to counties the power and duty to prepare and implement plans for the processing and disposal of municipal waste generated in the county. The responsibility and authority for the collection and transportation of municipal waste and of source-separated recyclables is delegated to local municipalities. To implement the plans, the Act accords to counties the authority to adopt ordinances and regulations and enter into contracts for management of waste within the county in accordance with the county municipal waste management plan. The Act specifically allows counties to delegate their power and duty for municipal waste planning and implementation to another body, such as a municipal authority. Mifflin County has an ongoing delegation agreement with the Mifflin County Solid Waste Authority (MCSWA, or Authority), delegating its Act 101 duties regarding planning and implementing municipal waste and recycling activities to the Authority. It has been determined the current delegation agreement between Mifflin County and the MCSWA is acceptable to implement Mifflin County's portion of the duties under this Plan Update. A copy of the Mifflin County delegation agreement is included in Appendix A. Juniata County is responsible for its Act 101 planning and implementation duties. A copy of the delegation agreement between Juniata County and the Juniata County Conservation District is also included in Appendix A. Mifflin and Juniata Counties have also formally agreed to cooperate in the joint implementation of the Regional Plan. A copy of the fully executed 2-County intermunicipal agreement that acknowledges Regional Plan implementation cooperation is presented in Appendix Q.

Act 101 calls for Pennsylvania counties to develop comprehensive, integrated municipal waste management plans. A county municipal waste management plan should propose the optimal complementary use of a variety of management technologies, including waste reduction, recycling, waste processing, landfilling and/ or waste-to-energy. The Act specifically requires that the county plan

consider the maximum feasible development and implementation of recycling programs. In 2009, the Mifflin County Solid Waste Authority conducted a Waste Stream and Revenue Assurance Study to evaluate the existing waste management system in Mifflin County. This study focused on developing strategies to help increase the tons of solid waste entering the Authority's facilities, help identify ways to stabilize and increase the net Authority revenues on a short-term and long-term basis, and help lower the Authority's operating costs. The results of this evaluation were contained in the Waste Stream and Revenue Assurance Study - Phase 1 Report, finalized December 2009. The full Phase 1 Report is presented in Appendix B.

The Phase 1 Report identified "Best Prospects" and other strategies to increase tonnages and revenues, and/or to decrease costs, which included:

- Enter voluntary talks and agreements with major private haulers, to bring additional wastes to the Authority's waste transfer station and recycling depot.
- Establish tipping fees and fee structures at the MCSWA that are competitive with the free market's "regional marketplace" for waste hauling and disposal alternatives.
- Pursue County support of some MCSWA costs, possibly with general fund support/ millage assessment.
- Encourage local municipal bidding for waste collection and disposal, with the MCSWA site designated in the bid documents for receipt of the collected waste.
- Support joint planning and cooperative efforts with Juniata County to help direct Juniata County's waste to MCSWA facilities, as has been done in the past.

Consider implementing some form of "flow control" to help secure the delivery of waste to the Authority's transfer station and to help keep the Authority financially sustainable as a service provider of integrated waste and recyclables management services in the region. It is preferred that this flow control tool be a contingency measure to be used only if necessary, and work hand-in-hand (if possible) with current delivery contracts and commitments by haulers to the Authority's transfer station.

In total, over 25 strategies were developed and evaluated in the Phase 1 Report. As noted above, the report recommended establishing joint solid waste and recyclables management, planning, and implementation efforts with Juniata County. There is a long and successful history of joint planning and cooperation between the two counties in a variety of public service areas. Juniata County has evaluated its current waste and recycling system's deficiencies and needs, and confirmed its interest in participating in a joint regional municipal waste planning process with Mifflin County.

Mifflin County and Juniata County, therefore, entered into an Intermunicipal Agreement that formalizes a cooperative effort between the two counties to plan and implement solid waste and recycling measures that serve the citizens and businesses of the two counties. A copy of this Intermunicipal Agreement is presented in Appendix Q. The Mifflin and Juniata Counties Regional Municipal Waste Management Plan (Regional Plan) builds upon, updates and expands upon information contained in the 2003 Mifflin County Municipal Waste Management Plan and in the 2003 Juniata County Municipal Waste Management Plan.

One significant recommendation of the Phase 1 Report is for Mifflin County and the MCSWA to secure municipal waste generated from the two counties to the MCSWA Transfer Station and Recycling Depot located in Derry Township, near Lewistown. Securing deliveries of Mifflin County and Juniata County waste to the MCSWA Transfer Station would help stabilize (and possibly increase) the revenues of the MCSWA, and would, in turn, secure the financial sustainability of the MCSWA operations as a viable service provider of municipal waste and recycling services to the Region's residents and businesses. The Phase 1 report and this Regional Plan investigate ways to secure waste and contain further discussions on options and recommendations for securing the financial viability of MCSWA, coupled with thoughts on how to expand opportunities and integrated waste management and recycling services in Juniata County.

In order to provide for public participation in the planning efforts related to this Plan, the Mifflin County Commissioners and the Juniata County Commissioners each appointed a Solid Waste Advisory Committee (SWAC) in 2010. The SWACs assisted Mifflin County and Juniata County in preparing the Regional Plan for the counties by providing guidance, review comments and input from the

citizenry, waste management organizations, public and environmental interest groups, and municipal officials within Mifflin and Juniata Counties.

SWAC members met initially in September 2010, and have met periodically throughout all stages of the Regional Plan preparation process. The list of SWAC committee members in each county is shown on the inside cover page of this Regional Plan.

Beyond giving a background and overview of the Regional Plan process, the purpose of this chapter is to describe the types and estimate the quantities of municipal solid waste (MSW) generated in Mifflin and Juniata Counties that will be managed by the systems described in this plan. In order to plan for the processing and disposal of municipal waste in Mifflin and Juniata Counties, certain methods of estimating the quantity and composition of the counties' waste were identified. These methods were used to determine historical waste generation rates, project future waste generation rates and estimate the potential diversion of wastes through source separation recycling and composting programs. These methods are also used to estimate the required capacity of any processing and disposal facilities that may be used over the ten-year planning period.

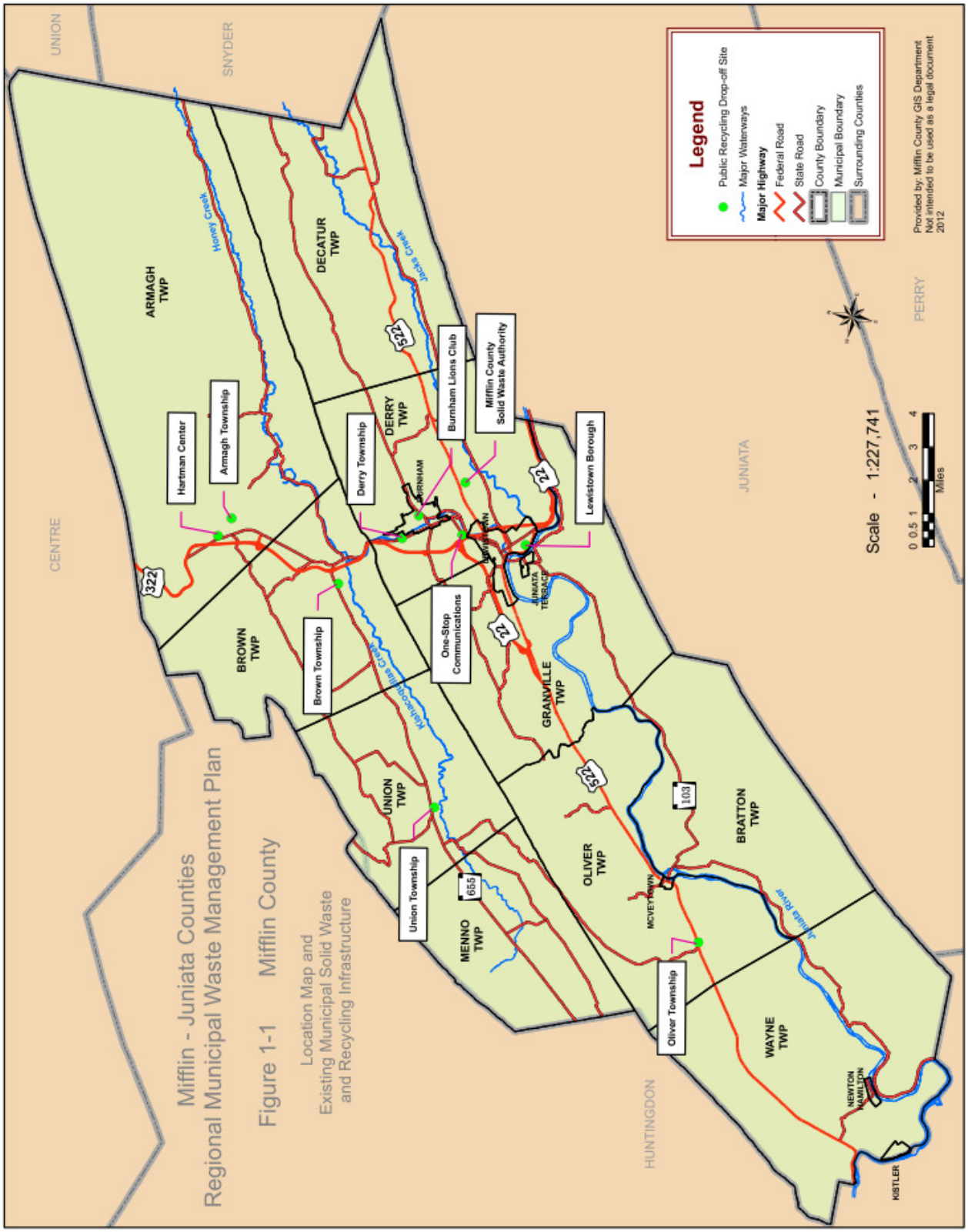
Section 1.2 describes Mifflin and Juniata County. A description of the various waste types is presented in Section 1.3. Sections 1.4 - 1.11 describe waste generation and composition in the two counties, including municipal solid waste, construction/demolition waste, sewage sludge, infectious and chemotherapeutic waste, household hazardous waste, residual waste, waste tires, and yard waste.

1.2 Description of the Counties

1.2.1 Mifflin County

Mifflin County, located in the Appalachian Mountains of central Pennsylvania, was established as a County by a legislative act in 1789. The County is situated in the middle of the Susquehanna River Basin along the Juniata River as illustrated by the location map presented in Figure 1-1. The adjoining counties include Centre County to the north, Huntington County to the west, Juniata County to the south and Snyder and Union counties to the east.

Figure 1-1
Mifflin County Location Map



The County is 415 square miles in area and is located in the Valley and Ridge Physiographic Province of the Appalachian Mountains, characterized by northeast trending, parallel ridges and adjacent valleys. The bedrock consists primarily of sedimentary formations of limestone, dolomite, shale, and sandstone. There are twenty-two major geologic formations in Mifflin County, ranging in age from the Ordovician (500 to 440 million years ago) to Devonian (400 to 360 million years ago) Periods.

Karst features are present in much of the Appalachian Mountain Section. Karst topography is land where underlying bedrock, such as limestone, was dissolved by water, causing ground surface depressions. Sinkholes and caverns are typical in karst regions due to the high solubility of the limestone bedrock. Of specific concern relative to Mifflin County is the protection of the limestone areas from uses that bring the potential of groundwater contamination. The extensive fractures and porous characteristics of limestone geology present concern for sinkholes and foundation stability as well as infiltration of pollutants in developed areas. The topography of the County is characterized by parallel running mountain ridges that rise abruptly from the rolling hills of the valleys. Elevations above sea level range from 430 feet at the Juniata River to 2,430 feet on Jacks Mountain, which bisects the County northeasterly. The County is bordered by other prominent ridges, including Stone, Broad, Front and High Mountains to the northeast, and Blacklog, Blue and Shade on the southwest.

The County is made up of 16 municipalities: 10 townships and 6 boroughs (a complete list of the municipalities in Mifflin County is located in Table 1-3). The north-south corridor, which parallels U.S. Route 322 from Juniata County on the south to Centre County on the north, is the primary urbanization area and includes a number of inter-connected population centers and economic activities. Lewistown Borough, Granville Township, Burnham Borough, Derry Township, Armagh Township, Union Township, Brown Township, Menno Township and McVeytown Borough are the main economic activity centers, while the remaining townships and boroughs are more rural in nature and contain only scattered commercial and industrial establishments. The Borough of Lewistown, located in the middle of the County, is the largest population center in the County.

The estimated number of commercial, industrial, and occupied residential establishments in Mifflin County is provided in Table 1-1.

Table 1-1
Mifflin County
Estimated Number of Establishments in County

SECTOR	NUMBER
Commercial and Industrial [(1)]	932
Occupied Residential Housing Units[(2)]	18,743

(1) United States Department of Labor – Bureau of Labor Statistics, March 2010

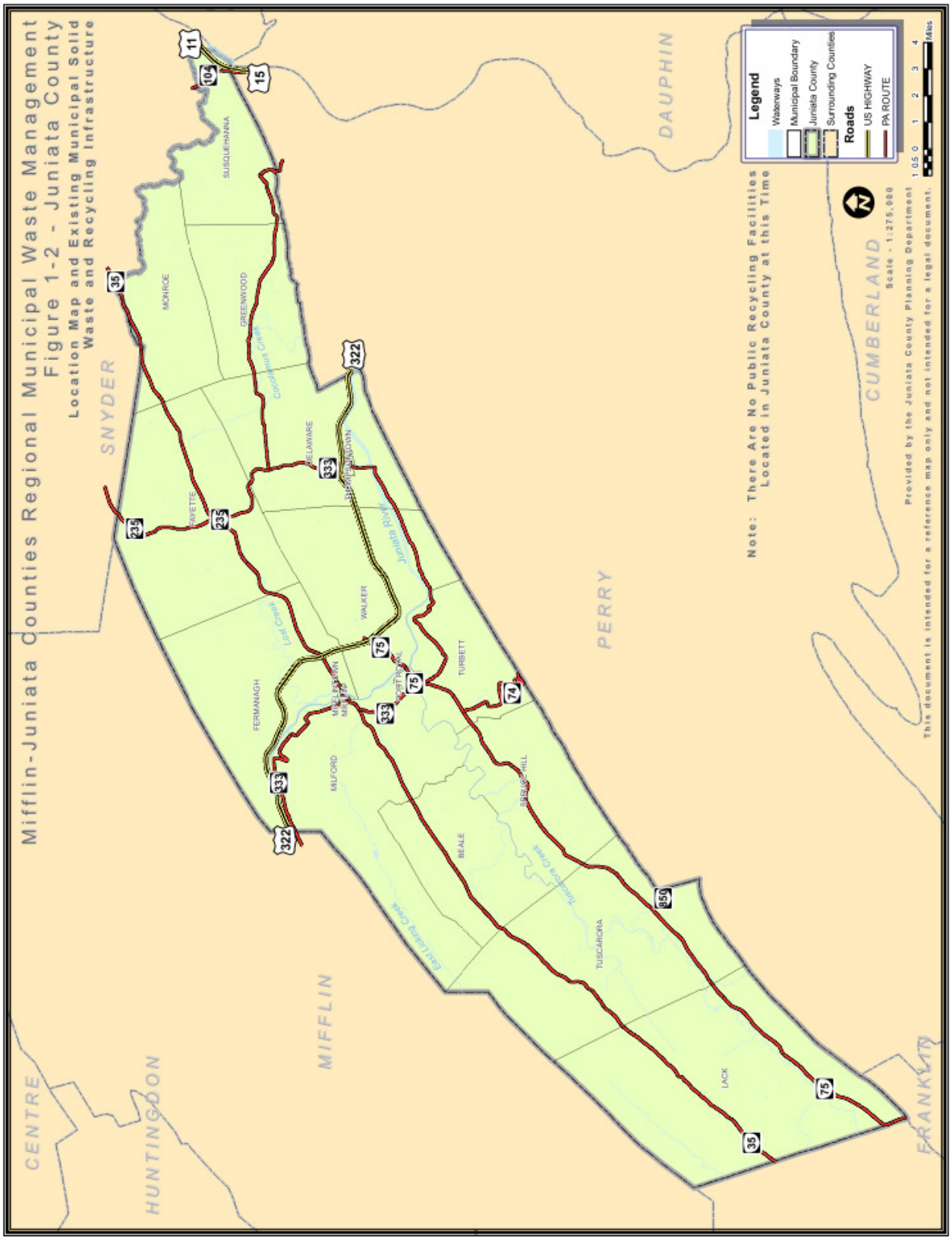
(2) General Housing Characteristics, 2010 U.S. Census

1.2.2 Juniata County

Juniata County, located slightly southeast of the center of the Commonwealth of Pennsylvania, was established as a County by a legislative act in 1831. Juniata County was named for the river running through its boundaries as illustrated by the location map presented in Figure 1-2. The adjoining counties include Snyder and Mifflin counties to the north, Huntington and Franklin counties to the west, Perry County to the south and Northumberland and Dauphin counties to the east.

Juniata County is 394 square miles in area. The western half of Juniata County lies within Pennsylvania's Appalachian Mountain physiographic province, characterized by long narrow ridges with steep side slopes and corresponding long narrow valleys. The eastern half of Juniata County lies within Pennsylvania's Susquehanna Lowland physiographic province, which is a result of glaciations and the processes of the Susquehanna River flowing over the land for millions of years. The bedrock in the Susquehanna Lowlands consists primarily of siltstone formations. The majority of geologic formations in Juniata County include shale and sandstone formations. Karst features are present in much of the Appalachian Mountain section. Geologic formations in Juniata County range in age from the Ordovician (500 to 440 million years ago) to Devonian (400 to 360 million years ago) Periods.

Figure 1-2
Juniata County Location Map



Of specific concern relative to karst features in the western half of Juniata County is the protection of the limestone areas from uses that bring the potential of groundwater contamination. The extensive fractures and porous characteristics of limestone geology present concern for sinkholes and foundation stability as well as infiltration of pollutants in developed areas. The topography of the County is characterized by mountain ridges that rise abruptly from the rolling hills of the valleys, running the length of both counties from Southwest to Northeast. These mountain ridges create barriers to transportation routes in the region in a Northwest-Southeast direction, except along the Juniata River that dissects the Region's mountains in that direction.

Juniata County is made up of 17 municipalities: 13 townships and 4 boroughs (a complete list of the municipalities in Juniata County is located in Table 1-4). The north-south corridor, which parallels U.S. Route 322 from Perry County on the south to Mifflin County on the north, is the primary urbanization area and includes a number of inter-connected population centers and economic activities. Mifflin Borough, Mifflintown Borough, Port Royal Borough and Thompsontown Borough are the main economic activity centers, while the remaining townships and boroughs are rural in nature and contain only scattered commercial and industrial establishments. Mifflintown Borough, the County seat of Juniata County, has the highest population density in the County, while Fayette Township has the largest population in the County.

The estimated number of commercial, industrial, and occupied residential establishments in Juniata County is provided in Table 1-2.

Table 1-2
Juniata County
Estimated Number of Establishments in County

SECTOR	NUMBER
Commercial and Industrial (1)	444
Occupied Residential Housing Units(2)	9,476

(1) United States Department of Labor – Bureau of Labor Statistics, March 2010

(2) General Housing Characteristics, 2010 US Census

1.2.3 Population

The estimated populations of Mifflin County and Juniata County for year 2015 are 46,820 and 25,660, respectively. According to the 2010 US Census Bureau, Mifflin County's population has not grown at the rate originally assumed in the 2008 Mifflin County Public Sewer Plan. For this reason, the Mifflin County Comprehensive Plan (2014) population projections will be used to project waste tonnages over the ten year planning period. It shall be noted that a large project is currently proposed in Derry Township, Mifflin County that could generate substantial waste tonnages. The Regional Plan recommends Mifflin County revisit population projections during the next solid waste management plan revision in regards to the Derry Township project, to confirm whether or not the project was completed, and its resulting impact on waste tonnages.

Using the 2014 Comprehensive Plan projections for Mifflin County, the population of the Region is projected to grow modestly over the next 10 to 20 years. Tables 1-3 and 1-4 present the projected populations of each municipality in the Region. The 2010 populations are from the U.S. Census Bureau. The 2020 and 2030 population projections for Mifflin County are from the Mifflin County Comprehensive Plan (2014), and the 2020 and 2030 population projections for Juniata County are from the Juniata County Hazard Mitigation Plan (2013). The remaining population projections are interpolations/ extrapolations based on the previously mentioned population projection data.

Population projections indicate that Mifflin County's population will increase from the year 2010 population of 46,682 to 47,637 by 2020 (2.0 percent growth rate from 2010 population) and to 48,282 by 2030 (1.4 percent growth from 2020 population). These figures indicate an annual growth rate of less than 1 percent.

Population projections indicate that Juniata County's population will increase from the year 2010 population of 24,636 to 26,669 by 2020 (8.3 percent growth rate from 2010 population) and to 28,579 by 2030 (7.2 percent growth from 2020 population). These figures also indicate an annual growth rate of less than 1 percent, although a more rapid population growth rate is expected in Juniata County than in Mifflin County.

Table 1-3
Mifflin County Municipal Population Projections

Mifflin County	2010[(1)]	2012	2013	2014	2015	2016	2017	2018	2019	2020[(2)]	2021	2022	2023	2024	2025	2030[(2)]
Armagh Township	3,863	3,879	3,880	3,900	3,910	3,918	3,926	3,934	3,942	4082	4,088	4,093	4,099	4,104	4,110	4202
Bratton Township	1,317	1,322	1,320	1,330	1,340	1,343	1,345	1,348	1,351	1336	1,338	1,340	1,341	1,343	1,345	1338
Brown Township	4,053	4,070	4,070	4,090	4,100	4,108	4,117	4,125	4,134	4668	4,674	4,681	4,687	4,693	4,700	5168
Burnham Borough	2,054	2,062	2,060	2,080	2,090	2,094	2,099	2,103	2,107	1866	1,869	1,871	1,874	1,876	1,879	1724
Decatur Township	3,137	3,150	3,150	3,170	3,180	3,187	3,193	3,200	3,206	3429	3,434	3,438	3,443	3,448	3,452	3664
Derry Township	7,339	7,369	7,380	7,400	7,420	7,435	7,450	7,466	7,481	7357	7,367	7,377	7,387	7,397	7,407	7360
Granville Township	5,104	5,125	5,130	5,150	5,170	5,181	5,191	5,202	5,212	5186	5,193	5,200	5,207	5,214	5,221	5260
Juniata Terrace Borough	542	544	540	550	560	561	562	563	565	434	435	435	436	436	437	378
Kistler Borough	320	321	320	330	340	341	341	342	343	306	306	307	307	308	308	293
Lewistown Borough	8,338	8,372	8,380	8,410	8,430	8,447	8,465	8,482	8,499	7704	7,714	7,725	7,735	7,746	7,756	7129
McVeytown Borough	342	343	340	350	360	361	361	362	363	316	316	317	317	318	318	280
Menno Township	1,883	1,891	1,890	1,900	1,910	1,914	1,918	1,922	1,926	2033	2,036	2,038	2,041	2,044	2,047	2165
Newton Hamilton Borough	205	206	200	210	220	220	221	221	222	213	213	214	214	214	214	192
Oliver Township	2,175	2,184	2,180	2,200	2,210	2,215	2,219	2,224	2,228	2346	2,349	2,352	2,356	2,359	2,362	2504
Union Township	3,460	3,474	3,480	3,490	3,500	3,507	3,514	3,522	3,529	3588	3,593	3,598	3,603	3,607	3,612	3715
Wayne Township	2,550	2,560	2,560	2,580	2,590	2,595	2,601	2,606	2,611	2773	2,777	2,780	2,784	2,788	2,792	2910
Total County Population	**46,682**	**46,873**	**46,880**	**47,140**	**47,330**	**47,427**	**47,524**	**47,621**	**47,718**	**47637**	**47,701**	**47,766**	**47,830**	**47,895**	**47,959**	**48282**

(1) 2010 U.S. Census.

(2) Projections from the Mifflin County Comprehensive Plan 2014. Interpolation used for intermediate years. Numbers may not total due to rounding.

Table 1-4
Juniata County Municipal Population Projections

Juniata County	2010[(1)]	2012	2013	2014	2015	2016	2017	2018	2019	2020[(2)]	2021	2022	2023	2024	2025	2030[(2)]
Beale Township	830	844	851	858	870	877	884	892	899	930	937	943	950	956	963	1,032
Delaware Township	1,547	1,573	1,586	1,599	1,620	1,633	1,647	1,660	1,674	1,596	1,607	1,618	1,630	1,641	1,653	1,665
Fayette Township	3,478	3,536	3,565	3,594	3,630	3,660	3,690	3,721	3,751	3,718	3,744	3,770	3,797	3,823	3,850	3,950
Fermanagh Township	2,811	2,858	2,881	2,905	2,930	2,954	2,979	3,003	3,028	3,094	3,116	3,137	3,159	3,182	3,204	3,368
Greenwood Township	617	627	632	638	650	655	661	666	672	678	683	688	692	697	702	744
Lack Township	785	798	805	811	820	827	834	840	847	821	827	833	838	844	850	856
Mifflin Borough	642	653	658	663	670	676	681	687	692	630	634	639	643	648	652	633
Mifflintown Borough	936	952	959	967	980	988	996	1,004	1,013	965	972	979	985	992	999	1,021
Milford Township	2,088	2,123	2,140	2,158	2,180	2,198	2,216	2,234	2,253	2,417	2,434	2,451	2,468	2,485	2,503	2,747
Monroe Township	2,237	2,274	2,293	2,312	2,330	2,349	2,369	2,388	2,408	2,459	2,476	2,494	2,511	2,529	2,546	2,665
Port Royal Borough	925	940	948	956	970	978	986	994	1,002	983	990	997	1,004	1,011	1,018	979
Spruce Hill Township	834	848	855	862	870	877	884	892	899	898	904	911	917	923	930	989
Susquehanna Township	1,250	1,271	1,281	1,292	1,310	1,321	1,332	1,343	1,354	1,382	1,392	1,401	1,411	1,421	1,431	1,432
Thompsontown Borough	697	709	714	720	730	736	742	748	754	765	770	776	781	787	792	786
Turbett Township	981	997	1,005	1,014	1,030	1,038	1,047	1,056	1,064	1,073	1,081	1,088	1,096	1,103	1,111	1,205
Tuscarora Township	1,240	1,261	1,271	1,281	1,300	1,311	1,322	1,332	1,343	1,309	1,318	1,327	1,337	1,346	1,355	1,385
Walker Township	2738	2,783	2,806	2,829	2,860	2,884	2,907	2,931	2,956	2,951	2,972	2,992	3,013	3,034	3,056	3,122
Total County Population	**24,636**	**25,044**	**25,251**	**25,459**	**25,750**	**25,962**	**26,177**	**26,393**	**26,610**	**26,669**	**26,856**	**27,044**	**27,233**	**27,424**	**27,616**	**28,579**

(1) 2010 U.S. Census.

(2) Projections from the Juniata County Hazard Mitigation Plan 2013. Interpolation used for intermediate numbers. Numbers may not total due to rounding.

1.3 Definition of Waste Types

State law and regulations as well as the practical considerations of managing municipal waste necessitate that this Plan categorize municipal waste by type. Figure 1-3 depicts a classification scheme for the various waste types, based on definitions in State law and on standard usage of certain terms. The following subsections define the terms depicted in Figure 1-3.

1.3.1 Municipal Waste

1.3.1.1 Definition

Municipal waste is defined in 25 Pa. Code §271.1 of the PA Municipal Waste Management Regulations (Regulations) as:

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

Any material meeting the definition of residual waste, hazardous waste, or source-separated recyclable material, is not a municipal waste under the regulations.

1.3.1.2 Municipal Waste Classification by Origin

Municipal waste can be classified according to the activity or by the sector where it is generated.

Residential waste, also referred to as household waste, is municipal waste that is generated in households.

Commercial waste is municipal waste that is generated in commercial establishments. A commercial establishment, under the regulations, is one that is engaged in non-manufacturing or non-processing business, including, but not limited to, stores, markets, office buildings, restaurants, shopping centers, and theaters. Commercial waste includes lunchroom and office waste generated at industrial establishments.

Institutional waste is municipal waste that is generated at institutional establishments, which are defined under the regulations as establishments which are engaged in service, including hospitals, nursing homes, orphanages, schools, and universities.

Waste that falls into one of the above three municipal waste categories is what is conventionally regarded as "municipal solid waste" or "municipal refuse". For instance, waste characterization studies, which describe the percent composition of various materials in the municipal waste stream, conventionally describe only this subset of the municipal waste stream. Further, Act 101's original recycling goal of 25 percent that was increased to 35 percent in 2003 is interpreted to apply to these wastes (plus source-separated recyclable materials for tonnage computation purposes).

Sewage sludge is defined under 25 Pa. Code §271.1 of the Regulations as:

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

Sewage sludge solids content can vary from very low (holding tank pumpings) to moderately high (air-dried sludge). Also, the nutrient value and heavy metals content vary, depending on factors such as the source of the wastewater and the treatment and stabilization processes employed.

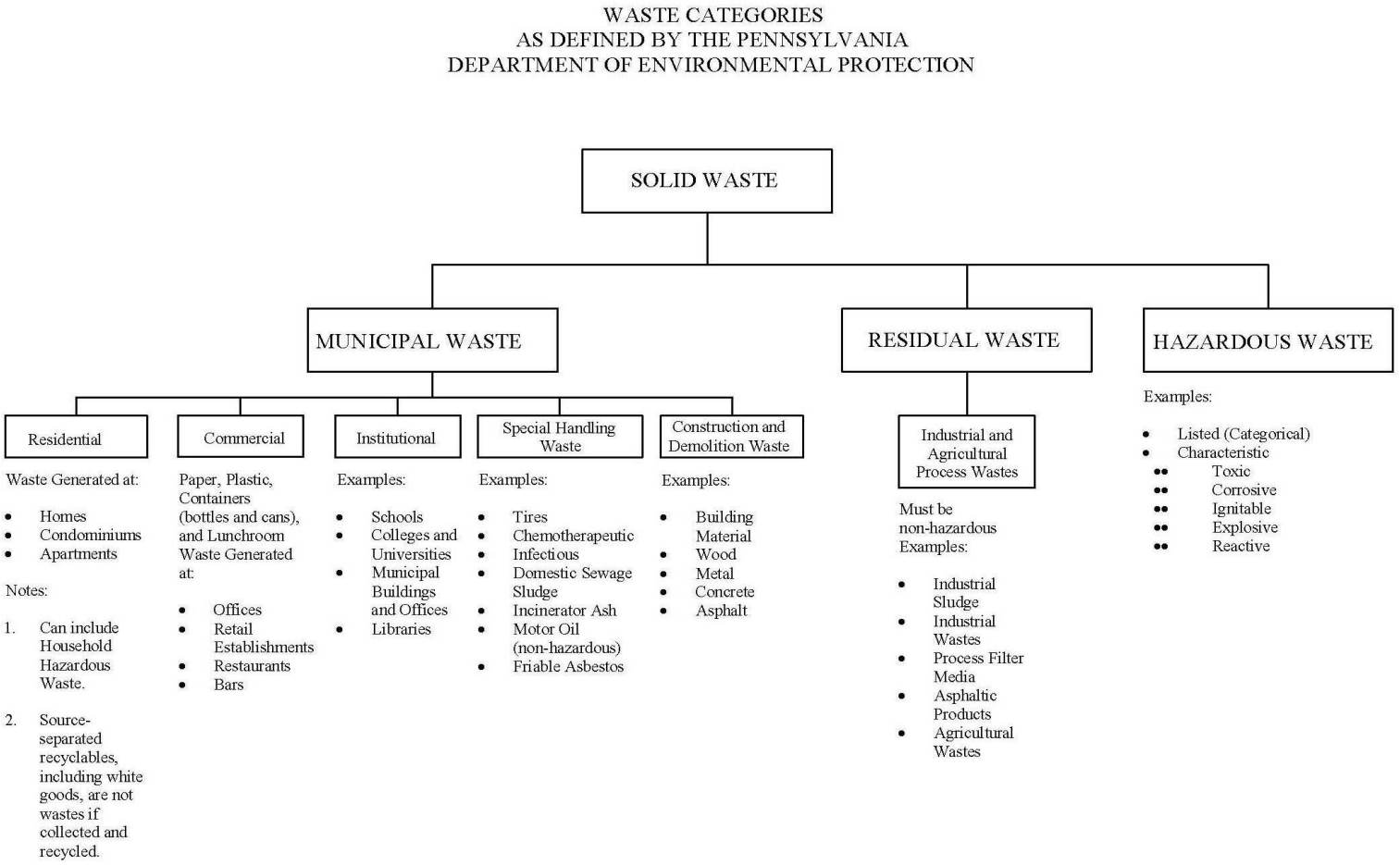
Sewage sludge is a “Special Handling Waste” as further defined in Paragraph 1.3.1.3. The term “biosolids” is commonly used to describe sewage sludge and is used interchangeably within this Plan.

Construction/demolition waste is defined in 25 Pa. Code §271.1 of the Regulations as:

> "solid waste resulting from the construction or demolition of buildings and other structures, including, but not limited to, wood, plaster, metals, asphaltic substances, bricks, block and unsegregated concrete. The term does not include the following if they are separate from other waste and are used as clean fill:
>
> (i) Uncontaminated soil, rock, stone, gravel, brick and block, concrete and used asphalt. (The PADEP, Bureau of Waste Management, has a detailed technical guidance document, no. 258-2182-773, for dealing with the management of fill).
>
> (ii) Waste from land clearing, grubbing and excavation, including trees, brush, stumps and vegetative material.

The term "construction/demolition waste" encompasses a broad variety of materials. It can include highly inert materials such as concrete; decomposable organic materials, such as wood; or, items with potentially harmful constituent materials such as a boiler. Municipal waste landfills may accept construction/demolition waste without any special modifications or other additional permit requirements. Also, a landfill may be permitted exclusively as a construction/demolition waste landfill. Design requirements for such facilities are nearly as stringent as for municipal waste landfills.

Figure 1-3
Waste Categories



1.3.1.3 Special Handling Wastes

Within the above municipal waste classes are certain waste materials, which because of their quantity or unique physical, chemical, or biological characteristics, are subject to additional PADEP storage, collection, transportation, processing or disposal requirements. Sewage sludge is defined by PADEP as a special handling waste. The other wastes classified by PADEP as special handling waste are dredged material, infectious waste, chemotherapeutic waste, ash residue from municipal waste incinerators, friable asbestos containing waste, PCB containing waste, and waste oil that is not hazardous. A "permit modification" is required by a municipal waste facility to receive special handling wastes for disposal from a specific source.

1.3.2 Source-Separated Recyclable Materials

Source-separated recyclable materials are defined under 25 Pa. Code §271.1 of the Regulations as:

> "materials that are separated from municipal waste at the point of origin for the purpose of recycling." The term is limited to clear glass, colored glass, aluminum, steel and bimetallic cans, high-grade office paper, newsprint, corrugated paper, plastics, and other marketable grades of paper." (Please refer to Figure 1-3 and Sections 1.7 – 1.11 of this Chapter, as well as Chapter 3 – Recycling Strategy, for a list of other items that are commonly recycled, but that are not addressed by Act 101).

These materials are not subject to regulation as municipal waste.

1.3.3 Residual Waste

Residual waste is defined under 25 Pa. Code §271.1 of the Regulations as:

> "Garbage, refuse, other discarded material or other waste, including solid, liquid, semisolid or contained gaseous materials resulting from industrial, mining and agricultural operations; and sludge from an industrial, mining or agricultural water supply treatment facility, wastewater treatment facility or air pollution control facility, if it is not hazardous. The term does not

include coal refuse as defined in the Coal Refuse Disposal Control Act. The term does not include treatment sludges from coal mine drainage treatment plants, disposal of which is being carried on under and in compliance with a valid permit issued under the Clean Streams Law."

In short, residual waste is non-hazardous solid waste produced by industrial processes such as manufacturing, mining, and food processing and by agricultural operations.

Residual waste may be disposed at a permitted "captive" disposal facility (a disposal facility at the site of waste generation) or at a municipal waste landfill, provided the landfill has obtained a permit modification to accept the waste. The modification is approved on a case-by-case basis by the PADEP.

1.3.4 Hazardous Waste

Hazardous waste is defined in 25 Pa. Code § 271.1 of the Regulations as:

"Garbage, refuse or sludge from an industrial or other wastewater treatment plant; sludge from a water supply treatment plant or air pollution control facility; and other discarded material, including solid, liquid, semisolid or contained gaseous material resulting from municipal, commercial, industrial, institutional, mining, or agricultural operations, and from community activities; or a combination of the above which, because of its quantity, concentration or physical, chemical or infectious characteristics may do one of the following:

(i) Cause or significantly contribute to an increase in mortality or increase in morbidity in either an individual or the total population.

(ii) Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed."

Waste meeting the definition of hazardous waste is subject to the stringent regulations under the PA Solid Waste Management Act (Act 97), 25 Pa. Code, Chapters 260-270 and the federal Resource Conservation and Recovery Act

(RCRA). While municipal waste landfills may obtain permit modifications allowing them to receive residual waste, hazardous waste may only be accepted at permitted hazardous waste disposal facilities. Materials that would otherwise be regulated as hazardous waste are considered a municipal waste if generated in the household (i.e. household hazardous waste).

1.3.5 Focus of This Plan

This Regional Plan will focus on the conventional municipal solid waste fraction of the waste stream, and will consider special handling wastes separately from non-special handling waste. Construction and demolition wastes, which are also subject to different handling and disposal considerations from conventional waste, will likewise be examined separately. This Regional Plan will also separately consider household hazardous waste, and will acknowledge the quantities of residual waste generated and disposed.

In summary, the Regional Plan will examine each of the following, with primary emphasis on the first category in accordance with 25 Pa. Code Chapter 272:

(1) Residential, commercial, and institutional waste - (i.e. municipal solid waste),

(2) Sewage sludge,

(3) Construction and demolition waste,

(4) Infectious and chemotherapeutic waste,

(5) Household hazardous waste, and

(6) Residual waste.

1.4 Municipal Solid Waste Generation

This section presents projected quantities of municipal solid waste generated by Mifflin and Juniata Counties, and summarizes the method used to develop these projections.

1.4.1 Overview of Estimating Method

The quantity of municipal waste generated in the Region, as reported to PADEP in year 2012 and 2013, population estimates from the US Census Bureau, Mifflin County Comprehensive Plan, and the Juniata County Hazard Mitigation Plan were used to calculate the current per capita rate of municipal solid waste generation in the Region. Table 1-5 identifies the tons of waste received at disposal facilities from the two-county Region between 2007 and 2013, based on PADEP Waste Destination Reports.

A review of the information presented in Table 1-5 shows wide variations in the quantities of waste reportedly disposed of from Mifflin and Juniata Counties. Several factors likely result in these variations. First, county of origin of waste destination is reported to disposal sites (and ultimately, to PADEP) by the waste haulers using the "honor system." There appears to be a chronic issue in Juniata County of waste being mis-identified, from year to year, as to county of origin by certain waste haulers serving Juniata County and directly hauling municipal waste to disposal sites. Secondly, all waste that goes through the MCSWA Transfer Station is identified as Mifflin County waste when it is delivered to disposal sites by transfer trailers, regardless of actual county of origin; this is a common practice by transfer stations in Pennsylvania, but it sometimes results in a mis-labeling of waste by actual county of origin. Third, the 2007 economic downturn in the U.S. has resulted in a significant drop in waste generation in recent years (2009-2011), as 1) new construction in the U.S. has significantly slowed, resulting in less C&D waste being generated, and 2) consumers are "consuming" less goods (due to job loss and/or more thrifty spending habits), resulting in less waste materials being generated. As the economy began to strengthen, waste tonnages began to increase (i.e. recover) in 2012 and 2013. The combination of these three factors, along with the recent tonnage recovery, has resulted in wide fluctuations in the amount of municipal waste (including C&D waste) being produced and/or reported by Mifflin and Juniata Counties, as presented in Table 1-5. Still, this information is the best waste generation planning information currently available for long-range solid waste planning purposes in the Region, so this data is being used in this Regional Plan Update, until better data becomes available for analysis. It is believed the Regional waste tonnage disposal capacities are representative of the waste generated and disposed of by the Region.

To estimate gross generated municipal waste discards (i.e., before the waste-reducing effects of recycling and composting are considered), the tons of material diverted through recycling and composting in year 2012 were added to the total MSW tons disposed (including C&D waste). The term "gross discards," as used in this report, represents the quantity of waste generated by sources of waste (such as households, businesses, schools, etc.) before any recycling (i.e. diversion from a disposal site) has taken place. The term "net discards" represents the remaining fraction of the wastestream that is disposed of, after recycling has occurred. The tons of waste actually being landfilled or incinerated are the net discards from the Region. Waste projections in this report are made on the basis of gross discards from waste-generating sources and on the number of people that generate this waste. The term "waste diversion rate" represents the amount of recycling that is occurring, as a percentage of the gross discards generated by the Region. The higher the waste diversion rate (i.e. recycling rate), the less waste that has to be landfilled or incinerated.

The combined 2012 data for the two-county Regions is as follows: the Year 2012 Act 101 Annual Report for the Region estimates that 17,715 tons of materials were recycled in the Region. This quantity of recycled materials represents approximately 28% of the gross quantity of municipal waste, including C/D waste and recyclables, generated in the Region in 2012. The resulting figure of 62,254 tons [43,767(MSW) + 772(C/D) + 17,715(recycling)] approximates the gross discards of waste materials from the two-county Region in 2012. Recycling tonnages used to estimate future projections include all materials reported through the DEP's Re-TRAC program, and include materials beyond the standard list of eight (8) recyclable items in Act 101, except rubber tires in Juniata County. Juniata County currently reports annual tonnages of rubber tires recycled from a local industry. Due to the nature of the industry, it is assumed that the total tons of recycled rubber tires are not originating from Juniata County and therefore have been excluded from the estimating method in order to obtain more accurate recycling projections based on County population generation. A complete list of the recycled materials that is included in the Re-Trac program reports for the two counties are presented in Appendix C.

Using year 2010 gross waste quantity estimates for the Region and the year 2010 Regional population from the US Census Bureau, the gross municipal waste generation rate in the Region has been calculated at 0.849 tons per capita

per year, rounded to 0.9 tons per capita per year for planning purposes. This generation rate excludes residual waste, sewage sludge (i.e., biosolids) and other special handling waste. This per-capita gross waste generation rate (0.9) is used for projecting future gross waste generation totals from the Region (prior to the waste reduction effects of recycling and composting).

The estimated year 2015 gross discards of municipal solid waste generated by each municipality in Mifflin County and Juniata County, using the 2010 per-capita gross waste generation rate for each County, are presented in Table 1- 6 and Table 1-7. Using this per capita waste generation rate, together with the population projections, the gross (before recycling and composting) discards can be estimated for each County.

Projected gross discards were calculated by applying the current per capita waste generation rate for the Region to population projections, assuming population growth in the two-county Region as reported in Tables 1-3 and 1-4. The projected net discards requiring disposal were calculated by projecting the Region's gross discards over the next twenty years and then subtracting projected rates of diversion (estimated by a change in percentage diversion over time) resulting from waste reduction and recycling. Table 1-8 presents projected gross and net discards for the Region between 2012 and 2030.

Table 1-5
MSW Generated Within the Region
And Disposed Of at Disposal Facilities (2007-2013)[1]

	County	Municipal Waste (tons)	C&D Waste (tons)	Sewage Sludge[2] (tons)	Other Special Handling Waste (tons)	Residual Waste (tons)	Total Waste Receipts Disposed by County (tons)	Total Waste Receipts Disposed by Region (tons)
2007	Mifflin	41,102	1,203	2,040	909	4,816	50,069	67,645
	Juniata	6,118	0	1,911	7	9,540	17,576	
2008	Mifflin	38,613	268	652	40	5,555	45,127	54,013
	Juniata	2,609	52	1,507	11	4,707	8,885	
2009	Mifflin	36,025	100	1,068	44	1,035	38,271	43,901
	Juniata	1,700	27	1,052	1	2,849	5,630	
2010	Mifflin	37,772	400	1,652	14	222	40,061	42,576
	Juniata	222	0	1,545	0	748	2,516	
2011	Mifflin	41,570	149	818	78	993	43,608	45,413
	Juniata	363	124	892	3	422	1,805	
2012	Mifflin	43,589	485	677	37	2,421	47,209	48,606
	Juniata	178	287	361	1	571	1,397	
2013	Mifflin	39,925	316	1,412	74	1,741	43,468	47,868
	Juniata	168	391	0	0	3,841	4,400	

(1) PADEP - County Waste Destination Reports – 2007-2013.

Only landfilled sewage sludge quantities are listed.

Table 1-6
Mifflin County
Projected Gross Discards by Municipality
(Municipal Waste, Before Recycling & Composting, Tons/Year 2015)

Municipality	2015 Population[(1)]	Gross Discards[(2)] (tons per year)
Armagh Township	3910	3,519
Bratton Township	1,340	1,206
Brown Township	4,100	3,690
Burnham Borough	2,090	1,881
Decatur Township	3,180	2,862
Derry Township	7,420	6,678
Granville Township	5,170	4,653
Juniata Terrace Borough	560	504
Kistler Borough	340	306
Lewistown Borough	8,430	7,587
McVeytown Borough	360	324
Menno Township	1,910	1,719
Newton Hamilton Borough	220	198
Oliver Township	2,210	1,989
Union Township	3,500	3,150
Wayne Township	2,590	2,331
Totals	47,330	42,597

(1) 2010 Population based on U.S. Census Data; 2015 population data interpolated from Mifflin County Comprehensive Plan 2014

(2) Based on 0.9 tons per capita waste generation rate using population projections (refer to Table 1-3). Numbers are rounded

Table 1-7
Juniata County
Projected Gross Discards by Municipality
(Municipal Waste, Before Recycling & Composting, Tons/Year 2015)

Municipality	2015 Population[(1)]	Gross Discards[(2)] (tons per year)
Beale Township	870	783
Delaware Township	1,620	1,458
Fayette Township	3,630	3,267
Fermanagh Township	2,930	2,637
Greenwood Township	650	585
e	820	738
Mifflin Borough	670	603
Mifflintown Borough	980	882
Milford Township	2,180	1,962
Monroe Township	2,330	2,097
Port Royal Borough	970	873
Spruce Hill Township	870	783
Susquehanna Township	1,310	1,179
Thompsontown Borough	730	657
Turbett Township	1,030	927
Tuscarora Township	1,300	1,170
Walker Township	2,860	2,574
Totals	25,750	23,175

(1) 2010 Population based on U.S. Census Data; 2015 population data interpolated from Juniata County Hazard Mitigation Plan 2013.

(2) Based on 0.9 tons per capita waste generation rate using population projections (refer to Table 1-4). Numbers are rounded.

Table 1-8
Regional
Projected Gross And Net Discards Of MSW
(2012 - 2030)

Year	Population[2]	Gross Discards (tons)[1]	Diversion Rate[3]	Net Discards (tons)[4]	Waste Diverted to Recycling (tons)[5]
2010	71,318	62,317	38	38,394	23,923
2012	71,924	62,254	28	44,539	17,715
2013	72,211	56,700	28	40,800	15,900
2014	72,529	65,276	28	46,996	18,280
2015	72,920	65,628	28	47,248	18,380
2016	73,232	65,909	28	47,449	18,460
2017	73,547	66,192	28	47,652	18,540
2018	73,863	66,476	28	47,856	18,620
2019	74,180	66,762	28	48,062	18,700
2020	74,306	66,875	29	47,475	19,400
2021	74,566	67,109	29	47,639	19,470
2022	74,824	67,341	29	47,811	19,530
2023	75,083	67,575e	29	47,975	19,600
2024	75,344	67,809	29	48,139	19,670
2025	75,606	68,045	30	47,625	20,420
2030	76,861	69,175	35	44,955	24,220

(1) Year 2010 Gross Discards ÷ 2010 Census Population = 0.9 tons per capita. Assumed a constant for projections.

(2) 2010 population based on U.S. Census data. 2020 and 2030 Population Projections for Mifflin County: Mifflin County Comprehensive Plan 2014, for Juniata County: Juniata County Hazard Mitigation Plan 2013. Remainder of population projections are interpolation/extrapolation projections based on 2020 and 2030 Population Projections.

(3) 2010 diversion rate based on Mifflin County Annual 2010 Recycling Report. 2012 through 2030 diversion rate estimated to steadily increase to 35 percent recycling rate.

(4) Net Discards = Gross Discards × (100% - Diversion Rate). Tonnages are approximate.

(5) Gross Discards - Net Discards = Waste Diverted to Recycling. Tonnages are approximate

The types and amounts of materials recycled during the past five years (2008-2012) are presented in Appendix C in two different ways: as a summary across the Region and by individual County. A summary of that information is shown in Table 1-9, below.

Table 1-9
Regional Materials Recycled (Tons)[1]
2008-2012

Type of Material[2]		2008	2009	2010	2011	2012
Recycling Totals	Mifflin County[3]	19,884	20,203	21,936	15,337	16,770
	Juniata County	16,271.9	3,660	1,986	993	945
	TOTAL	**36,155.9**	**23,863**	**23,923**	**16,329**	**17,715**
Act 101 Material	Mifflin County[3]	4,921.4	3,801	4,532	4,680	4,779
	Juniata County	945	749	755	715	703
	TOTAL	**5,866.4**	**4,550**	**5,287**	**5,395**	**5,482**
Non-Act 101 Material	Mifflin County[3]	14,962.6	16,402	17,404	10,657	11,992
	Juniata County	15,326.9	2,912	1,231	278	242
	TOTAL	**30,289.5**	**19,314**	**18,635**	**10,935**	**12,233**

(1) Information obtained from Re-TRAC reports (2008-2012) for both Mifflin and Juniata County. Act 101 materials refers to a common list of recyclable materials listed in Act 101 from which "mandated municipalities" (based on population and /or density) must select at least three types to recycle. The Act 101 list includes clear glass; colored glass; plastics; steel and bi-metal cans; aluminum cans; newsprint; corrugated cardboard; and high-grade office paper. Non-Act-101 material refers to other components of the municipal waste stream (beyond the list of eight (8) common Act 101 recyclable commodities) that are recycled.

(2) Included in the totals are all materials reported to DEP through the Re-TRAC program. No materials were excluded in these calculations. Data for Juniata County Year 2013 was not available at the time of development

(3) Totals include Lewistown Borough's recycling tonnages.

The table shows the Region has remained fairly consistent in the materials recycled throughout the past five years, with 2011 having the lowest reported recycling tonnages in this time frame for the two-county Region. The Region has consistently recycled materials beyond the list of eight recyclable commodities identified in Act 101, as shown in the Re-Trac Reports presented in Appendix C.

Using the data obtained from the MCSWA Reports and the PADEP website (see Table 1-5), the amount of municipal waste disposed in landfills (excluding C&D waste) by the Region in 2012 was approximately 43,767 tons. The population in 2012 in the two-county Region, based on the 2010 US Census Bureau and information from the Mifflin County Comprehensive Plan and Juniata County Hazard Mitigation Plan, was 71,930. This results in a net (after recycling) municipal waste landfill disposal rate of approximately 0.65 tons per person per year.

This data and Table 1-9 show a significant effort in the Region towards recycling, based on thousands of tons of materials recycled annually. It is noted, however, that PADEP no longer publishes recycling rates since they are difficult to compare across counties, and may present an inaccurate picture of what is actually happening in an area. The tons of recovered recyclables may decrease at the same time that the actual effort and quantity of recycling containers recovered increases. For example: heavy glass containers and glass bottles have, in large part, been replaced by lighter plastic containers, and even the plastic containers themselves are becoming lighter in recent years; newspaper readership is significantly down, as the public shifts to on-line electronic sources of news, thus reducing the demand and production of this base recyclable commodity; there is an increased emphasis on special programs such as electronics collections, tires, household hazardous waste, pharmaceuticals, and other hard-to-recycle items, some of which may weigh less but contain larger amounts of toxic or unhealthy materials. In addition, recycling rates include items which were recycled prior to the passage of Act 101, or without any effort on behalf of the municipal recycling programs, such as scrap metals, cardboard and other commercial materials from large generators, which are typically under-reported or unreported.

Estimates from the Region show that the designated materials in Act 101 are collected in each County. Newspapers, magazines and catalogs, glass bottles and jars, plastic bottles, and aluminum and steel cans, along with various types of yard waste, are all collected both through curbside and drop-off programs.

1.4.2 Municipal Waste Composition

The Region's municipal waste stream, exclusive of construction/demolition waste and sewage sludge, is estimated here using results from a previously completed statewide waste composition study in Pennsylvania. A waste composition study identifies the percentage of the total waste stream comprised of various types of materials. An April 2003 waste composition study was conducted by R.W. Beck for the Pennsylvania Department of Environmental Protection (PADEP). This study offers the results of Pennsylvania waste sorts completed in 2001-2002, to determine the types of materials in the typical Pennsylvania waste stream by volume and by weight. The study also designated these findings into the six geographic regions of Pennsylvania. A summary table of this study, correlating this study to the two-county Region's waste stream is located in Table 3-1 in Chapter 3.

1.5 Construction and Demolition Waste Generation

The total quantity of construction and demolition (C&D) waste disposed that was generated in the Region in 2012 was 772 tons, according to PADEP County Waste Destination Reports, or approximately 0.011 tons per capita per year. Construction and demolition waste from this Region was taken to the following facilities in 2012: Clinton County (Wayne Township) Landfill, Cumberland County Landfill, Lycoming County Landfill, Sandy Run Landfill and the Mifflin County Transfer Station. C&D waste generation drastically declined in 2008. Although the economy is on the rise, C&D waste generation is expected to maintain its reduced generation and is expected to mirror the Region's slow population growth over the planning period. C&D generation decreased from approximately 3,943 tons in 2010 to approximately 772 tons in 2012. It is expected to further decrease to approximately 743 tons in year 2020, prior to increasing to 753 tons in 2025 (at 0.011 tons per capita per year).

It should be noted that C&D materials such as wood, bricks, concrete, and asphalt are potentially recyclable. An undetermined/ unreported volume of C&D waste materials may also have been diverted from the Region's wastestream through recycling, reuse or illegal disposal via burning or dumping.

1.6 Sewage Sludge Generation

Mifflin County has eight operating municipal wastewater treatment/ collection systems and two non-municipal wastewater collection systems. The Wayne Township WWTP and the Mifflin County School District WWTP were decommissioned in March of 2011 and in 2009, respectively. Juniata County has five operating municipal treatment/ collection systems and one non-municipal collection system. Combined, these treatments and collection systems service all or part of 22 municipalities in the Region, see Table 1-10.

In order to obtain data on each source of sludge generation, municipal wastewater sludge surveys were sent to identify municipal and non-municipal wastewater treatment plants in the Region. Wastewater survey results are presented in Chapter 2.

Table 1-10
Regional Municipalities Serviced By Local WWTPs

Name	Area Serviced[1]
Brown Township WWTP	Armagh Township, Brown Township
Burnham Borough WWTP	Burnham Borough, Derry Township
Granville Township WWTPs	Juniata Terrace Borough, Granville Township, Oliver Township
Lewistown Borough WWTP	Lewistown Borough, Derry Township, Granville Township
Bratton Township WWTP	Bratton Township
McVeytown Borough	McVeytown Borough, Oliver Township
Wayne Township WWTP (now going to Mount Union Borough WWTP)	Kistler Borough, Newton Hamilton Borough, Wayne Township
Union Township	Union Township
Port Royal Sewer and Water Authority	Port Royal Borough
Thompsontown Municipal Authority	Thompsontown Borough, Delaware Township
Twin Boroughs Sanitary Authority	Mifflintown Borough, Mifflin Borough, Fermanagh Township, Walker Township, Milford Township

(1) Data obtained from the Mifflin County Public Sewer Plan (2008) and the 2003 Juniata County Municipal Solid Waste Management Plan.

1.6.1 Municipal Wastewater Treatment Facilities

At present, Mifflin County has eight operational municipal wastewater treatment facilities. The total design capacity of the municipal facilities is 5.289 million gallons per day (MGD). Combined, the eight operating facilities treat an average of approximately 5.0 MGD of wastewater, based on 2010 projections in the 2008 wastewater treatment plant survey data. These facilities are estimated to be at 94 percent of total design capacity. The Wayne Township municipal wastewater treatment facility was decommissioned in March of 2011. It was reported in 2008 that the flow from the Wayne Township municipal wastewater treatment facility would be conveyed to the Mount Union wastewater treatment facility in Huntingdon County. Since the Mount Union wastewater treatment facility is located in a County outside of this Regional Plan, information related to this wastewater treatment facility has not been included in this Plan.

The total quantity of sludge produced from the municipal treatment facilities in Mifflin County in 2005 was 6.95 dry tons per week or 1.39 dry tons per day (DTPD-5) based on a five-day work week. The estimated quantity of sludge produced from the municipal treatment facilities in 2010 was 8.75 dry tons per week or 1.75 dry tons per day (DTPD-5). Increases in sewage sludge projection can be attributed to greater wastewater flow quantities (tied to a growing population, in general), increased business/ industry discharges to the public sewers (through growth of the businesses), expansion of sewer service areas (serving greater populations), and more sophisticated treatment measures that generate greater quantities of sludge. The central region of the County generates the majority of the sewage sludge within Mifflin County.

Similar planning information on sludge generation in Juniata County is not available at this time, and the wastewater treatment plants in Juniata County had a poor response to the questions that were asked of them in response to a survey that was conducted as part of this Regional Plan Update.

1.6.2 Non-municipal Wastewater Treatment Facilities

In addition to the municipal treatment/collection systems in Mifflin County, there are also two non-municipal sewage treatment systems. These systems serve a recreational facility (Reeds Gap State Park) and a campground for the blind

(Beacon Lodge Camp). Approximately 0.14 DTPD-5 of sludge is produced by these two facilities.

In addition to the municipal treatment/collection systems in Juniata County, there is also one non-municipal sewage treatment system. This system serves Empire Kosher Poultry's process wastewater (Empire Kosher's sanitary wastewater flows to the Twin Borough's WWTP via connection to the public sewer). Approximately 10 DTPD-5 of sludge is produced by this private facility.

1.6.3 Septage

Septage generated in the Region must be disposed of at a permitted disposal site. Disposal sites receiving septage from the Region include: permitted agricultural fields and municipal wastewater treatment facilities. Municipal wastewater treatment plants currently accepting septage include: Granville Township, Union Township, and McAlisterville Area Joint Authority. Lewistown Borough is able to accept septage, but has not had a load of septage in over eight years. To lessen the problem of locating septage disposal sites, municipal wastewater treatment plant operators are encouraged to accept septage from their municipal service areas.

1.6.4 Septage Quantity Estimates

To determine the volume of septage produced in the Region, a number of factors were considered: total number of housing units with septic systems, number of persons per housing unit, and the size of the septic tank. According to the Pennsylvania State University's Agricultural Engineering Fact Sheet – Septic Tank Pumping (SW-40), a 900-gallon tank is the average size required by municipal regulation. Based on this fact sheet, a 900-gallon septic tank servicing a household of three persons should be pumped every 3.3 years.

Using information from the US Census Bureau, 2005-2009 Community Survey Estimates, for Mifflin and Juniata County, there are a total of 32,515 residential housing units in the Region, 28,219 of which are occupied. It is estimated that 48% of the total housing units in the Region (occupied and vacant) are connected to or have access to public sewer service. Therefore, an estimated 15,607 total housing units have public sewer service (13,544 units occupied),

and a total of 16,908 housing units have on-lot sewer systems (14,675 units occupied) in the Region.

The average number of people per occupied housing unit in the Region is about 2.53 (71,318 Year 2010 census pop./28,219 occupied housing units). Using this information, it is estimated that 37,128 people in the Region currently use on-lot sewer systems (14,675 occupied units with on-lot systems x 2.53 people per occupied unit), which represent approximately 52% of the Regional population.

Using 2.53 people per occupied housing unit on septic systems in conjunction with the Agricultural Engineering Fact Sheet, a 900-gallon septic tank in the Region should be pumped every 3.9 years. If this pumping frequency is applied to all septic systems in the Region, it is estimated that an average of approximately 3,387,000 gallons of septage would be pumped annually from septic tanks in the Region (14,675 septic systems x 900 gallons/ 3.9 years pumping frequency). This is equivalent to about 91 gallons of septage generated per capita per year for residents, within the Region, for those served by septic systems.

1.6.5 Septage and Sludge Projections

Using the Regional population projections from Tables 1-3 and 1-4, assuming a constant percentage of the Regional population served by septic systems in the future (52%), and assuming a constant per capita septage generation rate (91 gallons per capita per year for residents on on-lot systems), projections of septage pumpings from the Region are expected to grow from 3,387,000 gallons in 2010, to 3,515,000 gallons in 2020, to 3,607,000 gallons of septage by 2030.

1.7 Infectious and Chemotherapeutic Waste

Infectious and chemotherapeutic waste (ICW) constitutes a very small portion of the municipal waste generated in the Region. Over the past five years, no Regional disposed tonnages have been reported for infectious and chemotherapeutic waste in PADEP Waste Destination Reports. For this plan update, a survey was conducted of the major infectious/chemotherapeutic generators in the Region.

The principal generators of infectious and chemotherapeutic waste in the Region are Lewistown Hospital and the Geisinger Clinic. Those two facilities, plus other County-related medical facilities generate the overwhelming majority of infectious and chemotherapeutic waste in the Region. Contaminated bandages, wound and skin dressings, sharps, solid gloves, body fluids and wastes, vacutainer tubes, x-ray chemicals and surgical equipment are some of the common materials reported as infectious and chemotherapeutic waste types. Based on the results from the survey, this waste is typically collected and disposed of by PADEP-licensed infectious waste collectors, and over 57 tons of this waste was generated in the two-county Region in 2010.

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 PADEP). Because of its chemical or biological nature, it is potentially hazardous to humans and the environment. The U.S. Environmental Protection Agency (EPA) classifies waste as hazardous if it is toxic, corrosive, ignitable or reactive. There are numerous federal and state statutes which regulate hazardous wastes, but the disposal of hazardous waste from households is exempt from these regulations. PADEP requires that HHW be addressed in County solid waste plans. Currently, neither Mifflin nor Juniata County currently conducts a household hazardous waste collection program, although special collection events in both Counties are in the planning process.

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 compliance with 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 have 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 requires any transporter of hazardous waste to be a licensed hazardous waste transporter in the state of Pennsylvania. A list of licensed haulers can be found at this website, which is updated monthly:

http://www.portal.state.pa.us/portal/server.pt/community/transportation/14081

Under the hazardous waste collection program through PADEP, Mifflin and Juniata County would be eligible for 50 percent reimbursement of all costs of the program.

1.9 Electronic Waste

Starting in January 2013, the disposal of electronic items will not be allowed in the municipal waste stream. In lieu of the new regulations, Mifflin and Juniata Counties have been proactive in establishing outlets for electronic waste generated within the Region.

The Mifflin County Solid Waste Authority is currently utilizing JVS Environmental, an electronics waste recycler, to start a collection program at the Authority's Transfer Station. Chapter 3 – Recycling Strategy contains a discussion of the 2010 PA Covered Devices Recycling Act and the status of electronics recycling programs in the Region.

1.10 Residual Waste

The quantity of residual waste generated in the Region was determined by reviewing the PADEP County Waste Destinations Reports from area landfills. The total tonnage of residual waste disposed at approved disposal facilities in 2012 was 2,992 tons. Additional quantities of residual waste from the Region may be disposed in captive facilities owned by private industry, or in other disposal sites located out-of-state.

1.11 Waste Tires

Proper disposal of waste tires is a particular planning concern for the Region because of the large number of existing illegal dumpsites that continue to attract illegal dumping of tires and other waste. The MCSWA Transfer Station accepts car & light truck tires at $3.00 each off the rim and $4.00 each on the rim. The Authority also accepts tires collected by Pa CleanWays from illegal dump cleanups for recycling. Tires received in quantities of 10 or more are charged by weight at a cost of $140.00 per ton. Tractor-trailer tires are $140.00 per ton regardless of quantity, but no industrial size tires are accepted by the landfill.

In 2010, 35.67 tons of waste tires were received by the MCSWA Transfer Station. The majority of these waste tires are processed by Mahantango Enterprises located near Liverpool, Pennsylvania. Mahantango operates two primary shredders to process the tires. After processing, the shredded material is further processed on site by melting and molding the rubber into playground rubber, fuel chips (burn), footings for horse arenas, crumb rubber moldings and a variety of other end products. A new production line was added to the site that reclaims approximately 99% of all the rubber and metal, which allows approximately 1% to require landfilling.

The total tonnage of waste tires recycled by residents of Juniata County in 2010 is unavailable, as most tires are taken to tire shops and garages for disposal. The majority of these waste tires are transported to Mahantango Industries in Susquehanna Township, Juniata County (near Liverpool, PA).

The MCSWA Transfer Station plans to continue to operate its recyclable material drop-off facility (including acceptance of waste tires). All recycling activities undertaken by MCSWA will continue to be performed in full compliance with applicable regulations, including those authorized under Act 111 (Waste Tire Hauler Authorization Act).

1.12 Leaf and Yard Waste

Mifflin and Juniata County municipalities collect leaf and yard waste through curbside collection and drop-off recycling sites. The MCSWA Transfer Station reported 132 tons of leaf and yard waste processed at their facility in year 2010,

based on Act 101 recycling reports. Generally, leaf and yard waste within Mifflin County is transported to the MCSWA Transfer Station for mulching and/or composting.

In addition, several other municipalities within the Region reportedly collect leaves (Burnham, Mifflintown and McVeytown Boroughs, Union and Brown Townships), but the tonnages collected are unavailable. McVeytown Borough reported that collected leaves are used to fill a landscape depression. Burnham Borough reported that collected leaves are either spread on the ground at the "Jamboree Grounds" or given to a resident(s) for gardening. Brown Township reported that collected leaves are transported to Metzler Forest Products where they mulch the leaves. Union Township also reported that collected leaves are delivered to a local farm field. Generally, these leaves are sent directly to farm fields where they are tilled into the soil, or given to residents for agricultural uses.

Obtaining the actual volume of leaf waste generated in Juniata County is difficult, because the material is used at many local sites throughout the County. Port Royal Borough, located in Juniata County, recycled a reported 2.4 tons of leaf waste in 2010. Much of the unreported leaf and yard waste generated in Juniata County is delivered to several local producers of mulch within the County.

The MCSWA Transfer Station plans to continue to operate its recyclable material drop-off facility (including acceptance of leaf and yard waste) and waste transfer operation. All recycling activities undertaken by MCSWA will continue to be performed in full compliance with applicable regulations. Chapter 3 – Recycling Strategy presents a detailed explanation of current MCSWA and other recycling programs in the Region.

2.0 Existing Waste Management System

It is necessary to understand the existing waste management system in Mifflin and Juniata counties because this knowledge will serve as a baseline from which to create alternative scenarios for future planning and waste management. The existing waste management system may be an indicator of existing problem areas and also an indicator of planning practices that are working well. 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 Region. Finally, Sections 2.3 - 2.8 describe the collection, processing, and disposal practices for construction/demolition wastes, special handling wastes and residual waste. Current recycling and yard waste composting activities are described in Chapter 3 - Recycling Strategy.

2.1 Municipal Solid Waste Collection

Waste collection and hauling in the two-county Region is primarily handled by four private hauling firms operating in 32 municipalities within the Region, and by municipal collection within the Borough of Lewistown. Within 29 of the Region's 33 municipalities, residents are responsible for arranging waste collection services with a private hauler using individual “subscription service”. The Boroughs of Juniata Terrace, Mifflintown and Mifflin contract with a hauler through the municipal bid process to provide waste collection services to their residents. The Borough of Lewistown provides collection of waste as well as curbside recycling within its corporate limits, using municipal equipment and crews. Based on the municipal surveys, only two (2) municipalities in Juniata County and seven (7) in Mifflin County have ordinances dealing with municipal solid waste collection. In November 2008, Mifflin County passed Ordinance #2, which mandated that all municipalities were required to adopt an ordinance requiring all waste regulated by the County Solid Waste Management Plan to be collected and disposed in a facility listed in the plan. The municipalities had three (3) years, under the ordinance, to enact this ordinance (i.e. until November 2011). It is not known how many municipalities in Mifflin County have complied with this ordinance to date; however, the survey results indicate that only seven Mifflin County municipalities have solid waste ordinances. This local ordinance requirement, to comply with the County ordinance, should be reinforced in this Regional Plan as part of Mifflin County’s Plan Implementation responsibilities.

Mifflin County Ordinance #2 of 2008 is located in Appendix D. Juniata County has adopted a similar ordinance, Ordinance 1 of 2011, which is also located in Appendix D.

A County can apply for grant money from the State to support recycling programs within their boundaries (as of January 2012, PADEP is not currently accepting Section 902 grant applications, but a new grant round is anticipated soon). For example, if a County applies for grant money to collect cardboard through drop-off programs in multiple municipalities within the County, each of those municipalities, in order to obtain any of the money or benefits from these grants, must have in place or pass an ordinance that outlaws burning of the Act 101 source-separated recyclable materials that the County is trying to collect (in this case, cardboard). If a municipality fails to enact an ordinance banning burning of the recyclable material that the County is trying to collect, the municipality will not be able to have a drop-off that was paid for using State grant money in their region or collect any money from the County awarded through the State grant program.

Table 2-1 lists the large, full-service refuse haulers currently operating in the Region. The four large private haulers identified in Table 2-1 disposed of approximately 28,000 tons, and the Borough of Lewistown disposed of 4,547 tons of waste from the Region, at the MCSWA Transfer Station in 2010. This combined total represents approximately 86% of the total delivered waste to the site in 2010 (37,732 tons). It is noted that 4,968 additional tons of municipal waste declared as of Juniata and Mifflin County origin (including sewage sludge and C/D) and residual waste were directly delivered to and disposed of at out-of-county disposal facilities in 2010.

In general, any full-service refuse hauler may provide residential, commercial, institutional, and residual waste collection and disposal services, and recyclables collection and processing services. The Region also has an additional 160 current small business haulers and over 300 regular cash customers that either provide disposal services to residents, businesses, and institutions within the Region, or that self-haul their wastes. Many of these haulers are very small private haulers that typically provide: general refuse hauling (i.e. residential or commercial); C&D waste collection, processing and disposal; and residual waste collection and disposal. Additionally, many private individual Mifflin County residents take their residential refuse directly to the Mifflin County Transfer Station, and some businesses haul their own waste to the MCSWA Transfer Station.

The Municipal Waste Planning, Recycling and Waste Reduction Act (Act 101), as regulated under Title 25 of the Pa. Code Chapter 272, mandates curbside recycling in communities with a population over 10,000, as well as in communities with a population of over 5,000 and with a density of 300 persons per square mile or more. Lewistown residents (the only Act 101-mandated municipality in the two-county Region) currently pay, on average, approximately $54 per household per quarter, for weekly "Pay-as-you-throw" collection of up to 2 bags of waste plus weekly curbside collection of source-separated recyclables.

Based on phone calls made during preparation of the Phase 1 report in 2009, it was determined that other non-mandated municipalities in Mifflin and Juniata Counties, whose residents are responsible to individually contract for waste disposal services with a waste hauler, paid a range of approximately $50.00 - $60.00 per quarter for these services in 2009. These services generally include weekly collection of three (3) or more bags of refuse, but usually don't include curbside collection of recyclables.

From recent (2011) surveys conducted as part of this Regional Plan, quarterly garbage-only collection service rates varied, from $42 (Juniata Terrace) to $60 (Union Township) per quarter in Mifflin County, and from $44 (Mifflintown Borough) to $105 (Fayette Township) per quarter in Juniata County.

Additional options are offered to residents of the Region that include weekly collection of fewer bags of refuse at a reduced cost. Non-mandated communities that bid for waste collection service, such as Juniata Terrace and Mifflin Boroughs, tend to have a lower waste collection rate ranging from $40.00 - $45.00 per quarter. These services generally include weekly collection of three (3) or more bags of refuse, but do not include recycling services. None of the non-mandated communities that have bid for waste collection service have included curbside recyclables collection as part of the contract (Mifflintown Borough recently bid for waste collection services, with an option to add curbside recyclables collection, but they elected not to include that option in their final contract). Under Mifflintown's new bid contract, Borough residents pay $44 per quarter for garbage-only collection service ($41 per quarter for single person households).

The waste disposal services offered at approximately $50 - $70 per quarter typically do not include recyclables collection. The waste disposal services that range in cost

from approximately $55 - $77 per quarter typically offer residents weekly collection of recyclables (or in the case of Cocolamus Creek Disposal (CCD) customers, includes two "buy-a-bag" recycling bag purchases per month). Currently, CCD, who operates in both Mifflin and Juniata Counties, offers residential single-stream curbside recyclables collection through its buy-a-bag program along certain routes in Juniata County only. Additionally, Park's Garbage Service, who operates within Mifflin County, also offers residential single-stream curbside recyclables collection to residents within portions of certain municipalities in Mifflin County. Park's and CCD's quarterly collection service rates vary based on the location of the customers in the Region.

Table 2-1
Regional Major Municipal Waste Haulers

Contact Information	
Cocolamus Creek Disposal Service, Inc. 31109 Route 35 North McAllisterville, PA 17049 717-463-2381 717-463-0031 FAX	Borough of Lewistown 2 East 3rd Street Lewistown, PA 17044 (717)-248-4206
Park's Garbage Service, Inc. P.O. Box 218 Mt. Union, PA 17066 (814) 542-4751 Borough of Lewistown (800) 486-4490	Worthy's Refuse, Inc. 2775 US Highway 522 South P.O. Box 305 McVeytown, PA 17051 (888) 542-3226
S&S Trash Service 418 East Freedom Avenue P.O. Box 374 Burnham, PA 17009 (717) 248-7145 (717)-242-8777	

2.2 Municipal Solid Waste Transportation, Processing, and Disposal

2.2.1 Transportation and Transfer Facilities

Generally, the majority of Mifflin County and Juniata County waste is hauled directly to the Mifflin County Solid Waste Authority's Transfer Station by large contracted waste haulers, by small haulers, and by individual homeowners. Currently, there are no other waste facilities within the two-county Region that accept municipal waste. There is a small amount of waste from western Mifflin County that is delivered to the Park's Garbage Service Transfer Station in Mt. Union, PA (Huntingdon County).

The Mifflin County Solid Waste Authority (MCSWA) was issued a PADEP Municipal Waste Management Permit No. 101668 on April 13, 2000 for a proposed (at the time) transfer station to serve the future needs of Mifflin County once the Barner Landfill closed. The transfer station was constructed in 2004-2005 and opened in October 2005, when the Barner Landfill closed. The transfer station is located on approximately 2.8 acres of the Authority's property, and is permitted separately from the closed Barner Landfill site (but deeded as part of the landfill property). The facility is permitted to transfer an average of 300 tons per day of municipal waste over a standard calendar quarter, with a maximum of 390 tons per day on any single day. The facility permit was renewed in 2010 for a 10-year period, through April 12, 2020.

Currently, this facility includes an upper level for waste collection vehicle unloading (i.e., the tipping floor) and a lower level bay for transfer trailer loading. The facility is a four bay, fully enclosed pre-engineered building. Approximately half of this facility is dedicated to waste handling, and the other half to recyclables processing. The first two tipping bays are reserved for waste dumping, sorting and transfer trailer loading. The third bay is a cash customer bay, and is also used to receive and screen recyclables-rich loads. The fourth bay is dedicated to recyclables drop-off container unloading and access to the recycling baler and other recycling operations. Waste collection vehicles hauling into the site use the landfill's existing scale for weighing, and out-bound transfer trailers utilize scales at the destination facilities. Axle scales located inside the trailer bay are used to generate shipping tickets, and to monitor load weights, and to optimize loads to control/ economize on transportation costs. Leachate

generated from the facility, primarily wash down water, flows by gravity to an oil/water separator and into a pump station wet well, where it mixes with the flow from the scales office, locker room, and truck wash area. The wastewater is then conveyed via the existing sewer system to the Derry Township Sanitary Sewer Authority's collection system. From there, it is ultimately conveyed to the Lewistown Borough Wastewater Treatment Plant for treatment and discharge to the Juniata River.

From an operations standpoint, waste collection vehicles cross the truck scale, then loop around and enter the transfer station via the paved access roads, and back into one of the transfer station hall bays. Once inside the transfer station, the waste load is dumped onto the floor where it is screened for non-acceptable waste and easily recoverable recyclable materials that had not been previously diverted from the waste stream. The empty waste collection truck crosses the truck scale again, and its tare weight is measured and the payload of waste is determined.

The recyclable materials recovered from the tip floor are temporarily stored in a designated area, typically the third bay, for later processing. The deposited wastes are then compacted by a front-end loader, and are then pushed into the transfer trailer located in the bay below. A small tracked excavator is used to tamp the trailer loads down to achieve maximum weight. Once full, the loaded transfer trailer is tarped and connected to a yard tractor for delivery to the trailer staging area. Here, the trailer is picked up by an outside trucking company and delivered to the destination disposal facility. An empty transfer trailer replaces the loaded trailer in the trailer loading bay.

2.2.2 Description of Regional Processing and Disposal Facilities

The recycling function of the Transfer Station and Recycling Depot as described includes the receipt of "rich loads" of recyclable materials, the floor-sorting for easily recoverable recyclables (described above), and the processing of drop-off containers containing segregated recyclables from sites across Mifflin county. Recyclables materials are consolidated, baled, and loaded onto a trailer for shipping to intermediate or final markets. The Authority has also begun assisting Lewistown Borough with the baling and shipping of Borough recyclables.

As required by PADEP at any municipal waste transfer station, the MCSWA Transfer Station also includes recyclable material drop-off containers for residents to drop off these items. Typical recyclables accepted at the Transfer Station's public recycling area include newspaper, general mixed paper (including magazines), scrap metal, clear glass jars, brown glass jars, tin food containers, aluminum food/ soda cans, corrugated cardboard, plastic #1 and #2 bottles, rechargeable batteries, CFL bulbs, yard waste (leaves, grass and brush), used tires, and white goods (appliances).

MCSWA has a PADEP permit to conduct an electronic recycling drop-off program. MCSWA went public on December 1, 2011 with a public e-waste recycling program, and is installing a roofed area near the on-site public recycling bins, to use as a drop-off for e-waste. See Section 3.2.17 – Electronics in Chapter 3 of this Plan for a further description of the e-waste program. Appendix E contains information regarding the new legislation affecting MCSWA's e-waste management efforts, as well as guidelines for electronics collection based on the new regulations.

The site also has a "clean fill area" where material that meets the PADEP criteria for "clean fill" is accepted (see Chapter 1, Section 1.3.1.2). In addition, areas for acceptance of non-shredded brush and leaf/shredded yard waste (no grass) are also provided. A yard waste processing area on the MCSWA site is approved under a PADEP "Permit By Rule," and its processing details are being modified for consistency with this PADEP approval. A copy of the Permit by Rule approval is included in Appendix F.

The Barner Landfill was closed in the fall of 2005. In accordance with PADEP, the landfill was closed and capped, and is now in year six of a mandatory 30-year post closure monitoring period. Authority staff conducts post-closure services directly, and also contracts for specific outside support as needed.

2.2.3 Illegal Dumping Activities in the Region

Like most counties in Pennsylvania, illegal dumping is prevalent in rural areas of Mifflin and Juniata counties. While most would view illegal dumps as eyesores, they also create significant concerns for public health and safety, property values, and the general quality of life. When they are ignored, these sites often

become chronic dumping areas and pollute the soil, surface water, and groundwater, and can create potential vector problems. Preventing illegal dumping will require the counties to address factors that contribute to this problem. Cleaning up existing dumps will require cooperation from residents, businesses, haulers, and disposal facilities in the area. In 2011, MCSWA assisted PA CleanWays by offering discounted pull fees on containers used to clean up registered illegal dumpsites within the County.

Pennsylvania, and counties like those in the Region, may have a more severe problem because of the large number of municipalities that manage residential waste through individual subscription systems. In these municipalities, some residents choose to dump their waste illegally rather than pay for a hauler to collect their waste and dispose of it properly. However, there are other factors that contribute to the problem. Some haulers will not collect what might be considered construction and demolition waste generated at the residential level, as a result of remodeling and similar activities – materials such as drywall, roofing, shingles, siding, lumber, bricks, and concrete. Other difficult-to-dispose-of items such as tires, auto parts, appliances, and furniture also often end up in illegal dumps. Proper disposal of these materials may require hauling them to a disposal facility during operating hours and paying to dispose of them, an inconvenience or expense that some wish to avoid.

PA CleanWays is a non-profit organization that works to eliminate illegal dumping and littering. PA CleanWays began surveying illegal dump sites in 2005. The company's goal is to survey the entire state of Pennsylvania by 2014. Illegal dumpsites pose a direct threat to the health and safety of humans and animals. Illegal dumping attracts disease-spreading vectors, such as rodents and mosquitoes, by giving them a place to live and breed. West Nile Virus, carried by mosquitoes, has been a primary concern of environmental officials. Illegal dumps also can be a source of physical injury for humans and animals due to broken glass, rusty metals, and toxic substances. Methamphetamine labs, used to produce the illegal drug crystal meth, are becoming more and more common. The materials used to make the illegal drug are tossed along the roadsides in illegal dumps and are extremely toxic.

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

Economically, illegal dumps are expensive to clean up. The estimated cost to clean up a site can be anywhere from $600 to over $1,000 per ton for cleanup and removal. Illegal dumpsites can also impact property values, can be a liability for property owners, and affect property purchases and transfers. Tourism revenues can also be affected by illegal dumps.

In the PA CleanWays surveys, areas that were considered to be an illegal dumpsite were:

- Areas of concentrated trash
- Areas of scattered trash that
  - Are not considered roadside litter
  - Appear to have new trash thrown on them occasionally (more than twice per year)
  - Appear to have new trash thrown on them occasionally, but cleanup maintenance is prevalent to prevent accumulation.
- Areas containing only piles of yard waste (grass, leaves, branches, trees, etc.). These sites can often attract the dumping of other materials and can grow into major dumpsites, and,
- Areas containing isolated or solitary items, such as 1 or 2 appliances or tires that may or may not be dumped on in the future.

Two types of dumpsites that are not evaluated by PA CleanWays are farm dumps and private dumps. A majority of today's farmers have inherited farm dumps on their properties, although some farmers continue to practice this illegal method to save money and time. Private dumpsites are those dumps which are put on the property by current or previous owners. These dumpsites can include

stockpiles of scrap, yard waste, household trash, and other things you may find in an illegal dumpsite. A dumpsite is usually determined to be private by its proximity to a residence, or marked private with "no trespassing" signs.

According to PA CleanWays, the possible causes of an illegal dumpsite can be the following:

- Municipal curbside trash collection is unavailable
  - Because it is not mandated by the state, trash collection options are dependent on the city or municipal government. As many rural and small-town municipalities lack funding for mandatory trash collection, it is up to the resident to pay for trash collection. Communities that depend on private subscription for waste collection services have reported greater dumping problems. Inherent inefficiencies and associated higher costs exist in almost all private subscription systems because trucks must travel long distances between customers.
- Recycling programs are unavailable or inconvenient
  - Act 101 dictates that all communities with populations over 10,000, and densely populated municipalities between 5,000 and 10,000, have recycling programs. Although still eligible for Act 101 recycling implementation grant funding, communities that fall outside of these parameters must often pay for recycling on their own. Depending on the county, many or all of these communities don't have funding to support a curbside recycling program. Curbside recycling communities have reported a lower incidence of residential waste accumulation problems and a slightly lower incidence of dumping problems.
- Disposal of Construction and Demolition debris (C&D)
  - C&D debris is a serious solid waste management issue because of the amount that is generated each year, along with the lack of convenient and or affordable disposal options available. C&D debris is often found in illegal dumps and may compound the problem because some of the C&D materials may be hazardous, such as wood that has been chemically treated or painted with lead based paint, insulation containing asbestos, or shingles.

- Shortage of enforcement
    - Unfortunately, many communities cannot devote people and resources to effectively deal with illegal dumping. As a result, dumpers do not fear prosecution and have no reason to stop their habits.
- Education
    - Illegal dumping has been a learned habit for many. Prior to anti-dumping laws, it was common practice to use open town dumps, burn or bury trash, or dump in a convenient out-of-the-way area. Today, we know the harmful effects from illegal dumping. Education is a key to diminish the habits learned, and to teach the public proper and safe disposal practices.

PA CleanWays conducted an illegal dump survey in Mifflin County in 2010. The survey identified thirty-one (31) dumpsites, containing an estimated total of 30 tons of trash. The thirty-one (31) dumpsites were located in ten (10) municipalities. These dumpsites ranged in size from 0.125 tons to 6 tons of waste. Fifty-five percent (55%) of the dumpsites were considered to be a continuous problem where dumping occurs routinely. Only three (3) of these dump sites had "No Dumping" signs present; however, all of these sites were considered to be active dumpsites. Thirty-nine percent (39%) of the dumpsites were visible from the roadway and twenty-three percent (23%) of the dumpsites were partly visible from the roadway. Thirty-six percent (36%) of the surveyed dumpsites were in the vicinity of some sort of waterway or body of water. Six (6) of these dumpsites had waste materials directly in the waterway itself. Seventy-one percent (71%) of the sites contained household waste, sixty-eight percent (68%) of the sites contained recyclables, sixty-eight percent (68%) of the sites contained tires, fifty-eight percent (58%) of the sites contained bagged trash and thirty-two percent (32%) of the sites contained at least one piece of furniture. The following Mifflin County municipalities had illegal dumpsites surveyed by PA CleanWays: Armagh Township, Bratton Township, Brown Township, Decatur Township, Derry Township, Granville Township, Menno Township, Oliver Township, Union Township and Wayne Township.

In 2010, PA CleanWays also surveyed open dumps in Juniata County. The survey identified forty-nine (49) dumpsites containing an estimated 80 tons of trash. The forty-nine (49) dumpsites were located in fourteen (14) municipalities. These dumpsites ranged in size from 0.125 tons to 6 tons of waste. Sixty-nine percent (69%) of the dumpsites were considered to be a continuous problem where dumping occurs routinely. Only two (2) of the dump sites had "No Dumping" signs present. Twenty-seven percent (27%) of the dumpsites were visible from the roadway, while twenty percent (20%) of the dumpsites were partly visible from the roadway. Thirty-nine percent (39%) of the surveyed dumpsites were in the vicinity of some sort of waterway or body of water. Ten (10) of these dumpsites had waste materials directly in the waterway itself. Ninety percent (90%) of the dump sites contained tires, eighty-eight percent (88%) of the dump sites contained recyclables, eighty percent (80%) of the dump sites contained household trash, sixty-three percent (63%) of the dump sites contained some sort of household hazardous waste and forty-nine percent (49%) of the dump sites contained bagged trash and construction and demolition waste. There were 982 tires itemized at the dump sites, however this number only accounts for tires visible at the time of the survey. The following Juniata County municipalities had illegal dumpsites surveyed by PA CleanWays: Beale Township, Delaware Township, Fayette Township, Fermanagh Township, Greenwood Township, Lack Township, Mifflintown Borough, Milford Township, Monroe Township, Spruce Hill Township, Susquehanna Township, Turbett Township, Tuscarora Township and Walker Township.

C&D waste generated during remodeling, roof or shingle/siding replacement, home additions, flooring replacement, etc. often ends up in illegal dumps, in an effort to avoid the cost of disposal. Some haulers will not accept this material when placed at the curb. Some homeowners are reluctant to pay for placing a rolloff bin at their property to properly dispose of this material, even though most or all of the designated facilities in this Plan will probably be permitted to accept C&D waste. Some homeowners in municipalities with individual subscription services may have chosen not to subscribe to a waste collection service, simply to save money, or, when neighbors or relatives "share" a hauling service at one house (which is not technically allowed by most haulers). When it is a burden for homeowners to haul this material to a disposal facility, or when a contractor who has agreed to dispose of the material decides to avoid the cost of disposal, some of this waste may also be dumped illegally.

Currently, Mifflin and Juniata Counties have waste disposal and recycling options available to residents. These disposal options serve as alternatives to illegal dumping and include:

- Individual/private subscription hauling services between homeowner and hauler
- Municipal bid contract hauling services (Juniata Terrace, Mifflintown Borough and Mifflin Borough)
- Municipal curbside refuse and recyclables collection (in the Borough of Lewistown)
- Public drop-off recycling sites (nine (9) sites in Mifflin County, plus 23 institutional/ commercial drop-off sites in Mifflin County and three publicly accessible drop-off sites in Juniata County.
- White-goods and bulky item disposal (MCSWA Transfer Station)
- Spring/Fall pick-up or “clean-up” events

Regional recycling programs are discussed in detail in Chapter 3 – Recycling Strategy.

2.2.4 Consideration of Expanding Existing Facilities

Title 25 of the Pa. Code, Chapter 272, mandates that a County Plan must consider facilities that meet the definition of "existing facility". The only facility that handles municipal waste in Mifflin County is the MCSWA Transfer Station and Recycling Depot. There are no permitted waste transfer stations in Juniata County. There are no permitted landfills in the two-county Region; all Mifflin and Juniata County waste is hauled to out-of-county landfills.

Mifflin County hosts over 50 recycling drop-off containers at over 30 locations in Mifflin County (public, institutional, and commercial). Juniata County advertised a bid for locating and operating four recyclables drop-off sites in 2010. However, Juniata County felt the bids received were too costly to enable the County to implement and sustain the drop-off sites for any length of time.

In the 1990's, the MCSWA explored the idea of expanding the Barner landfill or constructing a new landfill. For multiple reasons, these options were determined to be infeasible. Therefore, the possibility of locating and constructing a new landfill in the two-County Region is very remote. With the use of waste transfer stations, out-of-county landfills are believed to be a practical and economical waste disposal option. The MCSWA Transfer Station, located centrally in Mifflin County, has the capacity (without expansion) to serve the waste transfer needs of Mifflin County and Juniata County, to economically transport wastes to out-of-County disposal locations.

There is interest in expanding the number of recyclables drop-off sites in the region, especially in Juniata County. This will be evaluated in this Regional Plan.

2.3 Construction and Demolition Waste Collection and Disposal

The predominant collection method for C&D waste is hauling by private waste hauling contractors. According to PADEP Waste Destination Reports and Mifflin County SWA Reports, the Region disposed of 3,943 tons of C&D waste in 2010 (Chapter 1, Table 1-5). Based on the 2010 Act 101 reports for the Region, C&D waste disposed of at permitted landfills has been approximately 10 percent of the total recorded waste landfilled. An undeterminable amount of C&D waste is recycled, reused, used as fill, or disposed of at illegal dumpsites. As shown in Appendix M, approximately 90 percent of the Region's C&D waste is disposed of at the Laurel Highlands Landfill.

2.4 Sewage Sludge Disposal

Tables 2-2 (Mifflin) and 2-3 (Juniata) summarize the sludge disposal practices of the municipal and non-municipal wastewater treatment facilities (WWTP) in the Region. Information was collected through a WWTP survey distributed to municipal and non-municipal facilities in 2011. The facilities responding to the survey report disposing of their sludge in a variety of ways. In the Region, three municipal facilities rely exclusively on land application for sludge disposal (Brown Township, McVeytown Borough and McAllisterville Area Joint Authority). Landfilling is used for disposal by Burnham Borough, Granville Township (including sludge from Bratton Township and Strodes Mills), and Lewistown Borough. Three facilities haul their liquid sludge to other WWTP's for disposal: Bratton Township, Strodes Mills and Thompsontown

Municipal Authority. One facility, Union Township, utilizes Reed bed filters with a sludge bagger backup system.

2.5 Infectious and Chemotherapeutic Waste Collection and Disposal

The majority of infectious and chemotherapeutic waste in the Region is generated at the Lewistown Hospital and the Geisinger Clinics. The Lewistown Hospital has contracts for medical waste disposal services (incineration and/or autoclaving*) for their biohazard, chemotherapeutic, and pathology waste through Stericycle Inc., a company who specializes in safely disposing of regulated materials, headquartered in Lake Forest, Illinois. In addition, Safety Kleen removes hazardous waste spills and other hazardous materials such as waste oil and batteries from the Lewistown Hospital, as needed. Geisinger reports that all such waste is currently transported to their Danville facility where it is disposed via autoclaving. However, please note that they also report that by the end of 2011, Stericycle will be providing the collection and disposal of this waste.

Ash residue resulting from incinerated waste can be disposed of at any municipal waste landfill, as long as the receiving and processing incineration facility is operating under an approved PADEP permit modification.

A smaller portion of infectious and chemotherapeutic waste is generated from various veterinary offices, dentist offices, nursing homes, funeral homes and many other small local medical clinics and pharmacies located in the Region. Most of these small waste generators have collection contractors to handle waste disposal for their special handling wastes.

Firms reporting the collection of infectious and chemotherapeutic waste in the Region include Alpha Biomed Services, Geisinger Health System (internal only, and to be managed by Stericyle by the end of 2011), Stericycle, and Veolia ES Systems. Based on survey responses of the infectious/chemotherapeutic waste haulers and generators, over 57 tons of this waste was generated in the two-county Region in 2010.

**Autoclaving is defined as sterilization equipment which uses a strong steel vessel that can be pressurized. The steel vessel is used for steam sterilization of objects, through pressurized chemical reactions at high temperatures*

Table 2-2
Mifflin County
Sludge Disposal Practices and Plans
Municipal and Non-Municipal Treatment Plants[1]

Source	Method of Sludge Disposal	Location of Sludge Disposal	Accepts Septage	Long Term Plans for Alternative Disposal Method (5-10 yrs)
MUNICIPAL				
Bratton WWTP	Deliver liquid to Granville (Junction) WWTP	Same as Granville (Junction) WWTP	No	Continue delivery of liquid sludge to Granville (Junction) WWTP
Brown Township	Land Application (Liquid)	TR 422 (Wagner Lane) Mifflin Co.	No	Continue land disposal
Burnham Borough	Landfill (Dewatered) and land application	Laurel Highlands landfill (Cambria Co) and Salunga (Lancaster Co)	No	Reed Filter Beds
Granville Township (Junction)	Landfill (Dewatered)	Cumberland County Landfill	Yes	land application
Lewistown Borough	Landfill (Dewatered)	Laurel Highlands Landfill (Cambria Co)	Yes	Possible land application
McVeytown Borough	Land Application (Liquid)	Harshbarger and Plank Farms, Mifflin Co.	No	Land application
Strodes Mills	Deliver liquid to Granville (Junction) WWTP	Same as Granville (Junction) WWTP		Continue delivery of liquid sludge to Granville (Junction) WWTP
Union Township	Reed Beds with Sludge Bagger backup	Union Township, Mifflin Co.	Yes	continue same
Wayne Township	Plant to be decommissioned in March 2011			
NON-MUNICIPAL				
Beacon Lodge Camp	Dispose at a WWTP (Liquid)	Shade Gap Area WWTP (Huntingdon Co).	No	Same
Reeds Gap State Park [2]	N/A (digested in place (low flow))	N/A [3]	No	continue same
Mifflin County School District	System decommissioned 2009			

(1) Information obtained from surveys sent out in 2011 to the Sources in this Table.

(2) Has never generated enough sludge to require disposal

(3) Due to low flow, no sludge has ever built up; no sludge has been removed from the plant in 14 years; solids buildup minimal.

Table 2-3
Juniata County
Sludge Disposal Practices and Plans
Municipal and Non-Municipal Treatment Plants[1]

Source	Method of Sludge Disposal	Location of Sludge Disposal	Accepts Septage	Plans for Alternative Disposal Method
MUNICIPAL				
McAllisterville Area Joint Authority	Land application (liquid)	Edward Watts Farm, Juniata County	Yes	Continue land application
Thompsontown Municipal Authority	Deliver to another WWTP (liquid)	Kelly Township WWTP in Lewisburg, PA	No	Continue disposal at WWTP
Port Royal Water and Sewer Authority	Land Application	NR	NR	NR
Twin Boroughs Sanitary Authority	NR	NR	NR	NR
Richfield Joint Area Authority	NR	NR	NR	NR
Empire Kosher Poultry	NR	NR	NR	NR

(1) Information obtained from surveys sent out in 2011 to the Sources in this Table.

NR = No Response

2.6 Household Hazardous Waste

PADEP studies indicate that less than one (1) percent of the municipal solid waste generated is household hazardous waste.

The MCSWA provides an information service to citizens, both via telephone and through its website, www.mifflincountyswa.com, on a variety of hazardous waste recycling issues, including the proper preparation and disposal of some household hazardous wastes. This includes the following items: paint use (donation and solidification/disposal), CFL light bulbs, computers, and motor oil. Additionally, CFL light bulbs, rechargeable batteries, and lead acid automotive batteries can be dropped at designated areas at the MCSWA Transfer Station. Also, as previously discussed, the MCSWA is currently developing an electronics recycling program (see also Section 3.2.17).

Juniata County does provide their residents with links to valuable recycling information on their website. Specific information regarding household hazardous waste collections is not included on their website at this time. However, its citizens can access the MCSWA service.

At this time, neither Juniata County nor Mifflin County holds annual or semi-annual collection events for HHW.

2.7 Used Oil/Automotive Batteries

The Department maintains a current list of facilities that will accept used motor oil, anti-freeze, waste oil and other automotive products. This list is provided to all Regional municipalities. Currently, PADEP recognizes the following oil recycling sites:

- **Lake Chevrolet, Olds, Geo Saab**
  433 South Main Street
  Lewistown PA 17044
  (717) 248-7848

- **Lake Ford, Lincoln, Mercury**
  371 South Main Street
  Lewistown PA 17044
  (717) 248-0151

- **Advance Auto Parts**
  509 West 4th Street
  Lewistown PA 17044
  (717) 248-1319

- **Pheasant Valley Recycling**
  301 Pheasant Valley Road
  Lewistown PA 17044
  (717) 543-5043

- **Hoober's**
  East Main Street
  McAllisterville PA 17049
  (717) 463-2191

- **Carquest Mifflintown Ag and Auto**
  4587 William Penn Highway
  Mifflintown, PA 17059
  (717) 436-8800

Currently, PADEP recognizes the following auto body recycling sites:

- **Jim's Scrap Metal**
  441 Hawstone Road
  Lewistown PA 17044
  (717) 248-8990

- **Mifflin County Recycling**
  579 Naginey Road
  Milroy PA 17063
  (717) 667-2688

Automotive dealers and battery retailers in the Region and throughout the State are required to take old batteries when new ones are purchased (lead acid batteries may not be discarded in landfills). Currently, PADEP recognizes the following sites as disposal and/or drop-off sites for used batteries:

- **Advance Auto Parts**
  509 West 4th Street
  Lewistown PA 17044
  (717) 248-1319

- **Jim's Scrap Metal**
  Rt. 333 Hawstone Road, P.O. Box 1049
  Lewistown PA 17044
  (717) 248-8990

- **Krentzman and Son**
  3175 Back Maitland Road
  Lewistown PA 17044
  (717) 543-5635

- **Mifflin County Solid Waste Authority – Mifflin County Refuse and Recycling Depot Drop-Off Site**
  87 Landfill Road (Transfer Station location)
  Lewistown PA 17044
  (717) 242-3301

- **Paul's Recycling**
  24 Henderson Street
  Lewistown PA 17044
  (717) 242-1682

- **Pheasant Valley Recycling**
  301 Pheasant Valley Road
  Lewistown PA 17044
  (717) 543-5043

- **Kramers Recycling Drop-Off Site**
  Fairview Road
  McAllisterville PA 17049
  (717) 463-3523

- **CARQUEST Mifflintown Ag and Auto**
  4587 William Penn Highway
  Mifflintown, PA 17059
  (717) 436-8800

It should be noted that both used oil and intact automotive batteries from households are not considered to be hazardous wastes in Pennsylvania. However, they are frequently generated in households and are thus often grouped in the household hazardous waste category. They are also frequently included in HHW collection programs.

2.8 Residual Waste

In 2010, approximately 85% of the documented residual waste generated in the Region was disposed of at the Laurel Highlands Landfill. According to 2010 PADEP County Waste Destination Report Disposal Tonnages and MCSWA Act 101 Reports, 4,572 tons of residual waste generated in the Region was disposed of at the following four facilities (tonnages in parenthesis):

- Laurel Highlands Landfill (3,864 tons)
- Lycoming County RMS (485.5 tons)
- Bradford County Landfill (126.7 tons)
- Veolia Greentree Landfill (95.5 tons)

It is noted that the PADEP county of origin information can sometimes be inaccurate. For example, if a waste hauler incorrectly declares the waste's county of origin when it is delivered for disposal, it can be logged into to the wrong county of origin on the data system (this appears to be a chronic problem with Juniata County's PADEP data, in general). Also, waste traveling through a transfer station (such as the MCSWA Transfer Station) is commonly declared at the disposal site as originating from the county where the transfer station is located, regardless of its initial point of generation. Even with these reservations, this data is often still the best source of information available on waste tonnages by county of origin, for planning purposes.

A new haul/disposal contract between the MCSWA and the Clinton County Solid Waste Authority (CCSWA) that will go into effect in January 2015. The CCSWA will, by contract, be responsible for properly labeling the amount of waste from each County to the disposal facility. This revised hauling contract shall work to solve a large majority of the current mislabeling of waste by county of origin in Mifflin County and Juniata County.

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

3.0 Recycling Strategy

3.1 Introduction

In Pennsylvania's Act 101, the State adopted an unprecedented level of support for the use of recycling as a waste management tool. Besides establishing a goal of 25 percent reduction in the municipal waste stream, later increased to 35 percent recycling by 2003, the regulation includes a variety of recycling provisions. At the statewide level, Pennsylvania has reportedly met and exceeded this goal. However, this waste reduction goal continues to be a difficult quest for more rural counties in Pennsylvania.

Act 101 requires counties to prepare a municipal waste management plan outlining the recycling strategy for the county. County plans must provide for "the maximum feasible development and implementation of recycling programs."

Act 101 supports recycling by setting up grant programs for county planning (Section 901 of the Act), for municipal recycling program development and implementation (Section 902), for partial reimbursement of County Recycling Coordinator costs (Section 903), and for performance-based reimbursement for municipal recycling programs (Section 904).

This regulation requires landfills and resource recovery facilities to develop a program for the removal of recyclable materials to the greatest extent possible; and, prohibits landfills and resource recovery facilities from accepting for disposal, truckloads composed primarily of leaf waste. Recently, the state has considered (but not implemented) additional statewide bans of landfill acceptance of other waste commodities, such as the eight regulated Act 101 recyclable materials, mattresses, used oil filters, and an expanded list of organics.

Act 101 mandates curbside recycling in communities with a population over 10,000 and in communities of over 5,000 people and with a density of greater than 300 persons per square mile.

As required under Act 101's recycling requirements for transfer stations, the Mifflin County Solid Waste Authority (MCSWA) operates a recycling drop-off center at the former Barner Landfill and MCSWA-Barner Site Transfer Station and Recycling

Depot for residents. The MCSWA Transfer Station also uses on-site windrows (i.e., long piles of leaves approximately 6-8 feet high and 15-20 feet wide) for composting leaf waste generated in the County, and complies with the regulatory requirement prohibiting the "disposal of truckloads composed primarily of leaf waste."

Lewistown Borough is the only municipality mandated to recycle by Act 101 requirements (population total and population density) within the two-county Region. Tables 1-3 and 1-4 list the 2010 census populations for all Mifflin County and Juniata County municipalities. Lewistown's 8,338 residents represent approximately 12 percent of the Region's total population and are the only persons affected by an Act 101 municipal curbside recycling program mandate. Although Derry Township and Granville Township now have populations of over 5,000 (7,339 and 5,104, respectively, according to the 2010 US Census), they lack the 300 persons per square mile density for mandated curbside recycling under Act 101.

There are nine (9) public drop-off sites located in Mifflin County and three (3) in Juniata County. Additionally, there are seven (7) institutional and/or special sites in the Region that contain recyclables containers. These containers are only for use by the occupants of that site. There are also sixteen (16) private commercial sites in the Region that contain recyclables containers. Again, these containers are only to be used by the commercial business at which the containers are located. Many of these sites contain multiple bins to collect varying amounts of recyclables. The containers located in Mifflin County are serviced by the MCSWA. Beginning 1-1-2010, commercial and institutional/ special sites are charged a $25 per bin service "pull fee", while public sites are serviced by MCSWA at no charge. Cocolamus Creek Disposal services their Juniata County drop-off sites, and charges customers a fee to use those drop-off containers. Appendix H lists the public and commercial drop-off sites in the two counties. The municipalities with curbside recyclables collection programs, both mandated and voluntary, within the two counties are listed in Appendix H.

Mandated municipalities must do the following under Act 101 guidelines:

- Persons must separate at least three of the following materials (selected by the municipality) from their household waste for collection in a recycling program: clear glass, colored glass, aluminum, steel and bi-metal cans, high grade office paper, newsprint, corrugated paper, plastics.

- Persons are required to separate leaf waste from their household waste for on-site composting or for separate collection and handling.
- Commercial, municipal and institutional establishments and community activities should separate high-grade office paper, aluminum, corrugated paper, and leaf waste and other materials the municipality deems appropriate from their waste.
- A system must be provided to collect the separated material, at least once per month, from the curbside or similar location.
- The municipality must enact an ordinance or regulations to achieve the above, and must make provisions to ensure compliance with the ordinance.
- The municipality must provide for the recycling of collected materials, and must 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 and source-separated recyclable material. At the county level, the ordinances or resolutions can be included, either in draft or final form, in the approved Plan, and may not interfere with the implementation of the recycling program of a mandated municipality.

3.2 Recyclable Materials in the County Waste Stream

A recycling program may target just a few materials or a large number of materials. The decision of which materials to include in a particular program rests on considerations of expected waste stream impact, cost, convenience to participants, and markets. As with other recycling planning alternatives, the choice will depend largely on expected waste reduction and expected cost, in many cases with a trade-off between the two objectives.

This section describes materials targeted (through the residential sector) by the Mifflin County and Juniata County municipal recycling programs. Table 3-1 presents the estimated percent of recyclable materials in the Region's municipal solid waste stream based on the average waste composition for the south-central region of

Table 3-1
Estimated Recyclable Materials Composition of The Region's Municipal Solid Waste Stream (2010)

Material	Percent of Waste Stream[(1)]	Tons in Waste Stream[(2)]
Paper and Paperboard		
Newsprint	3.7	1,406
Corrugated Cardboard	9.2	3,495
Office Paper	4.8	1,824
Mixed Paper	4.5	1,710
Other Paper	12.4	4,711
Paper Subtotal	34.6	13,146
Glass		
Clear, Green and Amber Glass	3.4	190
Non-recyclable Glass	0.5	1,482
Glass Subtotal	3.9	342
Metals		
Steel Cans	0.9	1,254
Aluminum Cans	0.6	152
Other Ferrous	3.3	1,976
Other Non-Ferrous	0.4	2,394
Metals Subtotal	5.2	3,154
Organics		
Yard Waste	6.3	2,888
Wood (Painted and Unpainted)	8.3	12,766
Food Waste	11.4	456
Other Organics	7.6	76
Organics Subtotal	33.6	3,647
Plastic		
#1 PET Bottles and #2 HDPE Bottles	1.2	684
#3-#7 Bottles	0.2	2,546
Other Plastics	9.6	76
Plastic Subtotal	11.0	1,140
Inorganics		4,445
Electronics	1.8	1,406
C&D	6.7	3,495
HHW	0.2	1,824
Other Inorganics	3.0	1,710
Inorganics Subtotal	11.7	4,711
Totals	100.0	37,994

(1) Source: R.W. Beck/PADEP Municipal Solid Waste Characterization Study for Pennsylvania, 2003. All values shown in this table are estimates.

(2) Based on a total tonnage of 37,994 tons (MSW disposed in a landfill by Mifflin and Juniata Counties for year 2010,net of current recycling activities, and excluding C&D waste and special handling waste quantities) was used to estimate recyclable materials quantities. Refer to Table 1-5. Values may not total due to rounding.

Pennsylvania. The composition is based on the 2003 R.W. Beck/PADEP composition study estimates presented in this chapter, and does not account for construction and demolition (C&D) waste or special handling wastes. Table 3-1 tonnage estimates exclude the 4,581 tons of C&D waste (and also exclude special handling wastes) reportedly disposed of in the Region by year 2010 PADEP waste destination records.

The various recyclable materials that are currently managed in the Region through the nine (9) public drop-off sites in Mifflin County and the private sector haulers/drop-off site in Juniata County are listed in Appendix H and are noted below. The drop-off sites within the Region that currently accept each type of material, from the residential sector, are also listed within each subsection.

3.2.1 Newspaper

Newspaper comprises a significant percentage of the municipal waste stream and is primarily generated in the residential sector. Post-consumer waste newspaper is called “old newspaper” or “ONP”. ONP is frequently recycled back into newsprint. It can also be made into cellulose insulation, animal bedding, mulch, low-grade computer printout paper, and paperboard. ONP can also be shredded and used as a bulking agent in composting wet organic wastes, such as sludge or manure. The quantity of newsprint in the municipal wastestream is dropping, as more people obtain their news on-line or on TV.

Newspapers are collected in the Borough of Lewistown’s municipal curbside recycling program, Cocolamus Creek Disposal’s single-stream curbside buy-a-bag recycling programs and Park’s Garbage Service’s single-stream curbside recycling programs. Mifflin County also collects newsprint at eight (8) public drop-off locations: Armagh Township Maintenance Garage, Brown Township Building, Burnham Lions Club, Derry Township Building, Oliver Township Building, the MCSWA Transfer Station, Union Township Building, and at One Stop Communications. The Borough of Lewistown also accepts newspapers at its Borough Yard drop-off site. Additionally, residents may drop off newspapers at the Pheasant Valley Recycling facility, located in Mifflin County. Juniata County collects newsprint at two Cocolamus Creek Disposal (CCD) drop-off locations: the Mifflintown CCD drop-off site and the McAlisterville CCD drop-off.

3.2.2 Corrugated Paper

Corrugated paper, referred to in the recycling industry as "old corrugated containers" or "OCC" may comprise a significant portion of the municipal waste stream. The majority of it is generated by the commercial sector (or local businesses). The prevalence of on-line ordering of products has increased the OCC content in residential waste in recent years. Recovery of OCC is conducted by the commercial waste generators and private haulers to reduce disposal costs and potentially earn modest sales revenue. As more curbside recycling programs expand their residential collection programs to accept an expanded list of fiber materials (such as single-stream recycling programs), OCC is being added to the collected materials. Recovered OCC is mixed with virgin pulp to make new corrugated. It can also be used in the manufacture of other types of paperboard.

Approximately fifty percent (50%) of OCC collection in Mifflin County is conducted through the Lewistown Borough drop-off recycling program. The Borough of Lewistown accepts OCC at its Borough Yard drop-off site, and stages a roll-off collection bin at (Goss) Asher's Candy for OCC collection. OCC is also collected in Cocolamus Creek Disposal's single-stream curbside buy-a-bag recycling program and Park's Garbage Service's single-stream curbside recycling program. OCC is also collected at twelve (12) publicly-accessible drop-off locations in Mifflin County: Armagh Township Maintenance Garage, Brown Township Building, Burnham Lions Club, Derry Township Building, Oliver Township Building, the MCSWA Transfer Station, Union Township Building, the Lewistown Borough Public Works Yard, the Hartman Center, One Stop Communications, Paul's Recycling Yard, and at the Pheasant Valley Recycling facility. Additionally, OCC is collected at three publicly-accessible drop-off facilities in Juniata County: the McAlisterville and Mifflintown drop-off sites serviced by CCD and at Kramer's Recycling Facility. CCD will also provide a container for OCC collection on a monthly basis for a fee.

3.2.3 Office Paper

Office paper and high-grade paper include fine papers, computer printout, office papers, and ledger. 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 may reflect three to seven percent of a municipality's total waste stream, and generates relatively high revenue per volume.

For security reasons, most county offices and some businesses in the Region utilize a professional document destruction company, such as Knisely Shredding or another outside vendor, to pick up and shred/ recycle their office paper. Office paper is also collected in Cocolamus Creek Disposal's single-stream curbside buy-a-bag recycling program and Park's Garbage Service's single-stream curbside recycling program. Office paper is currently collected at Pheasant Valley Recycling. Additionally, office paper is collected at two drop-off facilities in Juniata County: the McAlisterville and Mifflintown drop-off sites serviced by CCD. Both Juniata and East Juniata High Schools' Key Clubs collect office paper, and are allowed to drop this material off at CCD sites at no charge. The Lewistown Borough Yard accepts high-grade office paper mixed with other types of paper in their mixed paper drop-off container.

3.2.4 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, phone books, magazines, and cereal and pizza boxes. Paperboard, a component of mixed paper, is a trade term that includes all cardboard types, such as cereal boxes, cardboard and tablet backings, as well as the paper lining on gypsum wallboard. By the nature of the material, mixed paper includes a small amount of contamination, including food waste, glue and plastic. Roofing material and boxboard manufacturing are traditional uses of mixed paper, and for the production of low-grade tissue and toweling products.

Mixed paper is collected in Cocolamus Creek Disposal's single-stream curbside buy-a-bag recycling program and Park's Garbage Service's single-stream curbside recycling program. Mixed paper is also collected at all nine (9) public drop-off locations in Mifflin County: Armagh Township, Brown Township,

Burnham Lions Club, Derry Township, Oliver Township, the MCSWA Transfer Station, Union Township, the Hartman Center, and One Stop Communications. Mixed paper is also accepted at the Pheasant Valley Recycling facility. Additionally, mixed paper is collected commingled at two public drop-off facilities in Juniata County: the McAlisterville and Mifflintown drop-off sites serviced by CCD.

3.2.5 Glass

Three colors or forms of glass are found in the municipal solid waste stream (e.g. clear, green and amber). Container glass (i.e. bottles and jars) is usually the most marketable and most commonly recycled form of glass. Collected waste container glass can be melted and mixed with virgin glass ingredients to make new container glass. Some of the cullet (broken container glass) is used to manufacture asphalt products, bricks, and other building products. The majority of glass is generated in the residential sector. The percentage of glass containers in the wastestream has dropped dramatically in the last 10-15 years, as more manufacturers convert from heavier glass to lightweight plastic containers, to save on shipping weights and cost.

Clear, brown and green glass is collected in the Cocolamus Creek Disposal's single-stream curbside buy-a-bag recycling program and Park's Garbage Service's single-stream curbside recycling program. Clear and brown glass is collected in the Borough of Lewistown's municipal curbside recycling program. In Mifflin County, clear and brown glass is accepted at the MCSWA Site Transfer Station and at the Lewistown Borough Public Works Yard. Additionally, in Juniata County, clear, brown and green glass is also collected at the CCD drop-off facilities in McAlisterville and Mifflintown.

3.2.6 Steel and Bi-metal Cans

There are two types of steel cans: tin-coated steel cans commonly known as "tin" food cans and "bi-metal" beverage cans. Bi-metal cans have a coated steel body and aluminum ends. These cans are collected together. The steel scrap yielded from these containers can be combined with "cleaner", in-plant scrap and virgin material in the steel manufacturing process. As with other recyclable

materials, processing costs and the costs of hauling to market erode the value of tin and bi-metal cans to recyclers.

Steel and bi-metal cans are collected in Cocolamus Creek Disposal's single-stream curbside buy-a-bag recycling program and Park's Garbage Service's single-stream curbside recycling program. Steel cans are collected in the Borough of Lewistown's municipal curbside recycling program. Steel and bi-metal cans are also collected at five (5) public drop-off locations in Mifflin County: Brown Township Building, Burnham Lions Club, Oliver Township Building, the MCSWA Transfer Station, and the Union Township Building. Steel and bi-metal cans are also accepted at the Lewistown Borough Public Works Yard, Paul's Recycling Yard, and at the Pheasant Valley Recycling facility. Additionally, steel and bi-metal cans are collected at three drop-off facilities in Juniata County: the McAlisterville and Mifflintown drop-off sites serviced by CCD and at Kramer's Recycling Facility.

3.2.7 Aluminum Cans

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 and are not accepted at recycling centers since the different varieties are not readily substitutable. The cost savings from using scrap aluminum rather than virgin inputs (over 90 percent of the energy cost of making virgin aluminum can be saved by reprocessing recycled aluminum) has provided for a strong scrap aluminum market. Recycled aluminum markets have probably been the most consistent recycling commodities in the municipal recycling sector, over the past 20 years. With the current depressed economy, many individuals directly recycle aluminum cans for cash, so the quantity or aluminum cans that currently appear in drop-off containers is minimal. Aluminum cans comprise roughly 0.6 percent of the waste stream, based on averages in the waste characterization study of 2003 conducted by R.W. Beck for the PADEP.

Aluminum cans are collected in the Borough of Lewistown's municipal curbside recycling program, and are also collected in Cocolamus Creek Disposal's single-stream curbside buy-a-bag recycling program and Park's Garbage Service's

single-stream curbside recycling program. Aluminum cans are also collected at five (5) public drop-off locations in Mifflin County: Brown Township Building, Burnham Lions Club, Oliver Township Building, the MCSWA Transfer Station, and Union Township Building. Aluminum cans are also accepted at the Lewistown Borough Public Works Yard, Paul's Recycling Yard, the Pheasant Valley Recycling facility, and Joe Krentzman and Sons, Inc. Additionally, aluminum cans are collected at three drop-off facilities in Juniata County: the McAlisterville and Mifflintown drop-off sites serviced by CCD, and at Kramer's Recycling Facility.

3.2.8 Plastics

The two most common recyclable types of plastic are PET (polyethylene terepthalate - #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. These types of plastics can be processed and substituted for virgin materials in a variety of products. One example is plastic lumber, a product suitable for making park benches and boat docks. Markets are available and fairly stable for clean PET and HDPE; however, the extremely low bulk density of plastics, even when baled, create logistical challenges in shipping materials to markets.

Plastics, #1 and #2, are collected in the Borough of Lewistown's municipal curbside recycling program, Cocolamus Creek Disposal's single-stream curbside buy-a-bag recycling program and Park's Garbage Service's single-stream curbside recycling program. Plastics are also collected at four (4) drop-off locations in Mifflin County: Armagh Township, the MCSWA Site Transfer Station, the Lewistown Borough Public Works Yard, and the Hartman Center. Additionally, plastics are collected at two drop-off facilities in Juniata County: the McAlisterville and Mifflintown drop-off sites serviced by CCD. Pheasant Valley Recycling currently accepts plastic bags, all sizes of plastic soda bottles and water bottles (with the exception of ½ gallon and 1 gallon water jugs) for recycling at their facility. MCSWA is working with Lewistown Borough to bale and market the Borough's plastics together with those collected by MCSWA. Pheasant Valley does not currently accept mixed bales of #1 and #2 plastics, but MCSWA has secured a market for mixed bales of #1 and #2 plastics.

3.2.9 Yard and Leaf Waste

Mandated municipalities are required to separate yard and leaf waste from other municipal wastes. Since September 26, 1990, no waste disposal facility is permitted to accept shipments comprised primarily of yard and leaf wastes, unless a separate composting facility has been provided for processing. Organic material can be ground to mulch, or processed to create compost, which has been proven to be beneficial in many agricultural applications, while removing a substantial waste stream from landfill disposal.

There are seven (7) municipalities in Mifflin County that currently collect leaves; Armagh Township, Brown Township, Derry Township, Union Township, Burnham Borough, Lewistown Borough, and McVeytown Borough. Juniata County has three (3) municipalities that collect leaves: Mifflintown Borough, Port Royal, and Thompsontown.

3.2.10 Other Recyclable Materials

Provided markets can be found, various other types of materials in the municipal waste stream can be recycled. White goods, tires, used motor oil, automotive batteries, textiles (clothing), ink cartridges and electronics are examples of items that may be recycled in addition to the recyclables designated under Act 101 guidelines presented in the beginning of this chapter. The examples mentioned potentially pose disposal problems in both landfills and incinerators, and potentially may end up at illegal dumpsites. As MCSWA searches for and finds viable outlets for these types of materials, it posts this information on its website for use by residents.

3.2.11 White Goods

Large appliances or "white goods" can be shredded and the steel separated for recycling. Prior to recycling, the Freon must be removed from all Freon-containing appliances (i.e. refrigerators and freezers). Some scrap dealers in the Region accept white goods. Many appliance stores will accept appliance trade-ins when selling a new appliance. Also, there are regional recycling events that include major appliances.

The MCSWA Transfer Station, Pheasant Valley Recycling, Rossman's Auto Salvage and Recycling, and Joe Krentzman and Sons Inc. are local outlets for acceptance of white goods in the Region. The MCSWA Transfer Station is the only facility that will accept white goods containing Freon (for a fee). All other identified locations accepting white goods in the Region only accept non-Freon containing appliances, and do not have on-site staff for Freon removal.

3.2.12 Tires

Used tires can be re-treaded, shredded and processed into crumb rubber for use in rubber plastic products. Tires can be recycled to produce a durable ingredient in the production of asphalt. Alternatively, tires can be shredded and burned as a source of fuel.

Tires are accepted at the MCSWA Site Transfer Station for a fee. These tires are primarily processed by Mahantango Industries near Liverpool, Pennsylvania. Additionally, most tires in Mifflin and Juniata Counties are taken to tire shops and garages (traded in for new tires, for a fee) and then transported to Mahantango Industries. For a fee, tires can also be disposed of at Mahantango Industries by residents during normal business hours.

3.2.13 Textiles

Used textiles (i.e. clothing) can also be reused or recycled. Textiles can be resold in consignment stores and at donation locations such as Goodwill and Salvation Army, can be reused as rags, can be shipped overseas, or can be reprocessed into filler products such as insulation or furniture padding. Textiles can also be donated at Planet Aid or similar drop-off box locations; there is an increase in these drop-off box locations in the two counties.

3.2.14 Used Motor Oil

Used motor oil can be refined to produce heating fuel, industrial lubricants and even new motor oil.

Information on acceptance centers for disposal of used motor oil is provided in Chapter 2, Section 2.7, as well as on MCSWA's website at the following location:

http://mifflincountyswa.com/recyclinginformation/motoroiloutlets.html

3.2.15 Batteries

The metal in automotive batteries and the polypropylene plastic case are recyclable. Any retailer that sells automotive batteries must accept the used battery for recycling as part of the transaction.

The Mifflin County Recycling Facility (a private business located at Naginey Quarries) and the MCSWA Recycling Depot (at the Transfer Station) accept used car batteries; MCSWA charges $1 per car battery. Paul's Recycling Yard, as well as many local retailers also accept used batteries; currently, Paul's pays $6 each for used automotive batteries. MCSWA also accepts rechargeable batteries. Additional information on battery disposal is provided in Chapter 2, Section 2.7, as well as on MCSWA's website at the following location:

http://mifflincountyswa.com/recyclinginformation/motoroiloutlets.html

3.2.16 Ink Cartridges

Ink cartridges are accepted at the MCSWA's truck scales window during open hours at the Transfer Station. Many businesses accept them as well, such as One Stop Communication and Ink Garage. Also, when ordering ink cartridges from businesses such as Office Depot, Staples, Office Max), the business usually supplies a return box and label to send them back in to company. In the courthouse in Juniata County, empty ink cartridges are gathered and returned to a recycling firm or the manufacturer's return labels are utilized.

3.2.17 Electronics

Electronic equipment contains metals that, if not properly managed or contained, can become hazardous wastes. Some of the materials contained in electronics are as follows:

- Cadmium – the largest source of cadmium in municipal waste is rechargeable nickel-cadmium (NiCad) batteries.

- Lead – old monitors and televisions contain a cathode ray tube (CRT) that contains leaded glass. CRTs are the largest source of lead in municipal waste.
- Mercury – some electronic equipment also contains recoverable quantities of mercury.

The "Covered Device Recycling Act" (House Bill 708), PA Act 108 of 2010 establishes a recycling program for certain covered devices; imposes duties on manufacturers and retailers of certain covered devices; provides for the powers and duties of the Department of Environmental Protection and for enforcement; establishes the Electronic Materials Recycling Account in the General Fund; and prescribes penalties for non-compliance.

A covered device is a covered computer device and covered television device marketed and intended for use by a consumer. A further description of these items is as follows:

- Covered computer device - A desktop or notebook computer or computer monitor or peripheral, marketed and intended for use by a consumer.
- Covered television device - An electronic device that contains a tuner that locks on to a selected carrier frequency and is capable of receiving and displaying television or video programming via broadcast, cable or satellite, including, without limitation, any direct view or projection television with a viewable screen of four inches or larger whose display technology is based on cathode ray tube, plasma, liquid crystal, digital light processing, liquid crystal on silicon, silicon crystal reflective display, light emitting diode or similar technology marketed and intended for use by a consumer primarily for personal purposes.
- Peripheral - A keyboard, printer or any other device sold exclusively for external use with a computer that provides input into or output from the computer.

The following website contains information on PA DEP's guidelines for electronics recycling as well as links to information on EPA's electronic recycling guidelines.

http://www.portal.state.pa.us/portal/server.pt/community/household/14079/electronics_management_program/589592

Previously, MCSWA used a company called UNICOR, part of the Federal Prison Industries Inc., to recycle electronics. The electronics were recycled off the transfer station floor, placed in Gaylord containers, and periodically shipped to UNICOR by MCSWA. Shipping cost to UNICOR was MCSWA's responsibility. UNICOR accepted most electronics sent at no charge. Television monitors over 19 inches had a charge of $10 per unit by UNICOR so MCSWA limited recycling of televisions over 19 inches to avoid the expense.

Following sponsoring JVS's first electronics collection in Mifflin County at the June 2011 Green Expo held by PA Clean-ways and MCSWA, the first full electronics load was collected from the MCSWA site in August 2011. Since then, JVS Environmental, from Rockwood, PA has been servicing the MCSWA with a trailer to load e-waste, and has picked up a total of three tractor trailer loads of electronics waste from the Authority at no cost.

Obsolete electronic equipment received by JVS is first inspected and all digital storage devices including hard drives, floppy or compact discs and memory cards are removed and processed either by complete physical destruction or certified data removal software which complies with the United States Department of Defense (DOD 5220.22-M) standard for data sanitization and the National Institute of Standards and Technology (NIST) Special Publication 800. In addition, any asset tags that identify the origin of the equipment are removed and subsequently destroyed. The equipment is then graded by age and function to determine reuse or remarketing potential. These items are repaired and remarketed to provide low cost technology solutions to those who may otherwise not have access to computers. All equipment that is not considered reusable or re-marketable is de-manufactured in a USEPA or PADEP compliant manner and the raw materials generated from this process are sent to domestic refineries or processing facilities where they may be returned to the raw material market.

JVS has developed innovative methods to efficiently de-manufacture Cathode Ray Tube (CRT) containing devices including televisions and computer monitors while maintaining a high level of "due diligence" for final disposition of the bare CRTs. JVS's protocol requires that CRT devices that enter the facility be de-

manufactured to the constituent level by separating the CRT, wire, plastics, circuit boards and miscellaneous metals and securing end points where these materials may be processed in a socially and environmentally acceptable manner. The network of leaded glass recycling vendors retained by JVS adhere to strict ISO standards which allows JVS to provide a "closed-loop" CRT recycling process. JVS has established ongoing partnerships with several municipalities, private organizations and other recycling companies to process CRT devices in a highly efficient and environmentally compliant (PA DEP approved) manner.

JVS is equipped to accept any electronic waste including computer monitors (CRTs), central processing units (CPUs), keyboards, mice, printers, copiers, fax machines, telecommunication equipment, scanners, televisions and lead-acid automobile batteries. Other electronic items are accepted upon approval by JVS.

Mifflin County will continue to work jointly to finalize this program to allow distribution of all electronics waste collected in Mifflin and Juniata County to maximize future efficiency and revenues to the e-waste vendors that is currently JVS Environmental. Future Requests for Proposals for other outlets will be discussed as the regulations mandating the banning of electronics from the waste stream effective 1/1/13.

3.2.18 Scrap Metal Recycling

Scrap metal recycling at MCSWA has continued to be a source of revenue. The process of recovering scrap metal material continues to be available on site at MCSWA. Residents have the ability and are instructed to place all scrap metal in the designated containers that are accessible prior to waste disposal on the transfer station floor.

MCSWA also recovers visible scrap metal as time permits from the floor of the transfer station to minimize the metal scraps going into the waste stream. Small staff makes this difficult at times to recover as much material as is available. Scrap metal recycling tends to be market variable. Many residents choose to store and deliver scrap metal directly to end vendor and recover money for the material.

CCD collects scrap metal for recycling, and there are a number of other private sites that accept scrap metals for recycling (see Section 3.6 of this chapter).

3.2.19 Clean Wood Recycling

Clean Wood Recycling at the MCSWA site is directly related to the pulling of non-treated wood, such as pallets, raw lumber, boards, etc., from the waste stream as time permits. This wood is then delivered to Millers Wood Recycling located in the Industrial Park in Lewistown, PA, by MCSWA at a charge of $10.00 per load.

Expansion of the Clean Wood Recycling at MCSWA will be considered as its compost recycling operation is further expanded and developed to allow Clean Wood to be a recycled material by residents at discounted pricing, to be shredded and incorporated in the mixing and windrow process(currently being expanded and restructured at MCSWA).

3.3 Potential Benefits of Recycling

Act 101 requires that each County Municipal Waste Management Plan describe and evaluate the potential benefits of recycling. The primary direct cost benefits of recycling stem from two sources: the revenue returns generated from recyclable materials markets, and a reduction of municipal costs from lower quantities of waste requiring collection, transportation, processing, and disposal. The reuse value of the material is reflected in its market price and is subject to frequent changes. Currently, the average recyclables net market value for many types of commodities fluctuates frequently. The net market value is dependent upon the weight of the material and the quantity and quality of material sent to a recycling market. Additionally, the market value is dependent on the commodity type. Over recent years, the economy has fluctuated and in some cases the market value of recyclable commodities has fluctuated with the economy. Plastics have been able to hold their market value over the course of the changing economy, but other materials, such as glass, have decreased in value. The quality of the commodity is also very important to the market value. A clean product will return more money than mixed loads, such as mixed paper versus sorted paper. Last, the distance to available markets from the processing facility influences the market value of recycling commodities.

Another potential benefit is the "cross-servicing" of waste streams to the benefit of multiple users. Anaerobic digestion of food waste has recently been implemented at multiple facilities within the two counties. The benefit to the digester owner/ operators (which may be farmers) is the addition of a new revenue stream (a tipping fee) with minimal additional capital investment required for an existing agricultural digester system. The benefit to the organics/ food waste generator or waste hauler may be the payment of a reduced tipping fee (versus landfilling) and the reduction in the amount of waste that is actually landfilled. The anaerobic digestion operations in the region are further discussed in Section 3.9.7 of this chapter.

This diverted tonnage is expected to increase during the 10-year planning period (2015-2024, as discussed in the introductory paragraph of Chapter 4). It is estimated that approximately 190,000 tons of waste materials will be recycled during the 10 year planning period. This recycled material would cost approximately $10-15 million in disposal fees, at today's rates (not including collection and direct-haul costs) if it had been taken to a landfill or transfer station as a waste. In addition, the recycled material is used again in a variety of useful products, thus saving the raw materials that would normally be needed to produce those products.

There are many important benefits gained from recycling, including economic and environmental benefits which have Regional, national, and global significance. The EPA states that "the use of recycled materials spurs innovation, a key to long term economic growth." Investments in recycling collection, equipment and the recycled products manufacturing companies themselves, also filter through the economy and contribute to economic growth. The social and environmental benefits of recycling are just as important since they reduce pollution, save energy, and reduce greenhouse gas emissions. Recycling and buying recycled products are important, easily achievable strategies to combat climate change.

Specific environmental benefits to the Region have been estimated using the EPA-WARM Model (see Appendix N for the complete results of this analysis for the two-county Region). To summarize this report, the environmental savings associated with the recycling that occurred throughout the Region in 2010 can be put in terms of Savings Equivalencies, as follows:

- Net Greenhouse Gas savings from Regional Recycling = over 11,700 metric tons carbon equivalency

- Net Energy Savings from Regional Recycling = nearly 428,000 million BTUs
- Gasoline saved = over 3,400,000 gallons
- Coal saved from recycling steel and glass = more than 6,300 tons
- Landfill Space saved by recycling = more than 18,200 CY
- Equivalent number of tree seedlings grown = nearly 395,000
- Energy savings in terms of average households/year = over 4,100

As can be seen, the equivalent environmental savings associated with recycling are quite substantial.

According to the 2003 Municipal Solid Waste Characterization Study conducted by R. W. Beck for the PADEP, there were over 2 million tons of recyclable materials landfilled in 2001. This material included paper, plastic, glass, metal, organics, and inorganics. Table 3-1 contains the estimated percentages of recyclable materials contained in the waste stream from the R. W. Beck study, as well as the equivalent tonnage of recyclable material that may be expected to be found in the two-county Region's waste stream (2010). Copies of the complete study can be obtained from the PADEP web site at the following website location:

http://www.dep.state.pa.us/dep/deputate/airwaste/wm/RECYCLE/Waste_Comp/Study.htm

While not 100% of the waste stream can be easily be recycled (due to the type of materials, contamination and quality issues, available markets, cost-effectiveness, and inefficiencies in any system), this information shows that there is still considerable room for improvement in recycling. To increase recycling, counties and municipalities can investigate expanding the types of materials collected curbside or drop-off, select material commodities that are more cost-effective to collect, expand the number and hours of drop-off programs, improve the education of their residents, increase the number of municipalities with curbside collection programs, and focus on recycling in commercial, institutional, and multi-family facilities. Additionally, counties and municipalities can consider increasing the number of special collections and composting/ organics processing opportunities offered to their residents. Although all of these ideas may not work in both counties, a greater

emphasis on cooperation, with an analysis of what can realistically be achieved, is imperative. With decreased grant money to spend on programs, each county must decide what its achievable goals are, and take incremental steps toward accomplishing the desired end results. Securing the long-term delivery of a wastestream to the MCSWA may, indirectly, help with MCSWA's ability to help support/ enhance recycling opportunities and programs in the Region.

As indicated in Table 1-8, the two-County Region, an estimated MSW generation of 65,628 tons of gross discards in 2015 and a 28 percent recycling rate would divert 18,380 tons of municipal solid waste from disposal. With recycling diversion rates projected to slowly increase and the population slowly increasing, annual tonnages diverted through recycling efforts are estimated to increase to over 19,000 tons by 2020, and are projected to grow to roughly 24,000 tons diverted annually from disposal by 2030.

In the Region, the benefits of recycling go beyond the economic savings identified above. Two (2) studies conducted in 2010 by PA CleanWays on illegal dumping in Mifflin and Juniata Counties revealed approximately 80 illegal dumpsites throughout the Region. Surveys and research by Keep Pennsylvania Beautiful and PA CleanWays have indicated that a major reason for illegal dumping is limited access by residents for disposal of white goods, tires, furniture, recyclables and other bulk items that are frequently found in illegal dumpsites. Consequently, improving the recycling opportunities for these bulky items (and any other materials) may help reduce the illegal dumping problem in the Region. More information regarding illegal dumping is contained in Chapter 2 of this Plan.

3.4 Existing Recycling Activities

Lewistown Borough is the only municipality in the Region required by Act 101 to implement a mandatory recycling and yard waste collection program. The remaining 32 municipalities in the Region, based on low total populations and/ or low population densities, are not required to establish recycling programs under Act 101. As of 2011, none of the 32 non-mandated municipalities have voluntarily instituted municipality-wide curbside recyclables collection programs. Parts of five (5) municipalities in Mifflin County, and various routes in Juniata County (through the CCD "buy-a-bag" collection program), are being offered curbside recyclables collection through private subscription. Selected areas of Wayne Township (part of

the five municipalities mentioned above) are offered curbside recyclables collection through Park's Garbage Service; additionally, Newton Hamilton Borough, Kistler Borough, McVeytown Borough and Derry Township are all offered curbside recyclables collection through Park's Garbage Service, which does not include the entire municipality. Cocolamus Creek Disposal offers a buy-a-bag pickup service on specific collection routes in Juniata County for a fee. Park's and Cocolamus Creek both offer single-stream recyclables pickup (all materials mixed together in one container or bag). Both of the private sector curbside recyclables collection programs collect a wide range of recyclable material, including newsprint and mixed paper, which is a component of the wastestream that adds significant weight to materials collected. (A list of materials accepted by both private sector companies is included in Appendix H) At this time, there are nine (9) public recyclables drop-off sites located in Mifflin County, and three (3) in Juniata County (two are privately operated by CCD with a user fee for public access, and one by Kramers).

Lewistown Borough's residential recycling program is directly controlled by municipal government, thus assuring that the amount reported is fairly representative of the amount of material actually recycled. Other residential recycling programs rely primarily on community drop-off locations, and the reports are provided mainly by the recycling facilities receiving the material, which again are considered very accurate. However, information regarding the amount of material actually being recycled in commercial, industrial, institutional, apartment complex programs, and private sector curbside programs may be inaccurately reported since a comprehensive record of recycling from those sectors requires that each individual establishment or the collector provide complete, accurate information. This is a problem that needs to be addressed by the municipalities and is a requirement that is difficult to enforce (see Chapter 8, Section 8.2—Implementing Entity Identification-Local Governments).

The previous Solid Waste Management Plans for Mifflin and Juniata Counties included descriptions of recycled materials, and included a discussion of types and quantities of materials recycled, as well as a history of recycling operations prior to 2003. They also discussed alternative commercial recycling processing facilities within the region. In those Plans, each County addressed recycling services in a different manner (Authority-owned facility, in Mifflin County; or reliance on the private sector, in Juniata County).

In the intervening years (since the adoption of the previous County plans in 2003), there have been a few alterations in regional recycling and waste management programs. While Mifflin County still relies on the Authority-owned MCSWA Transfer Station site to process material, MCSWA is working with Juniata County to help it establish ways to provide hauling and processing of drop-off recyclable containers for parts of Juniata County. Additionally, Cocolamus Creek Disposal currently offers weekly, single stream, curbside recyclables collection to residents (along certain routes – as outlined on their website at (http://cocolamuscreekdisposal.com/ recycle.html) in Juniata County, as well as the hauling and processing of some drop-off sorted recyclable material in Juniata County. As mentioned previously, Cocolamus Creek Disposal has set up specific routes in Juniata County that they are willing to provide curbside single-stream recyclables collection to through the use of a buy-a-bag system. Bags can be purchased from various retailers in the area for $2.75 each. Park's Garbage Service (a private waste company) offers bi-weekly, single-stream, curbside collection of recyclables to certain residential collection routes in Mifflin County, in the following municipalities: Wayne Township, Newton Hamilton Borough, Kistler Borough, McVeytown Borough and Derry Township. Park's provides service information and options on its website at:

http://parksgarbageservice.com/pages/recycling/mifflincounty.html.

3.4.1 Recycling Collection for Single-Family Residential Homes

With only one municipality in the Region, and portions of several others, having curbside recycling collection available to residents, public and private drop-off centers are an important consideration in the Region's recycling strategy. With the Region's low population density, drop-off centers are potentially the lowest cost, feasible alternative to implementing curbside collection programs. Appendix H contains brief descriptions of the nine (9) public recyclables drop-off sites located in Mifflin County, and three (3) in Juniata County. There are a number of private recyclers in the Region that accept drop-off materials: the larger ones include Cocolamus Creek Disposal Services, Pheasant Valley Recycling and Joe Krentzman and Sons, Inc. Many of the drop-off facilities are unmanned and/or operated by municipal government. These curbside collection programs and drop-off facilities accept a wide variety (which vary by site) of materials accepted, including; three colors of glass bottles, #1 and #2 plastic bottles, other types of plastics, newspapers/ magazines/ mixed paper, aluminum and steel/ bimetal

cans, office paper and corrugated cardboard. Additionally, yard waste is collected in four (4) municipalities in the Region. Recycling processors comment on the high quality of incoming material, both curbside and drop-off. It will remain a constant challenge to maintain these same high standards as the amount of collected material increases, both through increased curbside and drop-off programs.

In Mifflin County, only Derry Township, Newton-Hamilton Borough and Union Township currently offer Spring/Fall pick-up or “clean-up” events. In addition, the MCSWA provides education on recycling issues through websites, and other educational resources, notifying their residents when and where they can dispose of hard-to-recycle items throughout the year, such as motor oil, electronics, antifreeze, and other items. Lewistown Borough, located in Mifflin County, began a sticker system in which residents of the Borough can purchase stickers to be placed on items for disposal. These items can be placed at the curb for collection on the weekly trash collection day at any time throughout the year. Currently, in Juniata County, only Thompsontown Borough (every two years) and Tuscarora Township offer clean-up collection events to their residents. However, residents can access the Juniata County website and the MCSWA website for recycling information. Residents of both counties are encouraged to contact their respective municipalities, as individual municipalities may sponsor or support clean up events for their residents.

3.4.2 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. However, 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..." As requested, the MCSWA will assist municipalities and owners of multi-family units to develop recycling programs and/or provide dumpsters for recyclables for fees set accordingly on a per occurrence basis.

3.4.3 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.

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. Mandated municipalities must adopt a recycling ordinance that may not be less stringent than the 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.

Commercial customers serviced by the Borough of Lewistown's (the only mandated municipality within the Region) recycling program are required to recycle the following items: clear and brown glass, #1 and #2 plastic bottles, aluminum and steel cans, newsprint, old corrugated cardboard (OCC), pallets, and white office paper. If businesses generate a small amount of OCC, it is picked up at curbside with the other materials. For larger businesses, such as Asher's Candy (Goss), the Borough stages a roll-off container on site. On Tuesdays and Fridays, the Borough collects corrugated cardboard from commercial accounts.

Commercial customers serviced by the MCSWA recycling program are required to recycle corrugated cardboard. In addition, Calkins Auto collects mixed paper, catalogs and magazines and the Valley View Retirement Home collects bi-metal cans, newspaper, mixed paper, catalogs and magazines in addition to corrugated cardboard. MCSWA stages roll-off containers for cardboard and additional material as mentioned previously, at the following sixteen (16) locations:

- Aarons Rental
- Bobby Rahal
- Brindles' Hardware
- Calkins Auto
- GE Technologies
- Hartley's Chip Factory
- Honeycreek Inn
- Malta Home
- Ohesson Manor
- Ron's Fruit Market
- Sears
- Sylco
- SUM Children's Center
- Valley View Retirement Home
- Vince's Pizza and others
- Walnut Medical Services

Institutional customers serviced by the MCSWA recycling program (this is a voluntary program) recycle mixed paper, catalogs and magazines. In addition, Union Elementary collects corrugated cardboard. MCSWA stages roll-off containers for these materials at the following seven (7) locations:

- East Derry Elementary
- Mifflin County Junior High School (the old Indian Valley High School)
- Indian Valley Middle School/ Indian Valley Elementary School (IVIS/IVES)
- Lewistown Elementary
- Strodes Mills Elementary School
- Union Elementary School

- Mifflin County High School

Both Park's Garbage Service and CCD service commercial customers' recycling needs in Juniata County.

For this Regional Plan, the Plan recommends expanding upon this approach by further educating residents on available curbside and drop-off recyclables options; by pursuing collection and recycling services through a combination of Authority, County or municipally-owned facilities; by increasing available recyclables drop-off facilities through a cooperative two-county effort; by establishing educational material on special handling wastes disposal options; and by offering municipalities the information necessary to bid for desired services from the private sector.

Specific recommendations for future recycling efforts are included in Chapter 6 of this Regional Plan.

3.4.4 Existing Municipal Recycling Programs

For the most part, the Region has done a commendable job in following the mandates of Pennsylvania's Act 101 which requires curbside recycling by residents, businesses and institutions in Pennsylvania's larger communities.

Within the Region, there are a total of 33 municipalities (Mifflin 16, Juniata 17). Of these, only 1 municipality (Lewistown Borough) is designated as a Mandated Recycling Community, based on the criteria contained in Act 101, so much of the Region's recycling is done by non-mandated communities.

The Borough of Lewistown's recycling effort is a significant portion of the recycling effort within the Region. Between 2006 and 2010, Lewistown Borough was responsible for 20% of the total recyclables collected in the Region. The Borough uses a source-separated curbside collection program for recyclable materials. This method has helped the Borough eliminate most "residue waste" that can result from commingled collection. Limiting residue minimizes re-sorting/double-handling, and lowers costs. Further, decreasing the overall volume taken to the MCSWA Transfer Station for processing and transportation

to an ultimate disposal facility directly reduces the cost to the Borough, by reducing money paid out to the transfer station and subsequently to a landfill through waste disposal tipping fees.

Lewistown's source separation operation uses compartmentalized curbside collection vehicles and municipal collection crews. Operators leave items on the curbside when residents attempt to recycle items not accepted by Lewistown's mandated recycling program. As a result, the residents get immediate feedback on materials that are not accepted for recycling.
Currently, Lewistown Borough accepts the following materials for curbside collection:

- newspaper
- clear glass (food and beverage containers)
- plastic (natural HDPE and PET, #1 and #2)
- steel (food and beverage cans)
- brown glass (food and beverage containers)

Residents use 18-gallon recycling barrels, six-gallon recycling containers, and bags to separate recyclables for curbside pick-up. Recycling containers are supplied by the Borough. Collection crew operators only stop for recyclables where a blue recycling container is set along the curb. Not every resident has recyclables set out for collection each collection day. The blue containers are used as the flag for the collection crew.

As mentioned previously, most of the smaller communities in the Region have access to drop-off site recycling programs or voluntary curbside recycling programs through a private hauler. The MCSWA provides the majority of drop-offs located in Mifflin County. In total, there are nine (9) public recyclables drop-off sites located in Mifflin County, and three (3) in Juniata County. Although some of the locations accept recyclables from only their residents, many will take material from any customer. In addition, the materials collected vary from location to location.

Lewistown Borough reports that it complies with Act 101 yard waste recycling mandates by participating in the MCSWA yard waste program. MCSWA is approved by PADEP to operate a low-technology windrow yard waste composting operation. Some non-mandated communities in the Region also operate compost sites, and there are public and private operations for grinding wood and yard waste.

In total, the Region's residents and businesses recycled approximately 24,000 tons of material in 2010, with over 5,000 tons comprised of Act 101 material, including commingled containers, glass, paper products, and yard waste.

Each county within the Region educates their residents in different ways. The MCSWA maintains a comprehensive website with important information regarding solid waste management throughout the County, as well as providing specific information on recycling. Juniata County provides their residents with various links, located on the County website, for solid waste and recycling information. Juniata County plans to add a recycling page to their County website soon. A link to these recycling information locations is shown below:

Mifflin County, at:
http://www.mifflincountyswa.com/

Juniata County, at:
http://www.co.juniata.pa.us/links.php

3.4.5 Existing County Recycling Programs

The following is a summary of the programs currently in place in each County:

Mifflin County – Currently, the Mifflin County Solid Waste Authority operates a recycling collection depot at their transfer station. Haulers and residents within the Region can bring recyclables to this facility for processing and, wherever possible, ultimate sale to available markets. This site accepts a wide variety of Act 101 recyclable materials, including unwanted mail and mixed paper, aluminum cans, cardboard, newspaper, plastics #1 and #2, clear and brown glass, along with batteries, cell phones, printer cartridges, CFL bulbs and most electronics at no cost except for a small fee for tires, car batteries and

appliances. Currently, the MCSWA accepts recyclables source-separated with a limited amount of single stream collection accepted at the facility for sorting, i.e. loads from commercial entities comprised mainly of cardboard and office paper with possible other forms of waste as well can be sorted on the transfer station floor for processing. The MCSWA also operates ten nine (9) recycling drop-off facilities throughout the County, including a drop-off site at the transfer station. In addition, MCSWA operates seven (7) institutional/ special drop-off sites and sixteen (16) commercial drop-off sites in the County. The drop-offs located throughout Mifflin County are mainly unmanned sites, with some municipal sites operated by municipal employees or volunteers, including municipal staff.

Additionally, there are five (5) private companies who offer recyclables drop-off facilities within Mifflin County: Pheasant Valley Recycling, Paul's Recycling Yard, Rossman's Auto Salvage and Recycling, Mifflin County Recycling, and Joe Krentzman and Sons, Inc. These facilities are often only available to residents of Mifflin County and/or to residents of a certain municipality within the County. While Pheasant Valley Recycling accepts a wide range of Act 101 material, the other four drop-off sites accept a more limited amount of recyclable material. The materials accepted at these three drop-off sites are driven by profit margin on the select material.

Neither Mifflin County nor the MCSWA provide curbside recyclables collection for any municipalities in the County. Municipalities are encouraged to contract with waste haulers for recyclables collection and/or enter discussions with local haulers to offer recyclables collection to residents with subscription waste collection. In Mifflin County, only Derry Township, Newton-Hamilton Borough and Union Township currently offer Spring/ Fall "cleanup" events.

In contrast, Park's Garbage Service offers curbside single-stream recyclables collection to residents in selected areas of Wayne Township and to all residents of Newton Hamilton Borough, Kistler Borough, McVeytown Borough and Derry Township. Park's Garbage Service collects a wide range of Act 101 materials, including, cardboard, mixed paper, office paper, newspapers, aluminum cans, plastic bottles, and clear, green and brown glass containers. Park's offers services in exchange for a waste commitment, and vary depending on resident location.

There are seven (7) municipalities in Mifflin County that currently collect leaves; Armagh Township, Brown Township, Derry Township, Union Township, Burnham Borough, Lewistown Borough, and McVeytown Borough. Leaves are either land-applied, placed in depressions, composted, or taken to a private site for processing (such as Metzler Forest Products). MCSWA accepts and composts leaves from a number of sources in Mifflin County. Juniata County has three (3) municipalities that collect leaves: Mifflintown Borough, Port Royal, and Thompsontown. Deamer Mulch and Rt. 333 Supplies are private processing sites that accept leaves in Juniata County.

The MCSWA encourages residents to take part in the National Take Back Initiative for pharmaceuticals collection, by posting information regarding the collection event on the MCSWA website as well as a link to the event's homepage which contains the locations of the event in Mifflin County. Additionally, MCSWA continues to publically educate and advertise events to residents of the County, including electronics collection, HHW collection, and any other collection events provided through entities other than MCSWA.

Juniata County – There are two private companies who offer recyclables drop-off facilities within Juniata County: Kramer's Recycling and Cocolamus Creek Disposal Services (CCD). CCD maintains two drop-off facilities within Juniata County, located in McAlisterville and Mifflintown. These facilities are available to residents of Juniata County and the general public. While CCD accepts a wide range of Act 101 material, the Kramer's Recycling drop-off site accepts a more limited amount of recyclable material, which includes OCC and commingled metal cans.

Juniata County does not, nor does its municipalities; provide curbside recyclables collection for any municipalities in the County. Municipalities are encouraged to contract with waste haulers for recyclables collection and/or enter discussions with local haulers to offer recyclables collection to residents with subscription waste collection. Cocolamus Creek Disposal Service offers curbside recyclables collection to residents along selected routes in Juniata County through its buy-a-bag service. CCD collects a wide range of Act 101 materials, including, cardboard, mixed paper, office paper, newspapers, aluminum cans, plastic bottles, and clear, green and brown glass containers.

Juniata County does not currently offer spring and fall cleanup events for hard-to-dispose of items, although some municipalities do offer a spring clean-up day. Currently, in Juniata County, only Thompsontown Borough (every two years) and Tuscarora Township offer clean-up collection events to their residents. Future options for electronics collections are being considered by Juniata County. Juniata County is also considering a tire collection event for the fall of 2012. Additionally, Juniata County continues to publically educate and advertise events to residents of the County, including electronics collection, HHW collection, and any other collection events provided through entities other than Juniata County.

3.5 Changes in Act 101 and Impact of These Changes to the Region

Act 101 (P.L.556), originally enacted on July 28, 1988, was amended via the implementation of Act 140 (House Bill No. 1902, session of 2005, as amended on 9/27/06). This amendment created a series of changes. Notable among the other changes, were specific changes to Section 2, with respect to Section 904 (a) and (b), regarding performance grants for municipal recycling programs. Among other requirements, the amendment expanded the level of documentation required to be included with the applicant's recycling and composting grant request submission, and this affected funding received by municipalities beginning in 2007. Other recent changes in the Act 101 grant programs include (circa 2010) the significant reduction in the dollar amount of Section 904 performance grants to municipalities (which is based on the quantities and types of recyclables diverted from the waste stream).

In addition, Act 101 was reauthorized in May of 2010, and the sunset date for the collection of PADEP Act 101 fees was extended until 2020. The PADEP fee structure includes $2/ton for every ton of municipal waste disposed or processed at disposal sites and resource recovery facilities in Pennsylvania; this money is used to establish a grant program within the Recycling Fund for recycling, planning and related purposes.

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

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

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

There has been a notable decrease in the amount of funding awarded through Section 904 grants to mandated municipalities throughout the Commonwealth in the past several years. This reduction in funding awards is related to the lack of inflationary increases to the $2 per ton recycling fee since it was instituted in 1988, the redirection of some Act 101 funds to the Growing Greener Program, and the effort to make recycling programs in PA self-sustainable. With that in mind, it is recommended that each County evaluate ways in which they can assist in the implementation and expansion of recycling programs in the Region, and consider assisting mandated (and non-mandated) municipalities with grant applications and Act 140 compliance issues.

Specifically, it appears that the principal issues associated with non-compliance have revolved around the following, each of which may arguably be best addressed with assistance from the appropriate County recycling and/or solid waste staff:

- A lack of commercial recycling and periodic public education
- A lack of commercial recycling ordinances
- A lack of an enforcement program
- A lack of a required recycling report from local recyclers
- Lack of a mandatory collection program for garbage and/or recyclables

3.6 Recycling Facilities

There are four (4) primary recycling facilities in the Region that accept the majority of recyclables materials. In addition, there are four (4) smaller facilities which accept miscellaneous specialty commodities or limited materials. The following describes all eight (8) facilities:

3.6.1 Mifflin County Solid Waste Authority (MCSWA) Transfer Station

The MCSWA Transfer Station was constructed in October of 2005. It is located at 87 Landfill Road in Lewistown. Details regarding the facility and operations are described in Chapter 2, Section 2.2. The MCSWA Transfer Station is open Monday through Friday from 7:00 am to 3:00 pm and Saturdays from 8:00 am to 11:30 am. The Transfer Station currently accepts the following recyclable material at no charge: newspaper, scrap metal, clear glass jars (rinsed), brown glass jars (rinsed), magazines, tin food containers (rinsed), aluminum food/soda cans (rinsed), office/scrap paper, corrugated cardboard, plastic #2 and #2 bottles, rechargeable batteries (under 2 pounds), printer cartridges, CFL bulbs and cell phones. Additionally, the Transfer Station accepts dirt, block, brick, concrete and stone at their demo pit. This material must meet PADEP clean fill standards. The Transfer Station also accepts leaves, dried grass, dead plants, and anything already shredded at their compost area.

In addition to the materials mentioned above, the MCSWA Transfer Station also accepts various hard-to-recycle materials for a fee. At their brush area, they

accept brush, trimmings that are not shredded, roots, stumps and old fire wood for one-half the cost of the public gate rate, with a $5.00 per-load minimum charge. The Transfer Station also accepts appliances with Freon for $15.00 per unit, which may include air conditioners, freezers, refrigerators, dehumidifiers, etc. Non-Freon appliances are accepted for $5.00 per unit, which may include stoves, dryers, washers, hot water heaters, humidifiers, etc. Car batteries may be disposed of at the Transfer Station for $1.00 each.

The MCSWA Transfer Station accepts tires at their facility year round. Car and light duty truck tires are $3.00 each off of the rim and $4.00 each on the rim. Quantities of 10 or more will be done by weight at a charge of $140.00 per ton. Tractor trailer tires are $140.00 per ton regardless of quantity. No industrial size tires are accepted at the Transfer Station. Any commercial tire hauling to and from the MCSWA Transfer Station requires a PADEP license. The hauler must have this license in place prior to delivery of tires to the MCSWA Transfer Station.

3.6.2 Cocolamus Creek Disposal Services, Juniata County

Cocolamus Creek Disposal Services (CCD) began a recycling center in 1993. They expanded their recycling services by opening a self-service drop off center in Mifflintown in 2008 and by providing the first curbside recycling service in Juniata County in 2009. CCD now services five (5) counties (Juniata, Perry, Mifflin, Snyder and Union) with both residential and commercial accounts. They currently have the only on site recycling center in Juniata County and provide residents of Juniata and Mifflin County drop-off recyclables services at their two facilities located in McAlisterville and Mifflintown. The Mifflintown drop-off center is open Wednesday from 2:00 pm to 8:00 pm and Saturdays from 8:00 am to 12:00 noon. Only the recycling buy-a-bags may be dropped off after hours at both locations. The cost to residents to use the drop-off locations is $5.00 per vehicle. Additionally, residents may purchase recycling buy-a-bags for $2.75 each and drop these bags off at the drop off locations, in which case the $5.00 fee is waived.

The materials accepted at these drop-offs include: aluminum foil, food and beverage containers, glass food and beverage containers in clear, brown and green, natural and pigmented plastic narrow-neck containers with symbols 1 and

2, such as (milk bottles, water bottles, detergent bottles, shampoo bottles, bleach bottles, etc.), ferrous (iron, steel and tin) cans, newsprint – black and white or pigmented, construction paper, Kraft paper, cereal boxes, shoe boxes or similar items, printer, computer and copy paper, junk mail, magazines, catalogs and phone books, corrugated cardboard, and various metal household items. Recyclable materials can be dropped off at the Cocolamus Creek Disposal facility commingled (in the purchased bags) or source separated.

Cocolamus Creek Disposal Services offers curbside recyclables collection to residents in Juniata County who contract for waste and recyclables collection. Residents who wish to recycle with Cocolamus Creek Disposal Services must purchase a buy-a-bag. These bags cost $ $2.75 each (one size bag offered). Buy-a-bags are available at retailers throughout the CCD service area.

3.6.3 Kramer's Recycling, Juniata County

Kramer's Recycling will accept OCC and commingled metal cans at their facility. The facility is located at 2499 Fairview Road in McAlisterville. The hours of operation are Monday through Friday 7:00 am to 5:00 pm and Saturdays 7:00 am to 12:30 pm. Residents of both Mifflin and Juniata County can use this facility.

3.6.4 Pheasant Valley Recycling, Mifflin County

Pheasant Valley Recycling is located at 301 Pheasant Valley Road in Lewistown. The facility accepts materials from residents within a 50 mile radius of their facility, which includes portions of Huntingdon, Snyder, Union, Mifflin and Juniata Counties. The materials accepted at Pheasant Valley Recycling include: plastic bags, aluminum and tin cans, office paper, newspaper, cardboard, magazines, phone books and catalogs. The materials brought to the facility must be source-separated.

3.6.5 Paul's Recycling Yard, Mifflin County

Paul's Recycling Yard is located at 24 Henderson Street in Lewistown. The facility accepts the following recyclables from Lewistown Borough residents only: aluminum and tin cans and cardboard. The materials brought to the facility must be source separated.

3.6.6 Joe Krentzman and Sons, Inc., Mifflin County

Joe Krentzman and Sons, Inc. has been a full service scrap company since 1903. The company provides container service and scrap solutions to industry and the general public and processes scrap in their three central-Pennsylvania locations. Joe Krentzman and Sons, Inc. will accept most types of ferrous and non-ferrous grades of metals at their facility. The facility is located at 3175 Back Maitland Road in Lewistown. The hours of operation are Monday through Friday 8:00 am to 4:00 pm and Saturdays 8:00 am to 12:00 noon. Residents of both Mifflin and Juniata County can use this facility.

3.6.7 Rossman's Auto Salvage and Recycling, Mifflin County

Rossman's Auto Salvage and Recycling will accept most types of non-ferrous grades of metals and all grades of ferrous metals at their facility. This includes aluminum, copper and stainless steel. The facility is located at 10 Morning Glory Lane in Lewistown. The hours of operation are Monday through Friday 7:00 am to 5:00 pm and Saturdays 7:00 am to 12:30 pm. Residents of both Mifflin and Juniata County can use this facility.

3.6.8 Mifflin County Recycling Center, Mifflin County

Mifflin County Recycling accepts and pays for scrap aluminum, scrap iron, copper, car batteries, and car radiators. The facility is located at 579 Naginey Road, Milroy, PA. Their hours are 9:00 am to 4:00 pm Monday, Tuesday, Thursday and Friday, and 9:00 am to noon on Wednesday and Saturday.

3.7 Costs Associated with Recycling

There is currently limited cost data on existing municipal programs, since obtaining this information would require an extensive survey of each municipality. It may benefit the resident if the hauler offers a "pay as you throw" trash collection option, where the resident or business pays a fee per bag/can for only the waste they produce.

Most of the collection and processing/sale of recycled items are conducted by the MCSWA or by contracted private haulers, so estimates of potential recycling revenues are also not readily available.

Municipal cost avoidance on recycled waste would most likely be offset by additional costs associated with increased collection, and any specific cost avoidance benefits would most likely be associated with commercial businesses, or by residents if the hauler instituted a fee per bag/can, or limited service option .

Minimal revenue is generated at special collections in order to fund other programs where no fees are collected. New recycling programs are structured as partnerships to ensure that the hauler generates sufficient revenue to continue the program.

Developing some kind of fee support for integrated waste management and recycling programs in the two-county region would be an important factor in deciding whether Mifflin and Juniata Counties can expand recycling in ways that include:

- Increased special collections, such as Household Hazardous Waste
- Increased hours and materials accepted at drop-off locations
- Explore the possibility of establishing additional, permanent public drop-off sites
- Explore the potential for expanding institutional recycling, especially in Juniata County
- Explore the possibility of expanding commercial recycling programs
- Funding for regional education outreach programs such as websites and brochures
- Providing funding to municipal programs which were reduced or eliminated as a result of past revenue shortfalls

3.8 Compatibility with other Processing and Disposal methods

Act 101 requires each County Municipal Waste Management Plan to "describe and evaluate the compatibility of recycling with other municipal waste processing or disposal methods, giving consideration to and describing anticipated and available

markets for materials collected through municipal recycling programs". This section briefly presents issues of compatibility with landfilling, waste-to-energy, and centralized materials recovery.

3.8.1 Compatibility with Landfilling

Technically, recycling of waste materials is compatible with landfilling operations. Removal of organic and other decomposable materials, such as paper, leaf and yard waste, reduces the environmental impact of landfilling while also preserving landfill space. Removing inert material, such as plastics, preserves landfill space and saves on operating costs. In addition, landfill operators are required to provide a recycling drop-off station at their facility.

3.8.2 Compatibility with Waste-to-Energy

Removal of non-combustible material such as glass and metals improves combustion efficiency, reduces wear on the equipment and furnace, and reduces the amount of ash produced. Any reduction in the waste stream saves incineration costs by decreasing the required throughput capacity of a new facility. However, the BTU value of diverted (through recycling) plastics and paper components of the waste stream may lower the overall BTU value (and the power-generating-revenues) of the remaining waste that is burned for energy. The impact of recycling on overall BTU value of the waste is usually evaluated on a case-by-case basis.

3.8.3 Compatibility with Centralized Materials Recovery

Centralized materials recovery involves the separation at a centralized facility of recyclable (and compostable) materials from mixed municipal solid waste. For municipal solid waste composting systems, source separation benefits the process by removing non-compostable materials such as glass and metal.

3.9 Yard Waste Management and Organics

3.9.1 Composting Introduction

Chapter 272 of the Municipal Waste Management Regulations 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. Prior to Act 101 mandates for leaf waste diversion in mandated communities, yard waste comprised 10 to 20 percent, sometimes 30 percent, of a typical municipal waste stream, making it an attractive target for diversion through a composting program. Since then, composting projects have been developed and subsequently, yard waste currently comprises approximately 5 to 10 percent of a typical municipal waste stream.

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.

Leaf and yard waste composting is allowed in Pennsylvania as a “Permit by Rule”, or PBR, provided the process is approved by PADEP. PADEP has developed guidelines for an acceptable leaf waste composting process under the PBR program. Entities that operate leaf and yard waste composting sites within these specific PADEP guidelines, and that notify PADEP of their plans and receive approval, can operate as if they had obtained a composting permit. MCSWA has a been issued PADEP approval for a PBR for yard waste composting at its Barner Transfer Station site, which allows the windrow composting of leaves and yard waste. A description of the low technology windrow composting program that is allowed under the PBR program is included in this section of the Plan. A copy of the complete PADEP Guidelines for Yard Waste Composting, dated September 1997 (with minor changes made 2009), under which PBR sites operate, is included in Appendix I of the Plan. This guidance document also addresses land application of yard waste. Typically,

land application involves spreading leaves, or other yard waste material, on farm fields where it is tilled into the soil.

Grass clippings can make up one-third to one-half of all yard waste. PADEP has developed guidelines for yard waste composting which enable grass clippings to be processed with other yard wastes at a Permit by Rule yard waste composting site as long as compliance is maintained with specified additional operating restrictions. The most significant of these restrictions is that grass cannot be processed at a rate of more than one-part grass to three-parts other yard waste.

Yard wastes can be composted with nearly any other organic waste including waste paper, sewage sludge, animal manures, and food processing wastes. Yard wastes, particularly leaves, are a desirable complement to high-moisture, high-nitrogen wastes such as sludge and manure.

3.9.2 Yard Waste Collection

There are generally two basic methods used to collect leaves: loose collection or containerized collection. Loose collection is not appropriate for general yard wastes such as grass clippings.

Loose collection of leaf waste can be accomplished using a vacuum loader or front-end loader. Vacuum loaders can be purchased with a box to hold the collected leaves or can be used with dump trucks or boxes built by municipal workers. While a front-end loader with the standard bucket attachment is not particularly efficient at collecting leaves, it is commonly used because it is readily available in many municipalities. There are several types of special "pincer" type buckets that can be attached to a front-end loader to improve its suitability for yard waste collection. In many yard waste programs, front-end loaders are used in conjunction with dump trucks or garbage packers.

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. Standard, non-degradable 30-gallon plastic bags are commonly used by residents for containerized collection. Removal of the bags by hand at some point in the collection or composting process is a draw-back to the use of such a system.

Another option for containerized collection is the use of plastic bins. The use of reusable plastic bins is becoming a popular method of collecting yard waste.

Yard waste can be collected by municipal crews or by a municipally-contracted private hauler. Municipalities within the Region may provide drop-off locations for other yard waste (e.g. brush, tree trimmings). Appendix I contains a list of organic processing facilities located within the Region.

Currently, the Borough of Lewistown municipal crews collect leaves from residents using municipal garbage trucks. Borough residents may also dispose of Christmas trees (seasonal) at Lewistown's municipal yard drop-off site, following a two (2) week curbside collection of Christmas trees. The Borough takes Christmas trees to the MCSWA Transfer Station for shredding. Port Royal Borough collects Christmas trees and takes them to a local mulch producer for chipping and processing. Currently, Mifflintown Borough, Port Royal Borough, the Borough of Lewistown, and Derry Township collect leaf waste from resident's curbside. Thompsontown Borough collects leaf waste and Christmas trees.

3.9.3 Regional Initiatives in Yard Waste Management

The MCSWA Transfer Station accepts (at no charge) leaves, dried grass, pre-shredded materials and dead plants. MCSWA has a permit-by-rule for windrow composting on the Barner site. This composting process is described in general, later in Section 3.9. The shredded material and composted material at the MCSWA-Barner Site Transfer Station is available for use by residents.

Additionally, the MCSWA Transfer Station accepts brush, trimmings that are not shredded, roots, stumps and old fire wood for $41.50 per ton ($5.00 minimum).

The MCSWA Transfer Station site uses a tub grinder on an as-needed basis that is provided by others. MCSWA has used Clinton County's tub grinder in the past, and continues to investigate other grinding options to control or reduce costs.

In Juniata County, there are currently two commercial establishments, Deamer's Mulch and Route 333 Supplies that accept leaf and yard waste. Mifflintown Borough and Port Royal Borough deliver the leaf and yard waste collected in

their municipalities to these establishments. Many residents of Juniata County utilize grasscycling and backyard compost bins. Leaf waste generated within the County is sometimes utilized by local farmers on their fields as a nutrient component.

3.9.4 Low Technology Composting Process

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 (described below). This method usually produces compost in approximately 12-18 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.

MCSWA has PADEP approval for a low technology permit-by-rule composting process. The design and operating considerations for a low-technology leaf composting facility are as follows:

(a) Siting: Zoning, access roads, water supply, soil grade and drainage characteristics must be considered. A buffer zone, needed for odor control, should be sized according to the closest neighbor and PADEP guidelines on isolation buffer distances. The PADEP guidelines require a minimum of one acre of site for each 3,000 cubic yards of vegetative material being processed.

(b) Windrow Size: PADEP guidelines require the pile to be 6-8 feet high and 12-16 feet wide. The pile can be extended to as great a length as desired.

(c) Pile Building: Front-end loaders are used to build the piles. PADEP recommends that piles be built within two days of the delivery of material to the site. The process is also adaptable to leaf and grass co-composting (with additional operational steps). Grass clippings can be added to existing leaf compost piles from the previous autumn. This mixing benefits both the grass and leaf composting process. If grass clippings are being composted, to avoid odor problems they should be incorporated the day received and at a leaf to grass ratio no lower than 3:1.

(d) Moisture: The moisture content should be maintained at approximately 50 percent. Water should be added, if needed, when the piles are being formed and when they are being turned. The PADEP guidelines support this moisture level.

(e) Pile Turning: Piles are usually turned with a front-end loader or with specially-designed turning equipment. Turning is necessary for wetting the outer edges, re-aerating the material, and insuring that all material is exposed to the high temperatures characteristic of the center of the pile. Piles are turned at least every two months; however, more frequent turning will increase the rate of decomposition. The PADEP guidelines require a minimum of two turnings per year. With incorporation of grass, more frequent turning is required; during some periods, daily or semi-weekly turning may be necessary.

(f) Curing: In late summer the material is combined into large curing piles to make room for the next leaf deliveries. Curing allows for further decomposition, and can be for as little as one month to as much as one year. Curing piles usually do not emit any odor.

(g) Shredding and Screening: Shredding and screening are optional finishing steps that provide for a uniform end-product, thereby enhancing the market value of the material. Both processes, however, are labor-intensive and increase capital and operational costs.

(h) Clean yard waste compost is a commonly marketed compost material that usually has many local end users. Finished compost can be made available to residents, nurseries, landscapers, and farmers. Compost can be used as a soil amendment. Municipal crews can use it for reseeding, to hold soil moisture, and for landscaping projects. Municipal programs usually have to expend some effort and resources in notifying potential users of the compost's availability. Given the high transportation costs relative to the compost's value, the compost users generally will be located close to the compost source. Without advanced finishing steps such as screening and bagging, municipal market value for most composted material is minimal.

3.9.5 Composting Program Operation Alternatives

A simple yard waste compost program alternative is to deliver the yard waste material directly to a farm or nursery. Farmers can compost the material in static piles or windrows before use, or allow the material to compost on a fallow field. Alternately, raw yard waste material may be tilled directly into crop fields and allowed to decompose in the soil mixture. If this is done, the yard waste decomposition process may use soil nutrients such as nitrogen that may need to be replenished through fertilization of the field.

One disadvantage of direct delivery to an interested farmer or nursery, if one can be found, is that the farmer or nursery may abruptly discontinue acceptance of the material. Other disadvantages to this method are the potential limitations on the materials that can be collected and on the collection methods. For example

clean, unbagged leaves are sometimes the only material that will be accepted by a farmer or nursery.

Yard waste composting and compost product distribution can be done privately, by municipalities acting individually or cooperatively, or by the Counties. The use of special composting equipment such as a turning machine, tub grinder, and screening equipment is more cost effective when the equipment is shared among several municipalities. When hauling costs are considered, it is generally more cost effective to use several compost sites located strategically across the Region. A strategic compost site location would likely be close to the major yard waste sources, close to transportation routes and end users, and be located where municipal cooperation allows for resource and equipment sharing. Two or more neighboring municipalities may find it advantageous to share both a site and equipment.

3.9.6 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. In addition to back yard composting, grass clippings can be left on the lawn as natural fertilization (using a mulching mower). Additional information on backyard composting and vermicomposting is available through the PADEP.

3.9.7 Food Waste Composting and Anaerobic Digestion Considerations

3.9.7.1 Food Waste Composting

As Table 3-1 illustrates, it is estimated that over 30 percent of the municipal waste stream in the Region is made up of discarded organics. Roughly one-third of this, or at least 10 percent of the waste stream, is estimated to be comprised of food waste. If food waste could be diverted from disposal and otherwise processed/ composted, this could significantly reduce the quantity of waste requiring disposal in the region. However, the separation, collection,

transportation and ultimate processing of this material, in a cost-effective and environmentally sound manner, are challenges that would need to be addressed. To see how food waste separation and composting is done now, the Mifflin and Juniata County Solid Waste Advisory Committees visited two such aerobic composting programs in the State College area in the Fall of 2010.

The Borough of State College has operated a pilot curbside-residential, commercial (one Weis Market), and institutional (school) food waste diversion and composting program for several years. This is one of the first residential-collection food waste collection programs in the U.S. Residents are given small wheeled containers where they place food waste. Multiple wheeled carts are used at the grocery store. Weekly, this food waste is collected by Borough forces, using a rear loading garbage truck with a lifting mechanism. Collected food waste is taken to the Borough's low-technology windrow yard waste composting site on South Atherton Street near State College. There, the food waste is emptied onto a prepared bed of yard waste and immediately mixed and placed in a windrow pile for composting. Piles are turned frequently on this site (weekly). After several months, the composting process is complete and the material can be beneficially used. The Borough sells most of its finished compost wholesale, where it is then marketed by a retailer. After approximately three years of pilot operation, this very successful program is now expanding to additional areas of the Borough (which probably contain a mix of residential, commercial, multi-family, and institutional users).

Penn State University also operates a food waste and organics windrow composting operation near the university campus, and periodically collects pre-consumer food waste (food preparation waste, not post-meal waste) from the campus dining halls as well as the Nittany Lion Inn and the Penn State Conference Center. Food waste and animal manures from campus barns are stored in bunkers at the compost site, and are then mixed with yard waste and other carbon-rich bulky organics, and finally placed in long windrow piles for composting. Piles are turned periodically, and a high-quality compost end-product is produced that is used for on-campus horticultural and landscaping purposes. This highly successful composting operation had been active for approximately ten years.

Both of these composting operations are conducted using simple, low-technology windrow composting techniques. No foul odors were noted by SWAC members during the site tours, and no reports of environmental or nuisance problems have been published on at either of these sites, to our knowledge.

If the Mifflin-Juniata Region ever considered trying to collect and compost food waste, it is likely that the MCSWA composting site may be a part of those plans. Theoretically, if MCSWA received the food waste deliveries across its scales (possibly at a reduced tipping fee), and processed/ composted the materials on-site, it could offset the cost of the composting operation with the savings gained by not transporting or disposing this waste at distant out-of-county landfills. There are multiple environmental benefits that could result from such an operation. However, this type of operation may compete with existing private processing facilities in the Region that are also eager to accept food waste; and the separation, storage and collection of food waste from generators are logistics that would need to be worked out. Further discussions on food waste processing options are presented below.

3.9.7.2 Food Waste/Organics Anaerobic Digestion

The anaerobic (without oxygen) decomposition of food waste is another alternative waste management technique that is currently being employed in anaerobic digesters in both Mifflin and Juniata Counties. Food waste is added to a conventional farm-type anaerobic digester (with modifications as needed for feeding and processing), and the organics are broken down in the absence of oxygen by bacteria in the digester that produce methane gas, also known as biogas. The methane gas can then be cleaned up and burned, or can be used to drive a gas generator to produce electricity. It is reported that the two existing anaerobic digesters in the Region may be interested in accepting and processing food waste (at some fee). The following is a brief summary of the two facilities.

Reinford Farm in Mifflintown, Juniata County, is now a 500+ head dairy farm that has been operating an anaerobic digester since February of 2008. Feedstock for the digester includes manure and source-separated food waste from as many as 40 Wal-Marts and Sam's Club stores, plus a few Giant

Markets. Most of the wastes received are non-edible produce and bakery waste, plus a small amount of dairy. They do not receive any post-consumer food waste at this time. When the digester was designed, it was sized for up to 1,000 cows, giving it excess capacity for food waste processing. Organix Recycling Inc. collects the food waste from the stores weekly and delivers approximately 60-70 tons per week to Reinford Farm. The farm owner estimates that they could probably double the amount of food waste that they are currently processing. The biogas that is generated is cleaned and is fired through a 140KW generator to produce electricity. The electricity is sold to Pennsylvania Power and Light Company (enough to power about 80 homes), and any electricity needs on the farm are met by buying power back at a lower rate than it is sold to PPL. The digestate (solid residuals from the digestion process) are dried and used as bedding on three farms, and the liquid waste is applied to the farm fields twice yearly. Waste heat from the machinery and the digestion operation is also captured and used on site for heating purposes. Approximately three-quarters of the $1.1 million capital cost for the facility was reimbursed through various grants and credits.

Kish-View Farm, a 360-head dairy farm in Belleville, Mifflin County, also has installed a manure digester that can potentially accept food residuals. It was designed by the same company that designed the Reinford Farm system, so it is similar in many ways. Currently, Kish-View places manure from the dairy farm in the digester (that is sized for 500 cows) and anaerobically produces biogas, which fires a generator for power, and waste heat that is utilized on-site. Digestate is dried and used for bedding. The cost of the project was funded through “substantial” grants, according to the farm owner. While they have not yet reportedly taken any food waste, the owner has stated that they would eventually like to pursue accepting food waste at the farm for processing in the anaerobic digester.

It is suggested that any plans in the Region regarding the possible separation, collection and processing of food waste should consider the existing anaerobic digesters in the Region as a processing alternative to aerobic composting.

3.10 Options for Encouraging Participation in Recycling Programs

Increasing participation in municipal recycling programs requires continuous educational efforts. Regardless of the specific program structure, getting the information about the program to residents on a continuous basis will improve its success and participation. Public education programs should convey the importance, yet ease, of the recycling program. Children are a great target for education regarding recycling. Children get excited about recycling and can have a large influence on their parents' recycling participation.

Social pressure can be very persuasive to certain individuals within the community. The perception that recycling has strong community support can help to motivate people to recycle. Recycling containers should be very visible and identifiable as for-recycling.

Keeping recycling requirements simple, distributing home storage containers with an instructional brochure enclosed, and publicizing the recycling program procedures through direct mail and the local media are several ways to overcome the informational barrier to participation. In addition, education should be reinforced as needed to ensure that participants are not only aware of the program, but also that they follow the correct procedures.

Incentives may be used to motivate people to recycle. In some cases, financial incentives like a pay-per-bag garbage fee may be successful. The system goes by the concept that people will receive a cost savings (per bag) if they minimize their waste generation. Conversely, mandatory recycling ordinances have also been used as a financial disincentive for those who fail to participate.

The responsibility for public education can be shared by both the Counties and municipalities. The Counties may provide a variety of recycling educational materials to municipalities, special interest groups, commercial and institutional establishments and local school districts throughout the Counties. The County's Solid Waste/Recycling Coordinator can assist municipalities in tailoring their educational materials to their specific programs. Community-specific promotional materials have the advantage of harnessing community pride to generate interest and boost participation. Even for program-specific public education efforts, the Counties can potentially provide assistance, such as model brochures, names of printers, and cost information. Recycling education grants (up to 90%) have been

available in the past from PADEP to help with the development of recycling education materials, but since 2008, Section 902 grant funding has not been offered by PADEP to support educational efforts.

Costs of developing a recycling program, whether curbside or drop-off, or a mandatory or voluntary program, are specific to each municipality or group developing the program. The County's Recycling Coordinators can assist in providing additional recycling program cost analysis and guidance to any municipality or group that seeks assistance in developing a program.

3.11 Recycling Strategy

3.11.1 Goals and Objectives

The guiding objectives used in developing the Region'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 with the full support of the local municipalities.

The Region intends to follow Act 101 guidelines that state: 1) mandated municipalities (currently only the Borough of Lewistown in Mifflin County) must curbside-recycle at least three source-separated recyclable materials from the list of eight materials designated by Act 101; 2) citizens in mandated municipalities must separate leaf waste for special handling (such as composting or agricultural utilization); and, 3) businesses and institutions in mandated municipalities must recycle at least three types of materials, plus leaf waste.

The Region's recycling goal is to have a comprehensive recycling program that allows for convenient recycling opportunities for County residents that will include curbside collection, drop-off collection, and potentially include additional recycling services to meet Region recycling and disposal needs.

The following is a list of specific Regional recycling program goals to be considered:

- Encourage, maintain, and potentially develop curbside collection.

- Provide, maintain, and expand public drop-off collection services to be available to all County residents within the Region.
- Expand institutional recycling programs, particularly in Juniata County.
- Expand commercial recycling programs.
- Expand electronics recycling into a regional program
- Develop special materials recycling collection events.
- Continue existing yard waste efforts and expand in yard waste collection where possible.
- Improve the effectiveness of the existing recycling programs through a comprehensive public information and education program that will be communicated to and coordinated with local municipalities.
- Work with existing waste haulers to encourage recycling and waste diversion.
- Develop a system to better document and report to the Counties of the Region the recycling that is occurring in the residential, commercial, and institutional sectors.
- Use recycling efforts and educational efforts related to recycling as a means to deter illegal dumping activities through identifying recycling as an alternative to dumping.
- Identify funding sources to be used to help implement Regional recycling goals.

Specific Juniata County recycling program goals include:

- Expansion of Mifflin County recycling programs into Juniata County, such as:
- School recycling;
- Commercial OCC recycling;
- Public drop-off site(s) sponsored and funded by Juniata County;
- Two-county coordinated efforts on managing E-waste;
- Composting services;

- Annual functions, such as the Great PA Cleanup, America Recycles Day, etc.
- Assistance with grant applications for program funding support (such as areas where Mifflin County has had grant application success in enhancing recycling efforts).

4.0 Disposal Capacity Needs

There is a need to coordinate all plan and contract schedules in the new plan and its implementation documents. Discrepancies in expiration dates among 1) the Mifflin County Municipal Waste Plan, 2) the Juniata County Municipal Waste Plan, 3) the MCSWA Transfer Station's haul/ disposal contract, 4) the disposal capacity assurance contracts with each of the existing county plans, and 5) the MCSWA large hauler volume discount waste delivery contracts, requires transitional schedule adjustments in the new Mifflin-Juniata Regional Plan to bring the Plan and its key implementation components into synchronization with each other. All contracts cannot be coordinated until the end of 2014, when the current MCSWA Transfer Station haul/ disposal contract expires.

For this reason, 2015 is now targeted as the initial year of the new Regional Plan, and the mandated (by PADEP) 10-year planning period for the new Regional Plan will run from 2015 through 2024. Until 2015, efforts should be focused on continuing and extending current integrated waste management and recycling efforts and contracts, with a goal of 2015 synchronization of all plan components for the next ten years.

Municipal waste disposal and recycling needs of the region will be assessed in this chapter over this formal ten-year planning period (2015 through 2024). Interim measures must also be taken to continue to properly manage the regional wastestream and recyclables during the transitional period, from now until the beginning of 2015, and to phase in, when appropriate, long-term measures that will be in place from 2015 through 2024. Therefore, projections of needs for the region will, in effect, be made from 2012 through 2024, with some even longer-range forecasts through 2030.

4.1 Municipal Waste Disposal Needs

According to PADEP County Waste Destination Reports, the two-county Region disposed of 44,539 tons of MSW (including C&D waste) in 2012 (Chapter 1, Table 1-5). Region-wide recycling programs diverted an estimated 17,715 tons of recyclable materials from being disposed of in 2012, according to municipal recycling records and the annual Act 101 County Recycling Reports (Chapter 1, Table 1-9). In the future, these waste generation quantities will grow, in response to Regional population growth. Changes in recycling activities over time will be estimated in terms of a percentage of wastes diverted from disposal. One purpose of this chapter

is to consider possible waste management system (including recycling) changes through the year 2024, and to estimate the "net" municipal waste disposal capacity needs for the Region (after recycling) for the formal 10-year planning period (2015 through 2024) as mandated by PADEP. In effect, the actual planning period of this Plan will run from 2012 through 2024, which also includes the transitional planning period of 2012 through 2014.

Table 4-1 lists the projected quantities of waste that will be generated by the Region, and after waste diversion through recycling measures, that will require disposal, from 2012 through 2024 (and for the longer-term, through 2030). The estimated quantity of municipal waste (including C&D waste) requiring disposal, after recycling, for the PADEP-mandated ten-year portion of this planning period (2015 through 2024), is approximately 477,000 tons total, or about 47,700 tons annually. This is equivalent to approximately 130 tons per day based on 7 days per week basis, or 910 tons per week, on a 5.5 days per week basis. These tonnages do not include sewage sludge or residual wastes.

The method and assumptions used to make gross and net discard projections over the planning period are described in detail in Chapter 1 - Description of Waste. The analysis in Chapter 1, Table 1-8 shows an estimated two-county waste reduction rate of 28 percent in 2012. This regional waste reduction rate is projected to remain relatively constant over the planning period.

Table 4-1
Tonnages of MSW Requiring Disposal In The Region
(2010-2030)

Year	Waste Requiring Disposal[(1)] (before recycling) (tons)	Waste Requiring Disposal (net discards after recycling) (tons)
2010	62,317	38,394
2012	62,254	44,539
2013	56,700	40,800
2014	65,276	46,996
2015	65,628	47,248
2016	65,909	47,449
2017	66,192	47,652
2018	66,476	47,856
2019	66,762	48,062
2020	66,875	47,475
2021	67,109	47,639
2022	67,341	47,811
2023	67,575	47,975
2024	e	48,139
2025	68,045	47,625
2030	69,175	44,955
Total Tons Requiring Disposal, 2015-2024	**667,678**	**477,307**

Source: Table 1-8.

(1) Waste tonnages include C&D waste.

The estimated waste reduction rates should be considered as waste reduction goals by the Region. Act 101 originally set a recycling goal of 25 percent for 1997 and later increased this statewide goal to 35 percent by 2003. The current regional recycling rate (28 percent) does not meet the current statewide goal.

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. Due to the change in material used to package items, the waste stream has seen a decrease in the overall weight of recyclable material. The waste stream has seen a recent change from glass packaging to plastic packaging and likewise a change from heavy plastic packaging to lighter plastic packaging as the market continues to grow and expand. Due to these changes, the PADEP no longer looks at recycling efforts in a municipality purely as percent recycling, but instead looks at the overall tons of recyclable material recovered by a municipality. Therefore, Table 1-8 of this Regional Plan projects a goal of recovering approximately 19,400 tons of recyclable material by 2020 and 24,000 tons of material by 2030. This reflects a steady growth of recycling in Juniata County, and continued stable recycling efforts in Mifflin County.

4.2 Available Disposal Capacity vs. Disposal Need

As part of the Municipal Waste planning process, each county in Pennsylvania needs to secure ten (10) years of disposal capacity for municipal waste generated from within its borders. Waste from the two-county region is delivered to disposal sites based on the following:

1. Its listing as a designated site in either the Mifflin County or the Juniata County municipal waste plan;
2. Delivery contracts between a hauler and the MCSWA Transfer Station, or perhaps a disposal site, and/ or;
3. Prevailing market conditions.

Haulers are generally free to take municipal waste from a given county to any permitted disposal site of their choosing, as long as the site is designated in that County's municipal waste plans.

As of 2010, under the free market waste system in place in the Region, over 88% of municipal wastes generated from the Region were disposed of at the publicly-owned Mifflin County Transfer Station. This public investment is supported primarily by revenues generated from tipping fees on incoming wastes. Publicly-financed facilities often provide other waste management "value-added" services that many private facilities don't provide (recycling, mulching/ composting, special waste

disposal, etc.) Should waste deliveries to this public transfer station decrease in the future, this public investment, as well as the multiple services it provides, will be increasingly at financial risk. It is important that waste deliveries to this publicly-financed transfer station continue to be supported in the future by revenue streams from waste deliveries, in order to protect the significant public investment that has been made, and to allow the continuance of reliable, secure waste management, recycling and disposal services on behalf of the Region's residents and businesses.

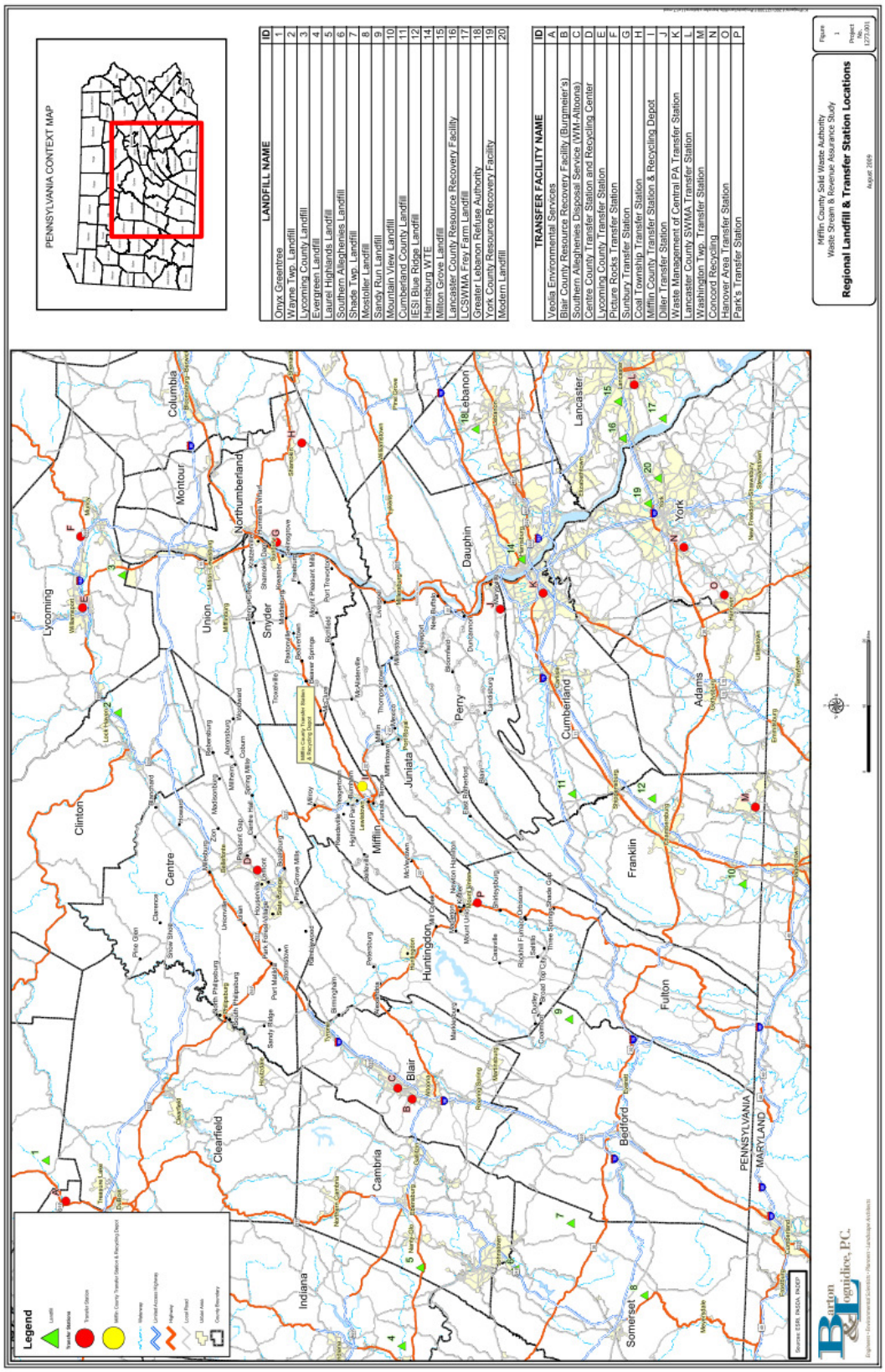
The Regional Marketplace – Disposal Facilities and Costs

As part of the Phase 1 Study for the Mifflin County Solid Waste Authority, Barton and Loguidice conducted an economic marketplace analysis to obtain the tipping fees for MSW from the disposal facilities in and around the Region. Phone calls were made to gather gate rates from all transfer and disposal facilities within the Region. The gate rates included in this Plan were the rates listed for a commercial contractor/ certified waste hauler disposing of municipal solid waste.

The gate rates included in this Plan do not account for any discounts given to haulers at the landfills or transfer stations. Typically, these sites offer discounts off the reported gate rates for preferred haulers, in other words, haulers that deliver large volumes of waste to the site. The MCSWA has reestablished large volume discount rates for haulers who bring a certain tonnage to the Transfer Station. This gate rate analysis offers a good relative (undiscounted) comparison of rates offered in the Region.

Appendix B and Figure 4-1, from the 2009 Phase 1 Study, shows the location of the Mifflin County Transfer Station and other transfer stations and landfills in the area surrounding the Region.

Figure 4-1 from 2009 Phase 1 Study – Regional Transfer Stations and Disposal Facilities Location Map



Mifflin County Transfer Station Gate Rates

The current (2012) large commercial hauler gate rate at the Mifflin County Transfer Station is $64.90 per ton. This is the non-contract gate rate for a PADEP-licensed hauler bringing Mifflin County waste to the Transfer Station. A complete rate schedule of MCSWA's 2012 tipping fees for various types of waste haulers is attached in Appendix J. We have also included the 2013 and 2014 rates, which demonstrate rate stability over the past three years. The MCSWA also offers discounted rates for haulers who will guarantee an annual waste volume of over 10,000 tons (contract required).

Gate Rate Comparison

Table 4-2 contains recent gate rates (2009) of landfills and transfer stations in the central Pennsylvania region, gathered during the 2009 Phase 1 Waste Stream and Revenue Assurance Study for MCSWA. The documented gate rates range from $45.00 per ton at the Bradford County Landfill to $88.55 per ton at the Diller Transfer Station in Cumberland County. The average gate rate at transfer stations in the surrounding region is $67.79 per ton. The average gate rate at landfills in the region is $53.92 per ton. It must be stressed that transfer station rates are higher than landfill rates, as the transfer station must also consolidate and haul the waste, in addition to paying for the landfill tipping fee. However, due to economies of scale, transfer stations offer inherent cost advantages in reducing the transportation costs for the local waste haulers. The 2009 MCSWA Transfer Station gate rate (and even the current 2012 rate of $64.90) for large municipal waste haulers was still less than the average gate rate charged by transfer stations in the surrounding area in 2009 (when the study was done), but was somewhat higher than average landfill disposal fees in the region, as expected.

Table 4-2 also lists gate rates for disposal of construction and demolition waste materials at transfer stations and landfills in the Region in 2009.

Hauling Distance Considerations

Figure 4-1 illustrates the proximity of regional landfills and transfer stations to Mifflin and Juniata Counties. Table 4-2 lists the travel distance from the MCSWA to the other transfer stations and disposal sites, which is also a good approximation of the

distance from the center of Mifflin County to the various sites. As this map and table show, hauling distance can be a significant factor in utilizing disposal sites by the Region's waste haulers. Other than the MCSWA Transfer Station, no in-county disposal sites for municipal waste exist in Mifflin and Juniata County.

The proximity of disposal sites to Mifflin and Juniata County is important. The cost of fuel, the travel time and distance to a disposal site, staff time tied up with hauling, and the wear and tear on the vehicles all impact the ultimate cost of utilizing that site. The local geography and road networks also make it more difficult to haul to some sites from the Region. The cost to haul waste to more distant disposal sites can offset the benefit of lower gate rates, as the distance to the disposal site with the lower tipping fee increases the hauling costs.

When the MCSWA's Barner Landfill closed in 2005, the MCSWA opened its transfer station with the primary purpose of providing economical hauling of Mifflin

County's (and Juniata County's) waste to out-of-county disposal sites (i.e. landfills). Utilization of the MCSWA Transfer Station allows hauling of larger loads of waste, offers a convenient local disposal site for Regional waste haulers, and is more efficient than driving local garbage trucks to out-of-county locations to unload. The lack of disposal sites in close proximity to Mifflin and Juniata Counties helps make the MCSWA's transfer station a competitive option for this Region's waste haulers.

An economic assessment of the estimated hauling cost from Mifflin and Juniata County to each of these distant sites was beyond the scope of the Phase 1 study, but a similar study conducted as part of the 2003 Mifflin County MW Plan confirmed the favorable economics of using the MCSWA transfer station versus the additional cost required for the Region's waste haulers to directly haul waste to these more distant out-of-county disposal sites. The results of this 2003 analysis are included again in Appendix J of this Regional Plan. It is believed that the results of this 2003 economic assessment are still valid, and given the recent increase in fuel costs, could even more significantly confirm the economic savings of transfer haul in the Region versus direct hauling of wastes to distant out-of-county sites in 2012.

Table 4-2:
2009 Regional Gate Rates For MSW and C&D Disposal

Facility	MSW Gate Rate (per ton)	C&D Gate Rate (per ton)	Notes	Distance from the MCSWA Transfer Station (miles)
TRANSFER STATIONS				
Lycoming County Transfer Station	$52.80		Does not accept C&D waste. All C&D waste is directed to the Lycoming County Landfill.	79
Southern Alleghenies Disposal Service (WM-Altoona)[3]	$64.00	$64.00		75
Park's Transfer Station[4,5]	$65.95	$80.00		28
Tioga County Transfer Station	$58.00		Over 4 tons of waste (MSW). Does not accept C&D waste. All C&D waste is directed to the Tioga County C&D Landfill.	111
Centre County Transfer Station and Recycling Depot	$70.00	$70.00		33
Sunbury Transfer Station[5]	$81.00	$81.00		47
Diller Transfer Station[2]	$88.55	$88.55	Over 1000 lbs of waste (MSW and C&D).	62
Waste Management of Central PA Transfer Station[1]				69
Burgmeier's Transfer Station	$65.78			
MCSWA Transfer Station	$64.00	$64.00		0
LANDFILLS				
Sandy Run Landfill[2,5]	$61.92	$61.92		71
Laurel Highlands LF[3]	$48.10	$48.10		124
Shade Landfill[3]	$49.66	$49.66		128
Southern Alleghenies Landfill[3]	$56.00	$56.00		123
Wayne Township Landfill	$59.50	$59.50		59
Lycoming County Landfill	$48.05	$48.05		62
Bradford County Landfill	$45.00	$45.00		133
Cumberland County Landfill	$63.10	$68.35		
Tioga County Construction. Demolition Landfill		$32.75		111

(1) Currently, the Waste Management of Central PA Transfer Station does not accept third party trash or recycling. They would not release their gate rate when called.

(2) Rates obtained through B&L phone call to facilities on September 10, 2009.

(3) Rates obtained through an email to B&L dated April 24, 2009.

(4) Rates obtained through B&L phone call to the facility on April 22, 2009.

(5) Rates obtained through B&L phone call to facilities on September 18, 2009.

Conclusions

Based on the tipping fee ranges obtained from phone calls to the MSW and C&D landfills, there is no significant disposal cost advantage to using one MSW landfill in the region over another, since the tipping fees at these facilities are reasonably consistent. Due to these similar tipping fees, the hauling costs incurred in transporting waste to a disposal site become a more important factor in determining the landfill selection economics for waste disposal by haulers in the Region. Also, large volume discount contracts now in effect (that were not in place in 2009), between the MCSWA and multiple haulers, make use of the MCSWA Transfer Station even more cost-effective for large haulers (10,000 tons per year minimum), and allow MCSWA to offer some economic benefits to all transfer station users, as a result of economies of scale in its operations. These three-year contracts expire at the end of 2012, and MCSWA intends to extend these contracts through December 31, 2014 with any major waste hauler that qualifies, to secure large quantities of waste being delivered to the MCSWA Transfer Station, and to bring these contracts into synchronization with the initial year of the new Regional Plan.

All disposal sites have the opportunity to discount disposal fees to waste haulers, and this is one of the regional marketplace's normal functions, but this information (discounts offered to individual haulers) is difficult or impossible to obtain from other disposal sites and transfer stations, and is often given on a case-by-case basis. Still, based on reported gate rates listed in Table 4-2, general conclusions can be drawn. Based on the locations of the MSW landfills, as shown on Figure 4-1, as well as their reported tipping fees, it is economically beneficial for Regional municipal waste from most areas of the two counties to be delivered to the MCSWA Transfer Station, for subsequent transfer-hauling and disposal at an out-of-county disposal site.

4.3 Solicitation of Interest (SOI) For Disposal Capacity

In order to ensure additional municipal waste processing and disposal capacity for the Region and its municipalities from years 2015 through 2024, there is a need to reserve disposal capacity from municipal waste processing and disposal facilities. The capacity reservation needs to be, at a minimum, for 477,300 tons of net MSW discards (including C&D waste), which is the tonnage projected to be discarded over the formal ten-year planning period of 2015 through 2024 (Table 4-1). Greater

disposal capacity assurance is recommended. Until 2015, it is recommended that current disposal contracts, that are scheduled to expire soon, be extended by mutual agreement of the counties and the disposal sites, to ensure available disposal capacity until 2015.

The Solicitation of Interest bid document for municipal waste disposal capacity assurance for the two-county Region (in general) is required by PADEP (even with the new Transfer Station bid contract), and is included in Appendix K. The Solicitation of Interest (SOI) was issued by Barton & Loguidice, P.C. in November 2013 to solicit responses from interested parties to negotiate an agreement for providing processing and/or disposal capacity for municipal solid waste (MSW), including construction/demolition (C/D) waste, sewage sludge, and other "special handling" municipal wastes generated in the Region. This SOI also contains a request for optional support for a Regional Integrated Waste and Recyclables Management Program (IWRMP) in the two-County Region, to help stabilize, expand and enhance current programs. This SOI process was conducted in accordance with PADEP requirements for a fair, open, and competitive solicitation. Submittals were received in December 2013.

A list of all facilities that delivered Submittals in a timely manner in response to the SOI is presented in Table 1 in Appendix K. Each of the eleven (11) SOI Respondent disposal sites were found to meet the minimum requirements for consideration as Designated Facilities in the Regional Plan. Disposal Capacity Assurance Contracts were sent out in March to each of the eleven (11) facilities, and contracts were scheduled to be executed in April/May 2014 by Mifflin and Juniata Counties with each disposal facility.

Also, MCSWA has a current contractual agreement with Waste Management for disposal of all municipal waste from its Transfer Station through December 31, 2014, which effectively secures disposal capacity for the Region during the transitional period of 2012 through 2014, via the MCSWA Transfer Station. This haul/ disposal contract with the MCSWA Transfer station was rebid in November 2013, for a company to provide these same haul/ disposal services for the MCSWA Transfer Station from 2015 through 2024, with an effective start date of January 1, 2015. Haul/disposal proposals were received by the MCSWA in December 2013, and reviews of the proposals have progressed. MCSWA expects to enter a new

haul/disposal contract by May/June of 2014. The Request for Proposals (RFP) for this new haul/ disposal contract solicitation is included as Appendix L.

4.4 Septage and Sewage Sludge Considerations

Septage and sewage sludge handling in the region is handled by parties other than the counties. As projected in Section 1.6.4 of the Regional Plan, nearly 3.4 million gallons of septic tank pumping may be generated in the region annually. Private septage haulers currently take these wastes to treatment plant that accept septage (see Tables 2-2 and 2-3 of the Plan), or land apply the wastes under a state permit. It is not expected that this practice will change any time soon. Sewage sludge, or biosolids, the solids byproduct of wastewater treatment, are disposed of in a variety of ways, including landfilling, land application, delivery to another treatment plant, or reed beds, as identified in Tables 2-2 and 2-3. Almost no treatment plant reported (in response to a survey conducted as part of this Regional Plan) any desire or plan to change its current handling method for its sewage sludge.

Therefore, no need has been identified for county assistance with septage or sewage sludge disposal. Since some wastewater plants use landfills for disposal of dewatered sludge cake, the counties may wish to include sewage sludge landfilling in its upcoming SOI bidding for disposal services.

4.5 Residual Waste Considerations

Residual waste generated in the Region was disposed of primarily at six disposal facilities in 2012. The breakdown of residual waste quantities by facility is presented in Section 2.8 of Chapter 2. The Counties do not regulate, nor are they required to manage, residual waste disposal. According to the PADEP County Waste Destination Report and the MCSWA Act 101 Reports, approximately 3,000 tons of Regionally generated residual waste was disposed in 2012.

As part of this Plan Update, the Regional Solicitation of Interest (SOI) for waste disposal services may include, as a courtesy to residual waste generators, a request for respondents to specify the maximum amount of residual waste that could be accepted by the facility, as well as an estimation of the “not to exceed” per ton annual tipping fee offered for residual waste disposal.

5.0 Waste Management System Alternatives

The purpose of this chapter is to examine processing and disposal alternatives for municipal waste from the Region, determine the compatibility of each alternative with the existing components of the waste and recycling systems in the Region, and assess the feasibility of using those alternatives to help meet the future needs of the Region. This chapter also addresses waste flow control considerations and alternatives as they relate to the Mifflin-Juniata Region.

5.1 Introduction

In 2012, it is computed from DEP records that Mifflin and Juniata Counties generated a total of 44,539 tons of net discards of MSW (including construction and demolition wastes, but excluding special handling wastes) that were disposed of in area landfills (gross discards – recycling = net discards). Approximately 96 percent of these total net discards were processed through the MCSWA Transfer Station and subsequently disposed of at the Laurel Highlands Landfill. The remaining wastes were hauled directly to the Laurel Highlands, Sandy Run, Cumberland County, and Clinton County landfills in 2012.

The MCSWA has entered volume discount waste delivery contracts with any waste hauler that can commit at least 10,000 tons of waste annually to the MCSWA Transfer Station, and that can agree to standard contractual terms with the MCSWA. In exchange for this waste commitment, large haulers are eligible for discounted tipping fees at the Transfer Station. These volume discount contracts also provide indirect benefits to all haulers using the Transfer Station, due to economies of scale in the MCSWA operations. Initially, the MCSWA has entered large volume discount contracts with Park's Garbage Service and Cocolamus Creek Disposal that ran through the end of 2012. MCSWA then renegotiated these contracts through the end of year 2014, and is now in the process of establishing new three-year large volume discount waste delivery contracts that will begin in 2015. Currently, the waste from the MCSWA Transfer Station is delivered to the Laurel Highlands Landfill for disposal, under a contract with Waste Management that is scheduled to expire at the end of 2014 and that has recently been rebid (as discussed in Section 4.3 of Chapter 4).

Waste haulers that currently operate in Mifflin County can select from a "menu plan" list of approved municipal waste disposal sites, with whom the County entered a waste disposal contract under the 2003 County Municipal Waste Plan Update (there is no minimum waste delivery commitment on the County's behalf under these disposal capacity assurance contracts). Waste haulers that operate within Juniata County may use any available facility for municipal waste disposal, provided it is a PADEP-approved site. Further, as part of the 2003 Juniata County Municipal Waste Plan, the County entered contracts with two landfills (with no waste delivery commitment on the County's behalf) to secure the PADEP-required waste disposal capacity assurance for Juniata County. A new Solicitation of Interest (SOI) was released in November of 2013, with bids received in December 2013; new contracts are currently being executed for Disposal Capacity Assurance for the 2-County Region, with services beginning in early 2015 (as discussed in Section 4.3 of Chapter 4).

Landfills that have accepted municipal waste from the two-county Region, as reported in PADEP waste destination reports (circa 2007-2013) include: Cumberland County Landfill, Laurel Highlands Landfill, Sandy Run Landfill, Clinton County Landfill, and the Lycoming County Resource Management Services Landfill. As reported earlier, the Mifflin County (Barner) Landfill closed in October 2005. Appendix M lists the landfills which recently reported to PADEP that they are receiving waste from the two-county Region as well as the tonnage of waste each landfill accepts.

5.2 Waste Flow Control Considerations

5.2.1 Waste Flow Control – The Law

Many legal and regulatory actions have impacted the ability of counties to control waste and collect fees for the proper management of recyclable and disposable materials. In 1994, the U.S. Supreme Court issued a wide-reaching flow control decision in C. & A. Carbone, Inc. et al., v. Town of Clarkstown, NY, which was subsequently interpreted by lower courts to place serious limitations on the use of County waste flow control ordinances. It effectively resulted in a change of many county solid waste plans, from stringent flow-control-based plans to more open "menu plans." The 2007 United Haulers Association, Inc., et al. v. Oneida-

Herkimer Solid Waste Management Authority, et al. U.S. Supreme Court case provides relief from the Carbone ruling, in cases of publicly-owned waste management facilities and flow-control powers of public entities. Oneida-Herkimer's application to current flow control options is further explained in the section below on Legislative Flow Control.

5.2.2 Flow Control Alternatives

Generally, there are three types of waste "flow control" that have been practiced, with varying degrees of success, in the United States.

1. ***Legislative Flow Control*** consists of laws and regulations that are enacted at a local level to mandate the delivery of the waste to a destination point (e.g. to a landfill, transfer station, waste-to-energy facility, etc.). This form of flow control was determined to be unconstitutional by the U.S. Supreme Court in the Carbone case, in which the local flow control law was found to benefit a local business interest. In 2007, however, in the Oneida-Herkimer case a local flow control law was upheld that directed locally generated waste to a publicly owned facility. Thus, legislative flow control has now been determined to be legal if the County implementing the flow control legislation is directing its waste to a publicly owned facility and if it can demonstrate environmental benefits to the public. The Oneida-Herkimer case involved two counties that had decided to work together to implement a long-term solid waste management plan for the benefit of their citizens and the environment. While every situation is unique based on local circumstances and decision-making, a similar flow control arrangement could be undertaken as part of the implementation of this plan. This type of flow control is commonly implemented through a county ordinance, along with other coordinated steps.

2. ***Economic Flow Control*** occurs when the waste management system is structured to provide the most economical means of waste management at the designated facility. As an example, if tipping fees at the designated facility can be reduced (generally through subsidies from other revenue sources) to a point where it is more economical for haulers to take waste to the designated facility (with a reduced tip fee) than elsewhere, then economic

flow control can often be achieved. One way in which this has been accomplished is to finance some facility costs by incorporating revenues via the tax base to cover capital costs of the facility, rather than wrapping both capital and operating costs into the tipping fee. When this is done, the resulting tip fee can be lowered or eliminated altogether. In this arrangement, a hauler has a distinct economic incentive to deliver waste to the facility with a reduced tip fee. Another way to help accomplish this form of waste security is to operate more efficiently and to control costs, in order to offer more competitive, economical tip fees than the competition.

3. ***Contractual Flow Control*** occurs when an entity (such as a transfer station or disposal site) contracts directly with haulers to provide transfer haul and/ or disposal services under pre-established compensation terms (i.e. tip fees). Contractual flow control has been the most commonly used method to secure long-term delivery commitments for waste to facilities since the Carbone ruling in 1994. The large volume discount contracts that the MCSWA offers are a form of contractual flow control.

Another way to accomplish contractual flow control that is commonly utilized is through a "municipal waste collection bid contract". In Pennsylvania, a municipality is responsible for the health, safety and welfare of its residents, and it has the power to insure the proper handling and disposal of wastes that are generated from within its borders through a municipal waste (and recyclables, if desired) collection and disposal contract. This contract can include the designation of the facility or facilities where the municipality requires the waste (and recyclables) to be contractually delivered to. If, for example, all municipalities within a county designated a certain facility to receive their wastes, this would in essence control the flow of all regulated waste from within that county to the facility by contract. Similarly, school districts, businesses, industries, etc., that typically contract for waste collection, can also designate the services they require and the disposal site for collected waste (and recyclables), if they wish to do so.

5.3 Flow Control Considerations in This Regional Study

The 2009 Phase 1 Wastestream and Revenue Assurance Study (see Appendix B) suggested the continuation of large volume discount contracts for waste deliveries to the MCSWA, with county flow control by ordinance as a backup contingency measure, in case these volume discount contracts could not be sustained by the haulers and the MCSWA over the long term (as has happened in the past). During the Regional Plan development, Barton & Loguidice seriously evaluated the prospect of continuing the large volume discount contracts, together with a county flow control ordinance, as a "belt and suspenders" approach, with the goals of 1) imposing little or no change on the current practices of haulers, and especially the major waste haulers (due to the continuation of the large volume discount contracts), and 2) giving the two counties added security through a flow control ordinance that the waste from their counties would be delivered to the MCSWA Transfer Station, even if the large volume contracts failed to continue for the long term.

However, through research, it is not believed that the Authority would be allowed to continue to offer large–hauler-only volume discount contracts, together with a legislative flow control program. It is believed that Counties would be required to offer a tip fee discount or rebate to any and all haulers (regardless of size of volume delivered) that enter into a contract to comply with the terms of the legislative flow control (LFC) program. It is also believed that this would result in a "watering down" of the discounts that could be offered by MCSWA to large volume discount haulers, due to the need to continue to insure financial sustainability to the Authority while offering discounted tip fees to essentially all haulers using the MCSWA Transfer Station. This lessening of the large volume discounts may not provide enough financial incentive to large volume haulers (in the haulers' opinions) to continue encouraging voluntary waste deliveries and LFC compliance by the large haulers. Where legislative flow control has worked best under the Oneida-Herkimer U.S. Supreme Court ruling, in New York counties (such as Oneida, Herkimer, Madison, and Franklin Counties), in all of these situations the major waste haulers have been in agreement with and in voluntary compliance with the flow control programs. It is not necessarily believed that this will be the case if LFC is implemented in Mifflin and/ or Juniata Counties, which may lead to additional enforcement issues and legal costs by the counties. A lack of voluntary compliance by major waste haulers in a LFC program in Mifflin and Juniata Counties could actually have a counterproductive

influence on waste deliveries in the Region, by potentially driving some wastes away (even if illegally done) from the transfer station.

Through this in-depth research and consultation with counsel for the MCSWA, it has been concluded that this specific combination of legislative and contractual flow security scenarios are probably not implementable in Mifflin and Juniata Counties at this time. At a minimum, it might open the counties up to potential legal challenge (either due to continuation of large volume discount contracts, or through challenges from waste haulers that ignore flow control laws. Rather, it is believed that it is best to make all possible efforts to continue to encourage voluntary waste deliveries to the MCSWA Transfer Station, including large haulers through the Authority's volume discount program, as long as the large haulers cooperate. Small haulers come to MCSWA out of convenience and a lack of other practical alternatives, and it is believed that the small haulers will continue to use the MCSWA Transfer Station under multiple scenarios.

B&L believes that if practical, it is preferable to keep the larger haulers (and all haulers) in voluntary compliance with bringing wastes to the Authority's transfer station, as is currently done through the large hauler volume discount contracts, and to continue to offer the associated financial benefits that can be provided to all haulers as a result of the Authority's processing of larger waste quantities. However, if large haulers choose not to continue to participate in the volume discount contracts in the future, this Joint Plan Update should provide the tools for enactment of a contingency plan of waste delivery assurance. If this scenario happens in the future, provisions should be made in this plan now to allow Mifflin and Juniata Counties to easily enact the necessary regulatory and legislative steps to implement LFC as a contingency strategy, to replace the large volume discount program (should that preferred approach fail to continue to function in the future). This strategy will provide the Authority and the Counties with a primary as well as a fall-back strategy to secure waste tonnage deliveries the MCSWA Transfer Station, which will in turn help assure MCSWA's financial solvency and long-term sustainability as a key integrated waste and recyclables management service provider to the Region's residents and businesses. **Again, Legislative Flow Control is only recommended here as a contingency measure, and not the preferred manner of voluntary contractual flow control in the Region.**

5.4 Collection Alternatives

5.4.1 Municipal Solid Waste (MSW)

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

1. Municipalities can contract via a public bidding procedure with a private waste hauler to provide refuse collection services to their residents (and institutions and small businesses, typically). This is referred to as ***contracted collection.***
2. Individual households and businesses can each contract directly with a private waste hauler for refuse collection services, with limited or no municipal involvement. This is referred to as ***subscription collection.***
3. A rural drop-off site/transfer station can be used in sparsely populated areas of a county, to provide some means of waste collection and proper disposal, and as an alternative to open dumping or open burning. Residents bring their waste to the site, and place it in a bin or compactor. The full bins are then hauled, either by the municipality or under contract with a private hauler, to a disposal site for proper disposal. This is referred to as ***drop-off/transfer collection.***
4. The municipality itself (or a series of municipalities can join together) can provide the collection and transportation of MSW to the disposal site. This is known as ***municipal collection.***

Lewistown Borough is the only municipality within the Region that uses municipal collection. A program of this type requires significant capital costs for equipment, along with municipal staffing commitments, and therefore it is often not economically feasible for smaller municipalities within the Region to employ this method of collection.

The Borough of Juniata Terrace in Mifflin County and the boroughs of Mifflintown and Mifflin in Juniata County, use contracted collection for curbside waste collection. These three boroughs bid for waste collection services and chose a single hauler to collect waste curbside from the residents within their boundaries.

Mifflintown Borough and Mifflin Borough included an option for curbside recyclables collection in their bids, but chose not to include this service in their final contractual agreement between the boroughs and the haulers. Juniata Terrace has included recycling options in their "Request for Proposal" for services in the past, but found it was not economical. However, they do direct their waste (in the contract) to the MCSWA Transfer Station.

Subscription collection is the most common method of waste collection within the Region. In this method of collection, residents, commercial, industrial and institutional customers contract directly with private haulers. With the exception of Lewistown Borough, the Borough of Juniata Terrace, Mifflintown Borough and Mifflin Borough, all of the municipalities within the Region use subscription waste collection. The advantages of subscription collection include:

- Competition – subscription collection encourages the entry of multiple haulers into the market. This can provide competition among the haulers servicing a certain municipality, and haulers may offer various service options to residents, with variable costs associated with each service option. Subscription collection allows residents to choose their trash hauler and collection option, at a cost they are willing to pay. However, subscription collection may not be the most efficient and cost-effective collection option, and sometimes only one private hauler services a geographic area, effectively eliminating the competition factor.
- Recycling – Most haulers that operate by subscription offer a range of services, including various types of "pay-as-you-throw". Customers who recycle can thus see an economic benefit related to reduced waste material (as they reduce the number of bags of waste generated). The numbers of subscription haulers in the region that currently offer curbside recycling collection along with waste pickup are limited.
- Local Markets – Most local haulers do business with other local businesses; consequently, they are integrated into the economies of the local communities they serve.
- Small Business – Because of the competitive nature of subscription collection, small "mom-and-pop" haulers (that have lower overhead costs) can compete successfully with larger companies for customers.

- Minimal Municipal Involvement – Subscription collection requires the least municipal involvement of all the collection methods. Subscription collection does not require the municipality's involvement in bidding for services or collecting fees, which can be a benefit to understaffed municipalities, unless they already bill residents for other municipal services (e.g. sewer, water) and have qualified staff to manage waste collection and/or recyclables contracts.

The disadvantages of subscription collection include:

- Increased Truck Traffic – In areas serviced by subscription collection, haulers may be collecting waste in one municipality, even on one street, Monday through Saturday. Multiple haulers serving one area often means multiple days of collection, therefore creating increased truck traffic, air pollution and noise pollution.
- Inefficiencies in Collection – Multiple haulers may lead to inefficient collections and/or missed collections within a municipality. Where there are inefficiencies in collection, some subscription haulers may not be able to offer services for the same price as one hauler who serves an entire area.
- Rural Collection – It may not be economically feasible to collect waste in rural areas through subscription collection due to the limited number of residents available to be served and the length of travel distance between collection routes. Hence, depending on their location, certain households may not be able to find any refuse collection companies willing to service their location.
- Unwillingness to Provide Added Services - such as curbside recycling, since this often carries an additional cost (which is optional) to the homeowner, and homeowners often do not opt to voluntarily pay additional fees.

Although the current collection system in the Region has some advantages, there are also disadvantages that a municipality may want to address. To do this, municipalities within the Region may want to consider municipal bidding for

contracted collection of residential/ institutional/ small commercial customer waste pickup. Three (3) of the municipalities within the Region currently bid for contract waste collection services. In many situations, refuse collection fees decrease when local governments contract for refuse collection services (contracted collection) on behalf of their residents, as opposed to individual subscription collection. This often occurs because, when a municipality bids for collection services for an entire area, the hauler can offer services more economically, since they are guaranteed to pick up all customers within that area, and may service a larger number of customers (economies of scale) than may be possible with subscription service.

In addition to the potential financial benefits of contracted collection, there are other additional advantages as well:

- Control of Collection Services - contracted collection with private haulers allows local governments to indicate the types of collection services to be provided under contract (unlimited collection, pickup with can limits, or straight pay-as-you-throw; bundled curbside recycling services with the waste collection; with or without direct customer billing; with or without disposal costs included; with reporting requirements for wastes and recyclables collected; etc.).
- Designation of a Disposal Facility - a municipal waste disposal contract can also (but does not have to) designate the disposal site or sites where the municipality wishes the contracted hauler to dispose of the municipality's waste, and can also designate a site where the recyclables are to be taken (if part of the contract). Sometimes, haulers are hesitant to support contracted collection programs because they may be perceived as favoring larger haulers that have larger fleet and staff capabilities, or because the contract may contain contract requirements (services, insurances, guarantees, etc.) that small haulers cannot easily comply with.
- Reduction in Waste Vehicles – contracted collection can reduce the number of waste vehicles within a municipality as compared to subscription collection, which results in more efficient collection with less truck traffic, road wear, air pollution and noise.

- Reduction in Illegal Dumping Activities - contracted collection can also help limit the occurrence of illegal dumping, as residents with this form of collection are provided with consistent and reliable refuse collection services, have no incentive not to use the waste pickup service that they are already paying for, and therefore are less likely to illegally dispose of waste and/ or accumulate waste for long periods of time.

There are also disadvantages to contracted collection. These include:

- Reduction in Solid Waste Haulers - Contracted collection may take business away from haulers servicing that municipality, if the hauler is not the chosen waste hauler to serve the community. In some situations, this may lead to smaller haulers no longer doing business within the Region.
- Increased Municipality Involvement – Contracted collection requires more involvement on a municipality level. Municipalities are often responsible for collecting the fees from residents associated with their waste service, as well as handling complaints and general residential issues relating to contracted waste and/or recycling collection. This may require more municipal staff effort or actual staff.
- Rural Collection - a municipality that is more rural in nature may not benefit from contracted collection. Residents may be required to pay a higher rate for waste and/or recyclables collection due to the nature of the collection routes and haulers may not even bid on providing curbside collection service in some rural areas, similar to a subscription hauler's reluctance to serve some very rural areas. There also may not be a large enough population to justify contracted collection.

In some very rural areas, haulers, whether under contract or by subscription, may not want to service an area due to the long distances between customers, poor roads, mountainous conditions, or distances between the service area and their operations yard and/ or a landfill. In these areas, a rural drop-off/collection site for MSW may be the only practical solution. At this time, there are no rural drop-off/collection sites operating in the Region. In addition, these types of facilities

are reportedly not currently being permitted by PADEP, although a number of rural transfer stations currently operate in the North-central region of the State.

In counties such as Mifflin and Juniata with sparse populations, municipalities may also want to consider contracting specific routes within an area of a county that is broader than just one municipality, to one or to multiple haulers. Where subscription service to a rural area may not be economical, a defined route with customers may make the economics work for some haulers. For example, within a county, five different private haulers may service their municipalities. If a county would pursue this method on a county-wide basis, they could develop waste hauling routes that divide their county into distinct areas for waste haulers to service. This scenario can often provide waste collection service for residents who were not previously obtaining it due to their location within the county. If the two counties within this Regional Plan would decide that contracted collection through a County contract is an idea worth pursuing, the counties may be able to coordinate collection with private haulers in multiple municipalities in a county or within both counties of the Region, thus potentially further decreasing the cost of refuse collection for residents, and in turn increasing the efficiency and safety of collection for the waste haulers.

The 2009 Phase 1 Waste Stream and Revenue Assurance Study, included here in Appendix B, conducted an analysis of the potential financial and service (i.e. bundling of services for a Region) benefits of multi-municipal bidding for waste and recyclables collection services. This analysis identified potential financial and service-level benefits that are possible through a multi-municipal collection contract bid with a private service provider.

5.4.2. Recycling

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

Regarding curbside collection of recyclable materials, three set-out methods can be used: source-separated, dual-stream, and single-stream. Source-separated and dual-stream recycling require greater effort by the customer and hauler, but the recycling facility's processing effort is decreased. Single-stream recycling involves much less effort by the customer and hauler, but requires a more complex processing system and greater effort at the recycling facility to process the mixed recyclables.

The Borough of Lewistown offers a source-separated curbside recyclables collection program. Lewistown's program collects the following materials at curbside: newspaper, clear glass beverage containers, #1 and #2 plastic containers, steel cans, and brown glass. Lewistown Borough also hosts a drop-off site at its Public Works Yard, where these and other materials are collected. The Lewistown Borough recycling program is described in detail in Section 3.4.4 of Chapter 3, and the recyclable materials accepted at its drop-off site are listed in Section 3.2.

Currently, Park's Garbage Service offers single-stream curbside recyclables collection for its residential customers in certain municipalities in Mifflin County (Park's picks up recyclables on a separate day from trash pickup). Cocolamus Creek Disposal (CCD) offers single-stream curbside recyclables collection through a "buy-a-bag" recycling pickup service in Juniata County. Residents purchase bags at various locations in Juniata County and use this bag for their recyclables. These bags are placed curbside with their refuse for collection by the waste hauler. CCD has established specific routes in Juniata County where it offers weekly recycling bag pickups. CCD separates the recyclables at its own facility in McAlisterville. Park's Garbage Service combines collected single-stream materials into a transport trailer located at its transfer station in Mt. Union, PA. The trailer is provided by Penn Waste for transport to its Single-Stream Recycling Facility near York, PA.

Source-separated recycling requires residents to separate their recyclables into separate containers at the curb. This method makes processing much simpler and inexpensive, and tends to result in a cleaner recyclable material collected (which improves market value). Dual-stream recycling is similar to source-separated recycling, with the recyclables commonly separated into 2 categories:

bottles/ cans and paper fiber. Dual-stream recycling typically has the same benefits as source-separated recycling, but the collection method is slightly different. For example, glass and plastics may go in one container while paper fiber (cardboard, newspaper, etc.) go in another. Both source-separated and dual-stream recycling operations require the hauler to either place recyclables from the curb into different containers in the recycling truck, or to make multiple collections, for transportation and delivery of the material to the recycling center.

Single-stream recycling collects all of the recyclable materials in a single container at the curb. Some of the benefits of single-stream collection are ease of separating in the home, higher residential participation rates, higher quantities recycled, increased collection efficiency and the ease in which a municipality can incorporate small businesses and multi-family units into the program. Some of the disadvantages of single-stream recycling include lower recyclable material quality (which leads to lower market revenues), higher capital processing costs, decreased quality control at the curb, increased product contamination, increased transportation costs (if hauling to a distant processing site), and the potential to have to dispose of more material due to the contamination factor. Both dual-stream and single-stream collections require access to materials processing facilities in the region that can receive and further process the collected mixed recyclables. Source-separated collection programs can often be delivered directly to intermediate markets, either in gaylord boxes or after baling or other densifying or size reduction steps.

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

In many areas of the Region, the only residential recyclables collection service that is offered is through the recyclables drop-off site option provided by MCSWA or by collection by a private hauler. There are currently nine (9) publicly accessible recyclables drop-off sites provided by MCSWA that are scattered

throughout the Region, as listed in Appendix H. These drop-off sites currently allow the public to deposit recyclable materials at no charge 24 hours per day. There are also a number of privately owned and operated recyclables drop-off sites throughout the Region that allow public access. These private drop-off sites may accept a more restricted list of recyclable materials, may have more restricted access hours, may charge drop-off fees to customers, or may pay for drop-off of certain recyclables. These privately owned, publicly accessible drop-off sites are listed in Appendix H. In addition to publicly accessible recyclables drop-off sites, the private sector also offers curbside recyclables collection to residents along certain routes in Juniata County and to residents of Wayne Township (specified areas only), Newton Hamilton Borough, Kistler Borough, McVeytown Borough and Derry Township in Mifflin County. Additionally, Lewistown Borough has an Act 101-mandated curbside recyclables collection program, provided by municipal collection crews, as described earlier.

As mentioned above, the collection service offered to residents differs depending on the municipality. In Lewistown Borough, the curbside collection of recyclables is done by the municipality and the residents pay a given amount to the municipality for this service. In other municipalities, recyclables collection is offered through the waste haulers, either through a subscription service or by contract with the municipality; the cost for the program is included in the resident's subscription cost with the haulers or, in some cases, may be billed to residents by the municipality. The municipalities and service routes with mandated and voluntary curbside recyclables collection are identified in Appendix H.

A list of the municipalities with existing municipal solid waste ordinances and/or regulations in effect in Mifflin and Juniata Counties are presented in Appendix G.

5.5 Transportation Alternatives

In June 2002, Pennsylvania approved amendments to the existing solid waste management statutes (adopted as PA Act 90) that, among other provisions, established a statewide waste transportation safety program, including a registration program for all waste haulers doing business in Pennsylvania. Any waste hauler with a GVW (gross vehicle weight) of over 17,000 pounds, and trailers with a

registered gross vehicle weight greater than 10,000 pounds that transport municipal or residual waste to a waste processing or disposal facility in Pennsylvania, must have a valid Waste Transporter Authorization issued by PADEP. This program is administered by the State and prohibits counties or municipalities from implementing any new municipal waste or residual waste transportation authorizations or licensing programs (note – since the Act 90 program relates to licensing of larger waste vehicles, it leaves open the possibility of establishing a separate local licensing program for waste vehicles with less than a 17,000 pound GVW). Based on this legislation, all larger haulers doing business within the Region need to meet the requirements of the State program, and hauler data collected from the State program is available on the PADEP website at:

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

The law prohibits processing and disposal facilities from accepting waste from regulated waste transportation vehicles that do not have a valid authorization.

Some counties in Pennsylvania continue to register (as opposed to licensing) haulers, at minimal (or no) fee (dependant on the GVW of the vehicle), to help ensure that basic information on the haulers, the municipalities served and the materials collected, is reported to the county or municipality regularly. Neither Mifflin nor Juniata County register's waste haulers that operate within their borders.

5.5.1 Municipal Solid Waste (MSW)

Under Act 101, it is the responsibility of each municipality to provide for the proper collection and transportation of municipal waste generated from within their municipal borders. There are three (3) ways that waste can be transported to a disposal facility. Residents or businesses can transport their waste directly to a disposal facility; waste haulers can collect waste at curbside and transport it to the site, or; municipalities can collect waste at curbside and transport it to a disposal site. A "disposal" facility in this context can be a regional transfer station, a convenience center (i.e. a rural transfer station), a landfill, or another type of permitted processing or disposal facility. Most convenience centers only accept waste from residents and businesses. All municipal waste generated within the Region must be transported to a County-designated disposal facility, in

accordance with the county's solid waste management plan, with larger haulers duly licensed by the State as required by Act 90.

Currently, all municipalities within the Region, with the exception of Lewistown Borough, rely on either direct hauling by the generator or private subscription services for transportation of MSW from the curbside to a waste transfer or disposal facility. Lewistown Borough hauls its waste to the MCSWA Transfer Station using municipal trucks and curbside collection of MSW, as do most private haulers operating in Mifflin and Juniata Counties and most self-haulers of waste. Haulers serving the extreme western portion of Mifflin County may utilize the Park's Sanitation Service Transfer Station in eastern Huntingdon County.

Within the geographic boundaries of the two-County Region, the MCSWA Transfer Station is the only permitted transfer station. No rural transfer stations/ convenience centers currently exist in the Region.

5.5.2 Recycling

As with MSW, recyclables can be transported in three ways to a disposal facility: using self-haul by residents and businesses, by private waste haulers, or by municipal crews. A disposal facility in this context includes a drop-off site, a transfer station, a rural convenience center, a materials recovery facility (MRF), or other suitable facility. Ultimately, the goal is for all segregated recyclables to be shipped to markets for reuse, or reused locally (such as inert materials that can be used for pipe bedding or aggregate).

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

Drop-off locations can be permanent sites or mobile sites. Permanent drop-off sites are sites which contain recyclable drop-off containers at the same location year-round. Each drop-off site operates with specific hours and days of operation; this information is often available by calling the local municipality. A permanent drop-off site may be located at a municipal building, a local park, a local business parking lot or similar locations within the municipality. Mobile drop-off sites are typically moved from location to location, in order to offer recyclable collection to the maximum number of residents and geographic areas. Mobile sites may be beneficial in rural areas where a permanent site is not feasible, but where the residential desire to recycle more material is high. There are currently no mobile drop-off centers located in the Region. Appendix H shows the location of the recyclables drop-off sites throughout the Region.

Each permitted landfill and transfer station in Pennsylvania is also required by Act 101 to provide a permanent recyclables drop-off site at or near its facility. Residents, businesses, haulers and municipalities can also transport their recyclables to these drop-off sites. There is one permitted transfer station within the Region, the MCSWA Transfer Station, with a permanent drop-off site on its premises. Access to the drop-off site is only available during the transfer station's business hours. This facility acts as a drop-off location within a larger facility for residents and businesses, while haulers and municipalities who haul recyclables can bring larger loads to these facilities for sorting and processing. Transfer stations often have the capability of processing recyclables on-site (i.e. sorting, baling, compacting, etc. and subsequently transporting these recyclable materials to the best available markets).

Residents and businesses can also transport their recyclables to rural convenience centers as well. Convenience centers are often used to maximize the amount of recyclables collected as well as increase the convenience of recycling for residents. Convenience centers are located in more rural communities where a hauler typically will not collect residential MSW and/or recyclables, and residents in turn can deliver their MSW and recyclables to the convenience center. The convenience center may sort the material and possibly process some materials before loading trucks and delivering these materials to a transfer station or MRF for further processing and sale. Convenience centers offer an incentive for residents to collect and transport their recyclables because

the hauling distance to the convenience center are typically far less than the distance to the nearest transfer station, MRF or landfill. As noted above, there are currently no convenience centers/ transfer stations in the two-county Region.

Most recyclable materials are not immediately useful to manufacturers in the form in which they are collected. Collected materials must usually be processed to remove contaminants, be sorted by material type, and be baled or densified (if required) for shipping to market. Prior to passage of Act 101, scrap yards and recycling centers had been accepting recyclable materials from businesses and the public and preparing it for sale to manufacturers. In some cases, the recovered material can bypass these intermediaries, going directly from the collectors to the end user of the recycled material (usually to make new products).

Buyers typically prefer doing business with a supplier who can be relied on to provide a large flow of materials that is consistent in both quantity and quality. Such a function, beyond the capacity of most individual municipalities, is often fulfilled by private intermediate processors or by public, multi-municipal facilities.

In recent years, there has been a growth in the size and number of recyclables processing facilities, commonly known as materials recovery facilities (MRFs). Less frequently, these facilities are referred to as intermediate processing centers (IPCs). A MRF can accept recyclables from residents, businesses, institutions or haulers. Such facilities typically accept a variety of recovered materials from municipal recycling programs and commercial waste recovery efforts. After receipt of materials, the MRF processes the material to consolidate the recyclables, upgrade its value, and ship it to final markets when sufficient quantities have accumulated. Most recycling facilities have the capability to sort commingled glass and metal containers. Some can also sort paper into several grades.

A MRF can be classified as “clean” or “dirty”. A “clean” MRF accepts recyclable materials that have been segregated from MSW by residents prior to delivery, or that have been placed separately at the curb for pickup. Recyclables are usually sorted, baled, shredded, crushed, or otherwise processed for shipment to the best available market. “Dirty” MRFs, on the other hand, accept a mixed solid

waste stream, and they separate out designated recyclable materials from the MSW through a combination of manual and mechanical sorting. The sorted recyclable materials are further processed for shipment to the best available markets, while the remaining residuals from the sorting process are sent to a transfer station or landfill. There are currently eight "clean" MRFs located within the Region. These MRFs are discussed in Section 3.6 of Chapter 3. The materials accepted at the MRFs located in or near the Region are listed Chapter 3, Section 3-2.

5.5.3 Existing Transfer and Haul Facilities

There is currently one existing municipal waste transfer station in the Region, the MCSWA Transfer Station that is owned and operated by the Mifflin County Solid Waste Authority in Derry Township, Mifflin County. Parks Garbage Service operates a transfer station to the west of Mifflin County in Huntingdon County, and the Centre County Solid Waste Authority operates a waste transfer station to the north of the Region in Centre County, near State College. The MCSWA Transfer Station is the only waste transfer station located centrally to the population and waste generators of the Region.

5.6 Processing And Disposal Alternatives

The following section briefly highlights waste processing and disposal system alternatives that are currently available in the industry. This section also focuses on alternatives that have specific compatibility or that show particular promise within the current Mifflin and Juniata Counties' waste management system that was described earlier in this chapter.

5.6.1 Landfill

5.6.1.1 Development of a New Sanitary Landfill

Sanitary landfilling is an engineered method of disposing of solid waste on land. State and federal environmental regulations and advances in design technologies have combined to minimize the impact of sanitary landfills on the surrounding environment. The PADEP Municipal Waste Regulations require

all new and existing (operating) landfills to be designed with a double liner system with leachate collection and detection elements. In addition, after closure of the landfill, the disposal area is required to be capped with a low permeability liner system to restrict the downward flow of precipitation into the waste material.

A landfill can accept a broad variety of materials including sewage sludge, construction and demolition waste, and incinerator ash, as well as municipal and residual wastes. These materials, as well as bulky items such as furniture, building materials, and large appliances that do not contain Freon, can be readily disposed, but may pose operational difficulties in handling. Further, special permit modifications are required for the disposal of sewage sludge and incinerator ash. For these reasons, not all landfills accept all of these materials.

The chief environmental concerns associated with landfilling waste are leachate contamination of groundwater, the danger of explosions caused by migrating methane gas, atmospheric and environmental health hazards from landfill gases, truck traffic, odor, litter, and the aesthetic "eyesore" of the landfill site in general. Applications for new landfill permits in Pennsylvania must demonstrate that the benefits of the project clearly outweigh the "harms" or negative impacts. Development of a new sanitary landfill is also capital-intensive, with high permitting, land, and site development costs.

5.6.1.2 Landfill Gas Recovery

Landfill gas (LFG) is the natural by-product of the decomposition of solid waste in landfills and is composed primarily of carbon dioxide and methane. As part of federal regulations, landfill gas is required to be monitored and collected. The most common options for managing landfill gas are flaring, use of landfill gas as energy, direct use of landfill gas for electricity generation and use of cleaned landfill gas in a pipeline to customers and/or natural gas lines. Using LFG helps to reduce odors and other hazards associated with LFG emissions, and helps businesses, states, energy providers, and communities protect the environment and build a sustainable future.

Flaring

A gas flare, alternatively known as a flare stack, is an elevated vertical thermal combustor. They are used to eliminate waste gas when gas extraction rates do not sustain direct use or electricity generation. Flares can be either open or enclosed. Enclosed flares are typically more expensive, but maintain high combustion temperatures and specific residence times as well as limit noise and light pollution. Some US states require the use of enclosed flares over open flares, including PA. Venting of landfill gas is a significant source of greenhouse gas emissions which is why the US EPA regulates the emissions of landfill gas. Recently, under the Kyoto Protocol, garbage collecting companies in some developing nations have received a carbon bonus for installing combustion devices for the methane gas produced at their landfills, preventing methane from reaching the atmosphere. After the burning, this gas is converted to heat, water and CO2. Flares are beneficial in all landfill gas systems as they can help control excess gas extraction spikes and emissions during maintenance down times.

Landfill Gas to Energy

Landfill gas is treated to remove impurities, condensate, and particulates. The treatment system depends on the end use. Minimal treatment is needed for the direct use of gas in boilers, furnaces, or kilns. Using the gas in electricity generation now requires more in depth treatment due to the requirements of the newer combustion equipment. Treatment systems are divided into primary and secondary treatment processing. Primary processing systems remove moisture and particulates. Secondary treatment systems employ multiple cleanup processes, physical and chemical, depending on the specifications of the end use. Two constituents that may need to be removed are siloxanes and sulfur compounds which are damaging to engine and turbine equipment and significantly increase maintenance cost.

Historically, landfill gas has been converted at on-site locations using dedicated internal combustion engines. These projects used to be relatively simple to permit and demonstrated favorable economics by requiring minimal infrastructure to support the end product. However, in recent years, air

permits for internal combustion engines have become more difficult to obtain, and in the future appear to require gas treatment prior to the engine. The alternative for larger projects is the employment of gas turbines. Microturbines are used for small gas flow conditions.

Internal Combustion Engine

More than 70 percent of all landfill electricity projects use internal combustion (IC) engines because of relatively low cost, high efficiency, and good size match with most landfills. IC engines have relatively high maintenance costs and air emissions when compared to gas turbines. IC projects have a large amount of thermal energy which is most commonly exhausted to the atmosphere as waste heat.

Gas Turbine

Gas turbines usually meet an efficiency of 20 to 28 percent at full load using landfill gas. Efficiencies drop when the turbine is operating at partial load. Gas turbines have relatively low maintenance costs and nitrogen oxide emissions when compared to IC engines. Gas turbines require high gas compression, which uses more electricity to compress, therefore reducing the overall efficiency. Gas turbines are also more resistant to corrosive damage than IC engines.

Microturbine

Microturbines can produce electricity with lower amounts of landfill gas than gas turbines or IC engines. Microturbines can operate between 20 and 200 cfm and emit fewer nitrogen oxides than IC engines. Also, they can function with less methane content (as little as 35 percent). Microturbines may require extensive gas treatment and come in sizes of 30, 70, and 250 kW.

Landfill Gas to Direct Use

Landfill gas can be treated at the landfill, compressed and conveyed in a pipeline for direct use in equipment located some distance from the landfill.

Aside from the economics of constructing a pipeline, these projects offer benefits in air permitting since the off-site facility already maintains permits and the heating value of the landfill gas can be sold as a renewable fuel offsetting fossil fuel at the off-site location. These projects tend to have higher development costs compared to electric only but are offset by more predictable permitting outcomes, better environmental value to the community, and provide long-term attachment of the landfill gas end user to the community.

Pipelines transmit landfill gas to boilers, dryers, or kilns, where it is used much in the same way as natural gas. The use of landfill gas in a project has economics that establish the landfill gas as the cheaper energy compared to the alternative natural gas or oil. Landfill gas contains about half the heating value of natural gas. Boilers, dryers, and kilns are used often because they maximize utilization of the gas, limited treatment of the gas is required, and the gas can be combined with other fuels. Boilers use the gas to transform water into steam for use in various applications, i.e. heating of existing structures at the landfill site or nearby businesses and homes. Disadvantages of boilers, dryers, and kilns are that they need to be retrofitted in order to accept the gas and the end user has to be nearby for favorable project economics as pipelines are required to convey the landfill to the fuel consumer. Early projects limited pipeline lengths to 3 to 5 miles, but recent projects have constructed pipelines for distances over 10 miles with a once planned PA project to be 22 miles.

Landfill Gas to Pipeline Quality

Landfill gas can be converted to high-Btu gas by reducing its carbon dioxide, nitrogen, and oxygen content. The high-Btu gas can then be piped into existing natural gas pipelines or used in the form of CNG (compressed natural gas) or LNG (liquid natural gas). CNG and LNG can be used on site to power hauling trucks, equipment using natural gas, or sold commercially offsetting natural gas.

The conversion of landfill gas into a high BTU gas was considered experimental a few years ago. However, the difficulty in attaining air permits

for on-site facilities to generate electricity has quickly advanced the prototype equipment into working production facilities. Some of the best working examples of these conversion technologies are currently found on the west coast of the US.

5.6.1.3 Combustion (Waste-to-Energy)

In a typical waste-to-energy combustion facility, waste is unloaded into a receiving pit. An overhead crane feeds waste into the furnace hopper. The crane operator may pick out oversize items, such as large appliances, and will mix the waste to obtain homogeneous fuel supply. Within the combustion chamber, the burning waste is transported along the moving grates of the stoker assembly or similar grate system. Heavy ash, called bottom ash, falls off the end grate and is cooled with water. The hot combustion gases pass through the combustion chamber and pass across boiler tubes to produce steam. Also, the walls of the furnace itself are typically fitted with a network of water-filled tubes that use the heat to produce steam. The steam is often passed through a turbine to produce electricity. The produced steam may also be distributed to nearby establishments for heating and/or for use as a process steam.

A combustion incinerator can process approximately 98 percent, by weight, of the municipal solid waste stream. The quantity of ash residue requiring disposal will equal approximately 20-30 percent, by weight (by volume, approximately 10 percent) of the processed waste stream. The non-processibles (materials removed prior to combustion) and the unburned ash residues are usually handled through combination of recycling and landfilling. The non-processibles and especially the ash residue involve special disposal considerations that impact their disposal costs. Lower disposal costs, when compared to MSW, can be achieved if the ash is classified as an alternative daily cover (ADC).

Federal and State regulations require that landfills cover their solid waste daily with a minimum of six (6) inches of dirt. The daily cover is intended to minimize disease vectors and animal attraction, control leachate and erosion, reduce fire hazard potential, minimize wind-blown litter, reduce noxious odors,

provide an aesthetic appearance and allow accessibility regardless of weather. Alternative daily cover was created to reduce the costs of placing six (6) inches or more of dirt each day on the landfill and/or decrease the amount of air space consumed by the six inches of daily cover. Alternative daily cover includes a wide variety of materials including, but not limited to foam, tarps, recycled tire chips, finely crushed glass, ash, etc. The type of alternative daily cover used at each landfill is dependent upon many considerations. Some of these considerations are regulatory, environmental, economic, longevity, and public perception.

The chief environmental concerns of waste combustion are air emissions of acid gases, heavy metals (e.g., lead, mercury), and certain organic compounds, and contamination of air and water through improper handling and disposal of the ash residue.

State and federal emissions control requirements, which currently mandate that new facilities install scrubbers for acid gas control and electrostatic precipitators (ESPs) or fabric filters (bag houses) for particulate removal, are aimed at minimizing the risk of harmful health effects from solid waste incineration. Current technology and air regulations allow MSW combustion to have less air emissions then an equivalent coal-fired power plant.

In general, waste-to-energy projects are extremely capital-intensive due to extensive equipment and building needs. Larger waste-to-energy facilities are generally constructed in similar fashion to power utility plants with field-erected combustion and boiler systems. These can be economically feasible at sizes as low as 300 tons per day (tpd). Below 300 tpd, most waste-to-energy facilities are constructed with pre-fabricated, modular furnaces. Such modular systems have a lower capital cost. Recent high oil prices have generated a renewed interest in MSW combustion.

5.6.1.4 Refuse-Derived Fuel (RDF)

At an RDF facility, mixed waste is processed mechanically (and perhaps manually) into a form rendering it more suitable for use as a fuel. Typical processing steps involve size reduction, removal of noncombustible materials,

mixing/blending and either shredding or densification into pellets or briquettes.

The RDF product can be marketed to institutional or industrial facilities for use as a supplemental fuel in their existing boilers. Additional air pollution control measures may be required depending upon the specific application. If insufficient markets exist, the RDF can be burned at the RDF facility in a dedicated boiler. In Pennsylvania, PADEP requires a facility that burns RDF fuel to obtain a waste management permit much the same way as a waste-to-energy facility does. This negatively impacts the prospects for developing an RDF project.

The fuel preparation process produces residuals requiring disposal; the quantity depends on the composition of the input waste on the processing system. The process typically removes ferrous metal for recycling, and may separate other materials for recycling. If a dedicated boiler is used, there will be ash requiring disposal.

The potential environmental impacts of an RDF facility are similar to those of a waste-to-energy facility. There are additional concerns of worker health and safety due to the potential for explosions in the shredder and exposure to airborne material such as bacteria and molds. RDF projects are very equipment and capital-intensive. Finding a long-term user for the refuse-derived fuel material is critical to the financial feasibility of an RDF project.

5.6.1.5 Biogasification

Biogasification involves the conversion of the organic fraction of municipal solid waste into methane gas by the activities of anaerobic bacteria in an enclosed digester. The methane gas can be used as a fuel for steam production, for subsequent sale to nearby utilities or industries, or it can be cleaned and sold as a stand-alone fuel.

The biogasification technology has been traditionally used to process highly liquid, easily biodegradable wastes such as animal manure and organic sludge. To use this technology to process municipal solid waste, extensive

preprocessing of the waste must be done to separate out the organic fraction and process it into small, uniform particle sizes which are essential for proper anaerobic digestion. The temperature, carbon-nitrogen ratio, and pH of the waste mixture must be carefully monitored and controlled to achieve proper digestion of the waste. A by-product of the decomposition process is a solid residue (i.e., waste which has not been converted to methane gas) which must either be disposed of elsewhere, or further processed for use as fuel or compost.

The application of the biogasification technology has received a recent resurgence in interest as a renewable energy source due to the high cost of oil. Projects being developed usually involve the use of a clean organic feedstock, and this technology is still in the developmental stages.

The potential environmental impacts of a biogasification facility are those of operating a shear shredder and odors. There are additional concerns of worker health and safety due to the potential exposure to airborne material such as bacteria and molds. Biogasification projects are very equipment and capital-intensive. Finding a long-term user for the fuel is critical to the financial feasibility of a biogasification project.

One example of biogasification technology that has been employed recently in other parts of the world is ArrowBio.

ArrowBio

The ArrowBio process is an integrated solution that receives MSW pre-sorted or unsorted, which eliminates the need for prior separation or classification of mixed waste. The waste is delivered and dumped into a pit, where bulky items will be removed and the waste bags will be opened. The preliminary dry waste preparation and separation stage is based on the concept that most of the biodegradable organic materials are smaller and can subsequently be separated with the waste's liquids by a trommel screen. The larger particles, such as cardboard, paper and plastics will go through and can be separated manually. The preliminary liquid-based waste preparation and separation stage is based on the concept that inorganic materials, such as metals and

glass, weigh more than water, while plastics and biodegradable organic matter have a weight that is equal or less than water. The larger materials will enter the primary vat, while the smaller materials will go to the secondary vat.

The heavy components that dropped to the bottom and were subsequently separated from the organic stream include ferrous metals, non-ferrous metals, glass and other static materials. These materials travel down a processing line, where they are separated by a number of methods, including a magnetic force, an eddy current and manual means. The remaining materials are returned to the dissolving tank and proceed to the light materials process.

The light organic waste, already separated from the heavy components, is transported through a conveyor into a trommel screen, where strong water streams wash the materials and they enter a rough screen where the smaller elements go through the holes to a hydro-crushing unit. The large items proceed to a sorting conveyor, where the PET and HDPE materials are screened out manually. The metals are removed by a magnet, and the film plastic is blown out by using an air sifter. The rest of the materials enter into a rough shredder and then to the hydro-crusher.

The biodegradable material enters the filtering system. The residual contaminations are filtered out, and the grit, sand, broken glass, and small metal elements are screened out using a settling vat. Larger elements go through a secondary air sifter and then return for a second cycle in the system, or are dropped out of the process and sent to a landfill. The remaining energy rich organic watery solution is sent to the biological reactors to yield fertilizer, water and biogas.

In the biological reactors section the fluid undergoes two more processes, both of which are coordinated by naturally occurring microorganisms. In the first bioreactor tank, acidogenic fermentation transforms complex organic material into simpler organic acids and fatty acids. This acid rich organic matter is then heated and transported to the Methanogenic Fermentation reactor for anaerobic degradation of the organic materials and the generation

of clean fertilizer, water and biogas. The biogas can be used for energy needs and for heating the Methanogenic tank. The anaerobic digestion process generates fertilizer, water and biogas containing up to 75% methane. The biogas can be sold as clean green energy for transportation and power plants.

There are plants in Hiria, Israel and Sydney, Australia that are currently utilizing the ArrowBio process.

There are also local examples of anaerobic digestion facilities in the Region that accept and process segregated food waste and other organics from the wastestream and process them to produce a methane gas for heat and power generation. One such example of an anaerobic digester that has recently included food waste as part of its feedstock is the Reinford Dairy Farm in Juniata County.

Reinford Dairy Farm, Juniata County, PA

Reinford Farm in Mifflintown, Juniata County, is a 500+ head dairy farm that has been operating an anaerobic digester since February of 2008. Food waste is added to a conventional farm-type anaerobic digester (with modifications as needed for feeding and processing), and the organics are broken down in the absence of oxygen by bacteria in the digester that produce methane gas, also known as biogas. Feedstocks for the digester include manure and source-separated food waste from as many as 40 Wal-Marts and Sam's Club stores.

The Wal-Mart Corporation has established goals, companywide, to become more environmentally sustainable and reduce the amount of waste generated in their facilities through source reduction and reuse, composting and recycling. The Wal-Mart in Lewistown, PA has contracted with Organix Recycling, Inc. for the collection of compostable materials. Wal-Mart collects compostable material, i.e. old produce that is no longer marketable, expired bakery products, small amounts of dairy items, and old coffee grounds, in compost bins on site. Organix Recycling Inc. collects the food waste from the stores weekly and delivers approximately 60-70 tons per week to the Reinford

Farm, where the material is placed in a digester and eventually converted into electricity that is used on the farm.

The electricity is sold to Pennsylvania Power and Light Company, and any electricity needs on the farm are met by buying power back at a lower rate than it is sold to PPL. The digestate (solid residuals from the digestion process) are dried and used as bedding on three farms, and the liquid waste is applied to the farm fields twice yearly. Waste heat from the machinery and the digestion operation is also captured and used on site for heating purposes. Further information on this facility and a similar one, Kish-View Farm in Mifflin County, is presented in Section 3.9.7.2 of Chapter 3.

5.6.1.6 Composting/Co-Composting

Composting is a biological oxidation process that breaks down the biodegradable organic material in waste into simpler, more stable compounds, carbon dioxide, moisture and heat. The compost end-product is humus containing nutrients and minerals that can be used as a soil supplement. Although of lesser nutrient value than fertilizer, the compost improves soil structure for root development, increases water retention in sandy soils, improves drainage in clayey soils and adds to the cation exchange capacity of soils. A quality compost product appears much like peat and has similar uses. A typical municipal refuse composting operation consists of the following four basic steps:

- Pre-processing – Initial processing consists of sorting, shredding, and preparation of a feedstock mixture suitable for composting. Some of the recyclable materials in the waste, such as ferrous and non-ferrous metals and glass, may be removed at this stage. The mixture of biodegradable materials, or feedstock, is adjusted to optimum moisture and nutrient levels, and particle size of the materials may be reduced. A “dirty MRF” type of pre-processing line is sometimes used to prepare a wastestream for composting.
- Municipal waste is sometimes co-composted with wastewater biosolids (sewage sludge). This mixture of two waste streams provides nutrients and moisture from the biosolids that are needed for the proper

composting of the high-carbon municipal solid waste. Water can be added to the mix to attain optimal moisture levels. The solid waste acts as a bulking agent for the composting of the biosolids.

- Biological and chemical decomposition - This composting stage makes use of naturally occurring bacteria and other microorganisms to break down the organic portion of the waste, in the presence of oxygen, into stable by-products.
- Curing - Curing is required to stabilize the compost mix and to assure that the biochemical breakdown process is complete. Curing helps assure that the compost product will not be toxic as a growing medium. After a 1-2 month curing phase, the material is usually considered stabilized.
- Product Screening - The compost product is prepared for use through screening, removal of contaminants (such as glass), packaging (if needed), and marketing.

Solid waste composting stabilizes only the organic fraction of the waste stream. Contaminants such as glass, plastic, metal, rubber, and textiles should be screened out, depending upon the final uses and market specifications, and either recycled or landfilled as appropriate. Compost-laden recyclables typically carry a lower sales value than curbside-collected, clean recyclables.

A composting facility can divert and reclaim approximately 60-70 percent of the municipal solid waste stream from disposal through landfilling. The quality of the final product benefits from the presorting/ removal of glass, household hazardous waste, household batteries and used motor oil. Building corrosion, odor control, and fire suppression needs at mixed waste composting sites, as well as the quality of the final product, are critical issues that need to be addressed for proper development of a composting project. The residue sent to the landfill after separation from the compost feedstock is largely inorganic in nature, and most of the soluble components of the waste stream have been removed.

There is a strong industry push to develop segregated organics composting facilities throughout the US, and low-technology yard waste composting facilities are commonly used by municipalities and counties throughout the northeast US to divert a significant fraction of the municipal wastestream to a beneficial use, at a relatively low cost (Pennsylvania currently has nearly 500 of them). Appendix I contains the locations of the compost facilities that are known to exist within the Region.

5.1.6.7 Emerging Waste Conversion Technologies

Pyrolysis

Pyrolysis involves the heating of waste without sufficient oxygen for combustion, causing its decomposition into combustible gases, liquids, and a solid residue (char) which resembles coal. This technology was traditionally used to produce methanol, acetic acids, and turpentine from wood. The most promising aspects of its application to municipal solid waste are low air emissions and the flexibility to produce a broad range of energy forms, which would enable the facility to respond to changes in local energy demands.

The pyrolysis technology has not been commercially developed in the United States for application to the municipal solid waste stream. An attempt to develop a large-scale pyrolysis project to process municipal waste was attempted unsuccessfully by Monsanto for the City of Baltimore in the 1970's. Thus, it is still considered to be an experimental waste processing technology. Obstacles which have hindered the commercialization of pyrolysis as a municipal solid waste processing technology include: the interference of inorganic materials with the pyrolysis process; inconsistencies in the quality of the liquid and char end products of pyrolysis; the low combustion value of the char end product; and the lack of energy markets for end-products.

Pyrolysis/Gasification

This technology is a variation of the pyrolysis process. Another reactor is added to this system whereby any carbon char or pyrolysis liquids produced from the initial pyrolysis step are further gasified, which may use air, oxygen,

and/or steam for these gasification reactions. Pyrolysis/ gasification reactors operate predominantly in an oxygen-starved environment, since the combustion reactions quickly consume the oxygen, producing heat sufficient for the pyrolysis reactions, resulting in a raw synthesis gas (syngas) exiting the reactor. The raw syngas is cleaned up of particulate matter from the reactor, which can include sulfur, chlorides/acid gases, and trace metals such as mercury. Syngas is used in a power generation plant to produce energy, such as steam and electricity, for use in the process, and the excess generation is exported as energy. The exported energy is typically converted into electricity and supplied/ sold to the grid.

The end products from the energy generation in the reactor are typically ash, slag, and metals. The metals can be recycled; however, the ash and/or slag require disposal in a landfill.

As of 2009, there were seven facilities utilizing this technology in Japan, with a new facility in development in Puerto Rico. Six of these facilities were using MSW as their source of waste. Of these six facilities in Japan, four were generating power from their operation. The six operations in Japan are using the syngas in gas engines or boiler systems.

Plasma Arc Gasification

This type of facility uses a reactor with a plasma torch, and involves processing organics of waste solids. This method involves a high temperature pyrolysis process where the organics of waste solids are converted into syngas, while the inorganic materials and minerals of the waste solids produce a rock-like, glassy by-product called vitrified slag, mainly comprised of metals and silica glass. The syngas is predominantly CO and H2. The high temperature needed to complete the process is created by an electric arc in a torch where gas is converted into plasma. In commercial practice, the plasma arc gasification process is operated with an injection of a carbonaceous material like coal or coke into the plasma arc gasification reactor. This material reacts quickly with oxygen to produce heat for the pyrolysis reactions. The metals of the vitrified slag can be recovered and recycled, while the slag can be used to make other products such as rock

wool, floor tiles, roof tiles, insulation, and landscaping blocks. Vitrified slag is environmentally acceptable as a recyclable by-product, which is a benefit of this method of waste conversion technology. An additional benefit of this method is that developments in design of plasma arc gasification reactors have improved and lessened the need for pretreatment/ preprocessing.

As of 2009, there were three plasma-arc plants in operation in Japan. The total tons accepted at each plant ranged from 25 tons per day to 165 tons per day. Plasma arc gasification has also been used for MSW ash in Chiba City, Imizu (12 tons per day), Kakagawa (30 tons per day), Kinura and Shimonoseki (41 tons per day).

Of the above mentioned energy recovery technologies, including waste-to-energy, plasma arc gasification is the most thermal and economically efficient method. In addition to generating the highest net annual revenue of the above mentioned technologies, including waste-to-energy, it should be noted that the vitrified slag byproduct can be used as road material, which then adds an additional revenue source for this process method.

5.7 Compatibility of Processing/ Disposal Alternatives in the Region

5.7.1 The No-Action Alternative

In the no-action alternative, the Region's waste management operations would function in the same manner as they do now. Residents would subscribe with haulers for waste and recyclables collection. Haulers would transport the MSW and recyclables to the facilities of their choice (with the majority of Mifflin and Juniata County MSW delivered to the MCSWA Transfer Station). Haulers most likely would not expand their recycling services; they would have the ability to offer recyclables collection to residents or not, except in Lewistown, where municipal collection of recyclables must continue to be collected curbside as mandated by Act 101. At a minimum, there would be no expansion of the Region's current recyclables collection or processing programs. The current drop-off locations would remain, with the same current level of collection. There would be no support for enhancements to recycling education and information dissemination to schools, businesses and residents in the Region. There would

be no growth in the current limited recycling drop-off and other recycling programs in Juniata County. No opportunities to secure funding to support existing and new recycling programs and value-added services would occur. Over time, recycling services in general would gradually decrease and ultimately be eliminated due to increasing costs.

The anaerobic digestion of food waste and other organics would continue at Reinford Farm and Kish-View Farm, and possibly even expand (at least one or two additional reactors are in the development stages, supported by USDA and related grant programs). MCSWA would compost leaves and yard waste using low-technology windrow composting at the Transfer Station site, and several other yard waste processing and composting sites in the region would continue to operate, as listed in Appendix I.

The MCSWA Transfer Station would continue to secure waste deliveries to its facility using existing means, but would not consider employing any additional measures, even if waste delivery contracts fall through in the future.

Under the No-Action Alternative, the current waste management system may be sufficient for residents in the Region TODAY, the No-Action Alternative WILL NOT meet the financial and service needs of the Region for the next ten years. Without secured waste tonnages at the MCSWA Transfer Station, the Authority is almost guaranteed to face future financial hardship at some time. Without expansion of the current recyclables collection services in Juniata County, many residents will not have access to enhanced recyclables services. If disposal capacity agreements fail, the MCSWA Transfer Station will not be a designated disposal facility for MSW delivered from the Region, and the Region may not be able to fund expanded recycling services, or even support current recycling programs in Mifflin County. If the MCSWA fails to maintain financial solvency and sustainability, it could go bankrupt in the future, and the future liability and post-closure responsibility for the closed Mifflin County Barner landfill would fall squarely back on Mifflin County, who is the guarantor for the Letter of Credit for the Barner Landfill's closure bonds. The financial impact of that action could be significant, and negative, on Mifflin County governmental operations.

The Region has expressed a desire to expand the current recyclables collection program, as well as ensure that the maximum number of residents is being offered a location to drop-off recyclables. There is a significant benefit to helping improve and secure the future financial sustainability of the MCSWA as it continues to provide integrated waste and recycling services to the Region, and as it manages the post-closure duties of the closed Barner landfill. In order to satisfy the needs of the Region, some changes need to be made to the current waste management system. The No-Action Alternative may seriously limit the prospects of expanding recycling services in the Region, and may seriously threaten the financial security of Mifflin County Government in the future.

Therefore, the No-Action Alternative does NOT adequately address the needs of this ten-year solid waste management planning mandate.

5.7.2 Landfill

The Barner Landfill reached its useful life and closed in October of 2005. To process the waste from Mifflin County, the MCSWA built a Transfer Station at the location of the Barner Landfill. Through exhaustive analyses and evaluations conducted in the late 1990's and documented in the 2003 Mifflin County Municipal Waste Plan Update, there are no economically viable expansion opportunities at the Barner Landfill site, and additionally, there are no reasonable prospects or opportunities to develop a new sanitary landfill in Mifflin or Juniata County.

5.7.2.1 Landfill Gas Recovery at the Closed Barner Landfill

Currently, due to the age and the relatively small size of the landfilled waste volume, there are no plans for any gas recovery at the Barner Landfill. Two recently proposed projects, one for the flaring of the gas for the generation of carbon credits (Environmental Credit Corp.) and the other for the burning of the gas for electrical generation (Liberation Capital) have both been terminated due to poor projected financial returns.

Barton & Loguidice conducted an independent assessment of landfill gas capture and energy production prospects at the Barner site as part of this

plan update, and confirmed that due to the dropping rate of methane gas generation at the closed landfill, and the lack of a gas collection pipeline system in place in the landfill, coupled with the current drop (and prolonged reduced outlook) in natural gas prices and the decrease in value in any greenhouse gas reduction credits, there are no gas development companies willing to invest in the development of an gas capture and gas-to-energy operation at the closed Barner site. This lack of prospects at the Barner site is considered a closed matter.

5.7.3 MCSWA Transfer Station Modifications

The MCSWA Transfer Station, located centrally in Mifflin County, has capacity (without expansion) to serve the long-term waste transfer hauling needs of Mifflin County and Juniata County, to economically transport wastes to distant landfills. For this reason, an expansion of the Transfer Station's waste transfer capacity is considered unnecessary and not economical at this time.

An alternative energy project for the Mifflin County Solid Waste Authority (MCSWA) was proposed at the Transfer Station that would (in theory) reduce their conventional electricity usage and costs, and make their current system more environmentally friendly. On February 9, 2011, MCSWA released a request for proposals (RFP) for MCSWA to enter into negotiations with a photovoltaic (PV) developer to provide engineering, procurement, and construction of a (solar) PV electric generation system at the MCSWA Transfer Station, to offset the facility's current electric demand. This RFP is included in Appendix O. In this proposal, solar panels would be placed on the roof of the transfer station, as well as on a nearby south-facing bank of the property. Vendors were asked to finance the capital costs of the project and to offer MCSWA with long-term electricity cost savings through the generation of on-site PV electricity. MCSWA received two proposals by the submission deadline. Barton and Loguidice conducted a technical review of the submissions. This review revealed that, while the technical aspects of the submissions were feasible, given the current economic and industry conditions, the financial feasibility of the project did not appear favorable to the Authority. While benefit was shown in future years, it was also assumed by the vendors that the SREC (solar renewable energy credits) value of the PV electricity generation would

remain at $300 per MWh/yr. However, In PA, the SREC market is open to facilities within the PJM grid territory. PJM is the regional transmission organization that schedules and organizes electric generation in an area that encompasses PA, MD, DE, VA, NJ, WV, and parts of OH, NC, IN, MI, and IL. As such, a large amount of PV capacity has reportedly come on the market, and has already met (i.e. saturated) a large part of the 0.5% renewable portfolio standard (RPS) solar requirement of PA utilities through 2021. Since the benefits shown in the proposals received by MCSWA for the solar project were not large, a more sensitive analysis was not conducted to determine the impact of varying SREC values on the economics of the project. In this case, however, it appears that if SREC values are now much lower than estimated by the vendors, and the financial benefit to the Authority would be lower, or could even be negative, bringing more financial hardship on the Authority.

Based on the preliminary review, it was recommended that the Authority not pursue the PV project at this time. The availability of grant funds, the value of SRECs and the proposed legislation related to the PA RPS should be tracked, as a positive change in any of these could potentially make this project financially viable in the future.

5.7.4 Combustion (Waste-to-Energy)

The projected cost of a new waste-to-energy facility is one of the biggest deterrents to its consideration or potential development in this Region. Based on the waste tonnages currently generated by the Region, it is assumed that a WTE facility sized nominally at 150 TPD +/- may be appropriate to serve the future processing needs of the Region. However, in a recent (2007) analysis conducted by Barton & Loguidice for another client in the Northeastern U.S., the estimated capital costs to develop, permit and construct a 750 TPD WTE facility were estimated to be in the magnitude of $150 to $200 million. The WTE facility needed in this Region would approximately be one-fifth the size of the analysis conducted in 2007, or approximately $30 to $40 million (or more, considering the loss of economies of scale with a smaller facility). In the 2007 study, the costs of WTE development were found to be significantly higher than the costs of developing a new landfill. Clearly, unless there is some driving set of regional conditions that eliminates conventional (i.e. landfill) waste disposal technology

through available disposal sites in the region, WTE is not the most cost-effective option to consider, and is not worthy of further consideration here.

5.7.5 Refuse-Derived Fuel (RDF)

RDF project development requires a large energy user that is willing and able to burn the RDF fuel in its boiler. The PADEP restrictions and permitting requirements on burning RDF in a conventional boiler, requiring a permit as if it is a WTE facility, are severe restrictions on this technology, in addition to its high equipment and capital costs. This is not a feasible option for this Region, unless a large industry with a specific RDF fuel need (e.g. looking to substitute RDF for coal in a boiler), is willing to make a large financial commitment to project development, and thus dictates a second look at this option.

5.7.6 Biogasification

Use of mixed municipal solid waste as a biogas process feedstock has received some renewed interest recently, but no commercial-scale facilities are known to have been successfully developed in the United States using this technology. Therefore, this is considered to be in its developmental stages, and is not considered to be a proven technology at this time.

Biogas generation from food waste and other organic feedstocks is still a reality at multiple farm anaerobic digesters in the region. Current agricultural funding programs are supporting the further development of this technology, and co-digestion of farm manures with food wastes seems like a compatible mix. It is anticipated that at least one, or possibly more, private anaerobic digester projects are under development in the Region. And there is interest from at least one of the current biogasification facilities in the Region to look into a public-private partnership project to accept food waste at a private facility. The details of this concept need to be further explored, to determine the capital cost commitment from the public sector for such a project.

5.7.7 Composting/Co-Composting

A municipal waste composting project is moderately capital-intensive, with typical tipping fees being reported in the $75-100 per ton range based on the tonnage processed. The number of municipal waste composting facilities in the US has held constant at about 15-20 facilities over the past decade or more; some have closed, and a few others have opened. Few new mixed waste composting projects are currently being considered or developed. Glass contamination of the compost product and small plastics can significantly reduce the sales value of mixed-waste-produced compost. Instead, many, new composting facilities are designed to process source-segregated organics, which can provide for a much cleaner end-product.

Typically, the economic feasibility of MSW composting is highly dependent on the cost of other disposal alternatives (e.g. landfilling) that are available for a region and also upon the quality of the product and local markets of the compost end-product produced. Where landfilling is available at a relatively economical price, and where there are no other critical environmental issues ruling out continued landfilling, composting is not typically cost-competitive with landfills in most areas.

However, segregated-organics composting as a component of a waste management system that includes landfilling may be found to meet increased waste diversion and recycling goals, extend landfill life, and result in a system that is still reasonably economical. Larger facilities (several hundred tons per day or more) can help improve compost system economics. And there are multiple examples of small-scale segregated food waste and yard waste co-composting projects in central Pennsylvania that are operating with low capital and operating cost.

The addition of segregated food residuals to the MCSWA yard waste windrow operation could be considered as a possible enhancement to the current operation, if it is determined that it could bring in additional revenues to improve the finances of the MCSWA; if so, it is believed that this type of project could be developed with minimal additional capital investment. Pennsylvania offers General Permits for food waste and yard waste co-composting in small

quantities. However, if a more significant quantity of food waste were to be composted at the site, it is recommended that a more sophisticated composting technology be considered, such as Aerated Static Pile composting, as this technology can control potential odors and vector issues from food waste much more reliably, still with a relatively low capital cost investment.

The impact of a possible MCSWA food waste composting operation on the existing anaerobic digester projects in the Region should also be assessed, to make sure they would not be adversely affected through competition for the food waste feedstock and related tipping fees.

5.7.8 Emerging Waste Conversion Technologies

While some emerging technologies show real promise, such as plasma arc gasification, the fact remains that this is, as titled, an emerging technology. It also carries a high capital cost. As such, it is not believed to be appropriate for a public entity to invest large sums of money in a developing technology. Therefore, it is not recommended that this technology be implemented in the Region by any public entity. The status of development and commercial use of currently termed “emerging” technologies can again be assessed in the future, with the next plan update, if necessary.

5.8 Sewage Sludge Processing And Disposal Alternatives

5.8.1 Background

Since the 2003 Mifflin County SWM Plan Update, the Barner Landfill has closed (October 2005). The sewage sludge that was being delivered to the Barner Landfill has since been redirected to other disposal facilities. Additionally, Granville Township began a vermicomposting project under a demonstration permit. The Township initially worked with a company called Vermitech to develop the vermicomposting technology. Recently, Granville Township decided to decommission the vermicomposting operation at the Township’s wastewater treatment plant. WeCare Organics recently obtained the rights to the company Vermitech, and considered options for continuing the Granville Township vermicomposting operation, or transferring the operation to another site, but after

further analysis, decided not to do so. The dewatered sewage sludge from Granville Township is now directed to a landfill. The Township reports that they are pursuing a land disposal permit.

5.8.2 Land Application

Sewage sludge can be disposed by spreading it on or injecting it into farmland, or by applying onto abandoned mining lands for purposes of reclamation. Land application is typically the simplest and least costly method of disposing of sludge. Land application provides a means to dispose of sludge as well as a source of nutrients for the receiving soil. Land-applied biosolids are typically in liquid form, although dewatered cake can also be land-applied. In the Region, land-applied biosolids are typically in liquid form.

The availability of sites has been reduced in small proportions by the conversion of farmland into housing and commercial areas. A further limitation of land application is that having a permitted site does not insure a sludge generator of a constant disposal outlet. Weather conditions periodically limit the ability to apply sludge, such as when the ground is snow-covered or saturated. Also, unless the wastewater authority that generates the sludge owns the site or has suitable provisions in its agreement with the landowner, the owner might choose to make a parcel unavailable for sludge application, due to adverse neighbor reactions or other reasons. Currently, the following wastewater treatment facilities utilize land application for their sludge disposal:

Mifflin County:

- Brown Township
- Burnham Borough (also utilizes landfill disposal)
- Granville (Junction)- currently pursuing a permit
- McVeytown

Note: Bratton and Strodes Mills haul liquid sludge to Granville for disposal. The Beacon Lodge facility hauls its liquid sludge out of the Region to another WWTP for disposal.

Juniata County:

- McAlisterville
- Port Royal

Note: Thompsontown hauls their liquid sludge out of the Region to another WWTP for disposal.

5.8.3 Landfilling

Sewage sludge can be disposed in a landfill. PADEP requires that the sludge be dewatered to a minimum solids content of 20 percent and meet certain quality characteristics. The Laurel Highlands Landfill accepts dewatered sludge cake for disposal from three of the larger treatment plants in the Region: Lewistown Borough, Burnham Borough, and Granville Township. It also accepts reed filter bed sludge cake from Union Township. As a special handling waste, sewage sludge cannot be landfilled without a landfill permit modification. Each sludge source must obtain a separate modification approval. The application for a permit modification must include an analysis of alternatives to landfilling and an explanation of why disposal at a landfill is being proposed. Currently, the following facilities utilize landfilling for their sludge disposal:

Mifflin County:

- Burnham Borough (also utilizes land application)
- Granville (Junction) (is also pursuing land disposal)
- Lewistown
- Union Twp. (utilizes a reed bed filter application)

Note: Bratton and Strodes Mills haul liquid sludge to Granville for disposal

Juniata County:

- Mifflintown Borough

Acceptance of sewage sludge imposes additional costs upon the landfill, including the costs of administering the permit modifications and the extra handling effort on the part of the equipment operators. Landfills are limited by how much dewatered sewage sludge they can accept, as a percentage of their daily intake of waste. For several Regional wastewater authorities, landfilling would involve the added costs of installing and operating dewatering systems.

5.8.4 Composting and Vermicomposting

Wastewater sludge can be composted, alone or with other wastes, into an organically stable humus material that is useful as a soil amendment. Some essential factors for successful composting are moisture content, material structure, energy (carbon) content, nutrient content, and aeration. The moisture content can be modified, in part, by dewatering the sludge prior to composting. A "bulking agent" such as sawdust, woodchips, leaves, shredded paper, shredded tires, mixed municipal refuse, or finished compost, is added to provide porosity for aeration. Most of the bulking agents identified above reduce the moisture content, and some may be added for their energy content as well as for their moisture-reducing and bulking properties.

Aeration is provided by one or both of the following: (1) agitation of the material by mixing and turning the pile and (2) forced aeration by blowers connected to a network of perforated pipes.

Composting is a technologically proven method of biosolids handling. However, it is usually more costly than land application or landfilling, and therefore is difficult to implement, unless a large quantity of biosolids is processed daily.

Vermicomposting is a unique variation of composting, where worms are used to help decompose and stabilize biosolids. The process requires a pre-composting step, to stabilize the feedstock, and a homogenization step, to properly mix and size-reduce the feedstock for processing by the worm colonies. The equipment needs to be located in a climate-controlled building, and can be sensitive to minor environmental fluctuations in operating parameters. For this reason, the process requires a relatively large amount of operator control and attention. If

properly operated, vermicomposting can produce a finished product with very high market value (some of the product can be worth up to $200-$300 per ton).

However, the recent closure of the Granville Township vermicomposting project, reportedly for technical and regulatory reasons, does not bode well for the further application of vermicomposting technology in the Region. WeCare reportedly still has another former Vermitech project in the Harrisburg area (West Hanover Township) that it is trying to bring to successful fruition. However, due to the technical and regulatory questions raised at Granville Township, and given the high degree of care required to operate such a facility, it is not recommended that vermicomposting be further pursued in the Region until and if the technology becomes better proven.

The decommissioning of the Granville project led to the introduction of WeCare to Mifflin County representatives who wanted to see continued "recycling" and "beneficial" use of the WWTPs biosolids, as well as other biosolids generated within Mifflin and possibly Juniata County. Between WeCare, Mifflin County, and the Mifflin County Solid Waste Authority, a project was proposed to design, build, and operate a Regional Biosolids Composting Facility on the existing MCSWA property adjacent to the closed Barner landfill. This location would allow for local hauling of the Regional biosolids, as well as providing a "recycling" operation to compost the biosolids to a beneficial product, all at a reportedly cost-competitive rate.

To gauge the interest of local WWTPs in using the vermicomposting technology, WeCare sent out letters of interest (LOIs) to all the County's WWTPs, asking for a signature if there would be interest in taking part in such a composting project. After collection and review of the LOIs, a feasibility study was performed with the estimated tonnages of biosolids that would be transported and processed at the new compost facility. After review, WeCare determined that to address potential odor issues and to have better control over processing parameters, that an indoor in-vessel system would be more suitable at the project on-set. This more elaborate and technically advanced system would require greater capital and operating costs, and with the small amount of material expected to be received, WeCare determined that this project would not be economically feasible to

pursue at this time, and the project was shelved in 2011, pending a change in economic or other factors.

5.8.5 Conclusion of Sewage Sludge Alternatives

In general, the treatment plants that produce biosolids in liquid form land apply that material, and intend to continue to do so for at least the next 5-10 years. Based on considerations of cost alone, land application is the most attractive sludge management alternative, as long as land-application loading rates can be complied with (especially phosphorus loading rates). Therefore, for plants currently producing liquid biosolids, the current system of land application of liquid biosolids and septage is expected to be their continued preferred management method over the next 10 years.

Of the plants that currently landfill dewatered sludge cake, three have expressed (through the 2011 wastewater treatment plant surveys) that they plan to continue to use this form of disposal for the next 5-10 years. One plant plans to investigate reed bed filters as a long-term option, while others plan to explore land disposal. One facility, while planning to use landfilling as a long-term option, will also consider evaluating land disposal as an option if landfill disposal costs increase above a certain point.

Although WeCare is not currently planning on utilizing the MCSWA property for the design, construction, or operation of a biosolids composting facility, WeCare is still interested in future activity at this location if: 1) the MCSWA is still interested, 2) more WWTPs would be interested in providing their biosolids, and 3) if grants or other funding opportunities develop to help support capital project costs.

5.9 Special Residential Waste

All municipal waste streams contain materials that are undesirable at landfills, incinerators and composting facilities. These unwanted materials should be removed or reduced to the greatest extent possible to minimize the impact of a waste disposal or processing facility. This section describes household hazardous waste (HHW).

5.9.1 Household Hazardous Waste

Household hazardous waste includes such items as paints, pesticides and herbicides, drain cleaners, pool chemicals, solvents, and cleaning products. While these products are exempted from regulation as hazardous wastes and may be disposed with other municipal waste generated in the home, they can present hazards for homeowners and waste collectors, particularly if the materials leak from their packaging. Such wastes pose potential environmental risks after their disposal at waste processing facilities and landfills.

Pennsylvania encourages counties and municipalities to establish collection programs to manage this waste for recycling and/or disposal. Act 101 requires that resource recovery facilities develop a program for the removal "to the greatest extent practicable" of hazardous materials from the waste to be incinerated. Act 101 also created a HHW collection and disposal grant program. However, it only covers 50% of eligible costs. The PADEP has also developed guidelines for household hazardous waste collection programs.

Growing numbers of communities and counties in Pennsylvania and beyond are setting up household hazardous collection events. The state grants can partially offset program costs. Waste collection drop-off events can be organized and scheduled with the assistance of PADEP and disposal companies such as Safety Kleen.

Another collection option is to set up a permanent collection facility. The benefit of this method of removing HHW from the waste stream is that, with the 90-day storage capacity allowed by PADEP, arrangements can be made for the materials to be reused or recycled. By reducing the amount to be disposed of, the cost of managing HHW goes down. Much of the cost involved is due to the transportation of the material to an approved hazardous waste landfill. For example, usable paint can be separated out and used for graffiti removal, used by nonprofit organizations such as theater, art or neighborhood betterment groups and even bulked and reprocessed as primer paint. A permanent facility is probably more appropriate for an urbanized or more populated county, or where removing these materials from the waste stream yields a direct benefit by reducing air emissions from a waste-to-energy plant, for example.

A first step in dealing with HHW is educating the public on proper handling and disposal of these products as well as non-toxic alternative products that can be used. The Regional Recycling Coordinators can play a role by assisting individuals or municipalities on HHW education and proper handling procedures. PADEP steps to HHW management have been summarized and are presented below:

- Minimize Household Hazardous Waste (HHW) generation
- If the material is still useable (i.e. has not been damaged/shelf life expired, etc.) check with friends, neighbors, and community groups before disposing
- If the material is not useable and/or outlets are not available, it should be taken to your community's HHW collection program, if available
- Used motor oil should be taken to used oil collection sites
- Spent lead acid (automotive) batteries can be returned to sellers. In Pennsylvania, dealers are required to take old batteries when new ones are purchased and may not be discarded in landfills
- If your community does not have such a collection program or you must discard the materials prior to the next scheduled event, you may legally discard them in your regular trash pick-up, provided:
    - You read the label for any disposal directions, and have complied with them
    - Liquids have either been allowed to evaporate (if water based) or absorbed (if non-water based) on some material such as vermiculite, cat litter, or sawdust, so that there are no freestanding liquids)
    - The remaining residue has been carefully packaged to prevent leakage while the material is being transported to the disposal facility
    - The material is placed out in small quantities, over several collection periods

Currently, neither Mifflin nor Juniata County has a household hazardous waste collection program in place, and there are no plans at this time to begin HHW collections in the Region. The evaluation to conduct an annual event is under

consideration, and the MCSWA will promote via its website any scheduled collections in the Region.

6.0 Recommendations

Chapter 6 recommends the components of an integrated municipal waste and recyclables management program for the Region, and recommends steps to secure waste disposal capacity and sustain the preferred waste management and recycling systems through the end of the planning period, year 2024. This recommended system is believed to best meet the goals and objectives of the Region as identified and evaluated in this Regional Plan.

The benefits of implementing this selected system of waste and recyclables management strategies are as follows:

- **Meets Public Goals**—The recommended system has been selected on its technical, economical, environmental and long-term beneficial merits. It meets the PADEP requirements to provide for 10 years of disposal capacity for the Region, and to sustain and exceed PA Act 101's recycling and waste diversion goal of 35% recycling in the Region. It meets the goals and objectives identified in this planning process. It allows various contacts and plan implementation schedules to become coordinated over the interim/ transitional and formal planning periods.
- **Is Cost-Effective**—The Plan implementation strategies are centered on maximizing individual choice and access to recycling and waste disposal opportunities and facilities. The proposed "menu" plan of waste disposal sites allows waste haulers and individuals to individually select the disposal site that is believed to offer the best services and economics. Under the preferred waste assurance scenario, haulers who bring waste to the MCSWA Transfer Station can either 1) continue to receive discounted tipping fees through the large volume hauler discount contracts, or 2) indirectly benefit from this system through economies-of-scale operations at the Transfer Station which are passed on to all facility users in the form of competitive disposal fees. As part of the Plan implementation steps, the MCSWA will soon competitively rebid the hauling and disposal component of its waste transfer operation in order to obtain the best combination of competitive pricing and services for all facility users.
- **Assures Sustainable Local Waste and Recycling Services** – The Plan provides a financially secure and sustainable MCSWA operation that benefits all residents and business in the two-County Region. In addition, the Plan also benefits the private and public haulers that service the Region, since local options for waste and

recycling services are limited, and since the MCSWA operations service many of those needs locally. The recommended Regional Plan provides steps to maintain a strong and viable MCSWA, who in turn can continue to fulfill key roles in waste and recyclables management in the Region. A strong MCSWA also insures proper post-closure care and management of the closed Barner landfill.

- **Is Flexible**---The menu plan offers options, and results in competition that helps minimize waste management costs. MCSWA has taken many steps to provide a local solution to waste management and recycling service needs, and continues to research alternate funding opportunities to make these programs even more economically beneficial to its users. A disposal facility that believes it can offer services to the Region can be added to the Regional Plan after its approval, through the "Process to Add Facilities to the Plan". The Plan provides tools for insuring waste security to MCSWA under a variety of future scenarios.
- **Maximizes Logical Extensions to Existing Systems**---The MCSWA and Juniata County have professional staffs that provide ongoing waste handling, recycling, yard waste composting, public education and financial management advice and services. The MCSWA staff and Juniata County Recycling Coordinator can adapt as needed to meet new program requirements of the Regional Plan; promote logical, economical, and sustainable growth; support expansion of recycling efforts in Juniata County; and support day-to-day system management. Post-closure care of the Barner Landfill will require continued on-site management that can be provided by MCSWA, in addition to its other services and duties. Direct services to businesses and residents of the Region will continue to be provided through a combination of public and private sector efforts.
- **Supports Voluntary Waste Assurance Solutions and Cooperation** - The preferred system of securing waste to the MCSWA Transfer Station relies on continuation of voluntary contracts with private haulers (e.g. volume discount contracts) and continued support of public service operations (e.g. Lewistown Borough, drop-off recycling sites), and establishes a contingency plan for waste security that will only be implemented if and when continued voluntary cooperation in waste security strategies fails. The primary and contingent waste flow security strategies secure the long-term viability of local operations and services, with minimal infringement on local private systems.

The recommended program is described in the following pages.

6.1 The Recommended Program – Overview

6.1.1 Coordination of Contracts and Plan Update Schedules

As this Regional Plan Update was developed, it became increasingly difficult to develop components of the municipal waste plan that could accommodate all of these goals: 1) is logical, and serves the needs of Mifflin and Juniata Counties; 2) accommodates the various waste service contract deadlines of the counties (Mifflin County and Juniata County Disposal Capacity Agreements, Mifflin County large volume hauler discount contracts, and the MCSWA Transfer Station haul/ disposal contract); 3) provides for the Mifflin and Juniata County Plan Updates to be completed in a timely manner, depending upon their respective expiration dates, and; 4) at the same time fulfills all of the municipal waste planning requirements of PADEP. This dilemma resulted in a meeting with PADEP to review these competing goals/ deadlines/ issues, and to develop a consensus approach among PADEP, Mifflin and Juniata Counties, MCSWA, and Barton & Loguidice on a course of action to finalize completion of a logical and implementable Regional Plan.

The following people met at PADEP's South-central Regional Offices on October 21, 2011: William Gomes and Lisa Smith, representing Mifflin County and the Mifflin County Solid Waste Authority, respectively; David Bardell of Juniata County; Terry Keene of Barton & Loguidice (B&L), the planning consultant for Mifflin and Juniata Counties for the Mifflin-Juniata Regional Municipal Waste Plan; and Larry Holley, Todd Pejack, John Lundsted and Tony Rathfon of PADEP. At the meeting, the participants jointly reviewed an October 14, 2011 draft joint plan implementation strategy memorandum developed and circulated by B&L in preparation for the meeting. The group addressed schedule, contractual issues, flow control options, timing and funding barriers that challenged the ability of the two counties to finalize and implement a practical and implementable solid waste plan for the two-county Region that addressed all competing requirements. Issues and barriers were discussed in detail by the group. As an outcome to the meeting, the meeting participants, including PADEP, acknowledged and agreed to the following:

- Current waste disposal-related contracts (the "menu plan" disposal contracts in each of the two counties; the MCSWA Transfer Station haul-disposal

contract; and the large volume discount contracts between MCSWA and the major haulers) are out of sync with the current deadlines for revising and implementing the two counties' solid waste plan updates. In the interest of bringing these expiration dates and deadlines into synchronization, PADEP agreed to give Mifflin and Juniata Counties additional time to complete their plan updates, or alternately, to allow the counties additional time to implement their plan recommendations. Mifflin and Juniata Counties' staffs, in discussions with B&L, have chosen to delay the finalization of the Regional Plan to bring plan finalization into sync with proposed rebid dates for the various waste disposal-related contracts.

- The time extension to finalize and implement the Regional Plan could extend out for several years. This PADEP position is conditioned on the understanding that this is not a simple "menu plan" update, under which not as much additional time would be allowed.
- Mifflin and Juniata Counties are permitted to postpone the rebidding of waste disposal and waste assurance contracts until it is practical to do so, over the next several years. (MCSWA would prefer to rebid or otherwise secure these services in 2013-2014, consistent with the expiration of its current Transfer Station haul/ disposal contract, and working toward a 2015 Regional Plan target start date).
- PADEP will allow the two counties' current sets of menu plan contracts to expire, without new contracts, as long as new waste disposal commitments for both counties are eventually provided for through a new MCSWA transfer station haul/ disposal contract bid (the current MCSWA haul/disposal contract expires on 12-31-2014). The new rebid MCSWA waste haul/disposal contract may need to be coupled with a waste commitment from a disposal site or sites that will accept direct-haul waste from the two counties, for disposal of municipal waste that cannot be processed through the MCSWA Transfer Station.

6.1.2 Waste Security Strategies

At the October 21, 2011 PADEP meeting, the group also discussed in detail, and PADEP specifically acknowledged, the barriers that the Counties are dealing with in trying to develop a waste assurance strategy that is also logical and

implementable. B&L (and the Counties) raised the concern that in order to implement legislative flow control (i.e. County flow control ordinance) as a waste assurance strategy in the two-County Region, the current volume discount contracts must be first terminated (B&L has determined this with guidance from MCSWA's solicitor), since that may create an uneven competitive playing field for waste haulers under the backdrop of a mandatory flow control ordinance. If there is resistance to a flow control scenario with the loss of volume discount contracts from large haulers, haulers may pull waste in protest, creating a situation where MCSWSA may actually lose tons delivered to its Transfer Station, as opposed to flow control securing more waste from haulers.

Implementing flow control could, in some cases, be counterproductive to stabilizing waste security of deliveries and MCSWA's waste management programs in general, in comparison to the current large volume discount contracts (as long as these contracts continue to work effectively here). Thus, this Regional Plan recommends that flow control should only be considered as a contingency or fall-back measure, to be employed only under circumstances where other waste assurance measures (such as the volume discount contracts) do not continue to be effective in securing sufficient quantities of waste to the MCSWA transfer station in the future. Therefore, as a further outcome to the October 21, 2011 meeting, PADEP acknowledged the acceptability of Mifflin-Juniata's approach to implementing the waste assurance strategy for the region that was recommended in B&L's 2009 Phase 1 Wastestream and Revenue Assurance Study. These components of the recommended waste assurance and flow control strategy for Mifflin and Juniata Counties, from the 2009 study, that PADEP has acknowledged and agreed to, include:

- MCSWA should institute (this has been done) large volume discount contracts to secure commitments of waste deliveries to the MCSWA Transfer Station from major haulers (these three-year contracts were offered to all qualified haulers, and were enacted by January 1, 2010 for two major haulers in the region).
- By securing these large volume-discount contracts, the MCSWA is able to secure waste disposal and economies-of-scale in its operations, and it can share these financial savings with ALL haulers using the waste transfer station, including small haulers and self-haul loads;

- MCSWA should continue to extend these large hauler volume discount contractual relationships as long as they remain effective in securing waste deliveries (the initial contracts expire on December 31, 2012, unless renewed).
- Mifflin and Juniata Counties should work together on a joint 2-county municipal waste plan update to identify and implement common goals (Mifflin County began some initial "Phase 2" plan update work in January 2010; joint planning was initiated in September 2011 as a two-county effort).
- Due to the 2-county joint planning approach and flow control considerations, this becomes a substantial plan revision under PADEP's definitions, requiring an extended comment/ approval/ ratification process.
- The plan update should be used to formalize and confirm the volume discount contract process as a waste assurance measure. The plan update should also incorporate a mechanism for enacting a "contingency plan for instituting flow control" at the county level; this contingency plan would only be implemented if the current large hauler volume discount contracts (and other related means) become ineffective in securing sufficient waste deliveries to the MCSWA transfer station to keep it as a viable and sustainable entity in the future.
- If and when "contingency" flow control needs to be implemented in the future, PADEP expressly agreed at the October 21, 2011 joint meeting that this can be done as an implementation step under a previously vetted flow control-related strategy that is expected to be approved under this current Regional Plan's substantial revision/ approval process (which requires a 6-8 month process to take formal public comment and have the plan ratified by the majority of the municipalities representing a majority of the population base); an additional substantial plan revision process will NOT be required by PADEP to ultimately implement the contingency flow control measures that were vetted in this Regional Plan under the substantial plan revision process. Future contingency flow control implementation might even be enacted as an implementation step in the Regional Plan that carries no implementation date (as it is not know specifically if and when this legislative flow control step will be needed). Again, PADEP specifically confirmed at the meeting that an additional

substantial plan update process will not be required to implement contingent flow control ordinances that were discussed as part of this current two-county substantial plan update process.

6.1.3 Overview of Recommended Program

Using the backdrop of these meeting discussions and mutual agreements, a revised recommended strategy for finalizing the Mifflin-Juniata County Joint Municipal Waste Plan Update was developed and was accepted by PADEP. The preferred municipal waste management program for Mifflin and Juniata Counties focuses on continuation of large volume discount contracts with major waste haulers; flow control as a contingent component of the plan update that is not to be implemented unless needed in the future; and an extended plan update finalization/ implementation schedule that brings conflicting contracts into synchronization with each other and with the plan update schedule. Key pieces of this revised recommended municipal waste program and the Regional Plan are:

- Pre-finalization of most components of the Joint Mifflin and Juniata Counties Municipal Waste Plan Update as a substantial joint plan update. The draft joint plan will contain a sample flow control ordinance that can be implemented by each county in the future, if and when volume discount contracts and other measures are insufficient to secure sufficient waste and revenues to sustain the MCSWA's waste transfer and integrated waste and recycling programs.
- PADEP to issue a three-month extension to its 901 planning grant for Mifflin County, from January 20, 2012 to April 20, 2012. (Note – PADEP approved Mifflin's 3-month time extension in December 2011). Juniata County's Section 901 planning grant deadline should not be an issue here).
- B&L, Mifflin and Juniata Counties will utilize the remaining Section 901 grant planning budgets to complete most components of the joint plan update as a pre-final document.
- Mifflin County and Juniata County are encouraged to identify additional work tasks that have come up, or that are needed to complete the

Regional Plan, and to include those tasks and budgets in a new 901 grant application or applications, primarily for work that wasn't envisioned or included under the current 901 planning grants (such as additional county staff support budgets, bidding assistance, delayed plan approval/ adoption/ ratification costs, etc.).

- This Mifflin-Juniata Regional Plan focuses on finalizing the Regional Plan chapters under the PADEP-agreed framework of:
    - Continuing to utilize large hauler volume discount contracts as a preferred waste delivery (to the MCSWA transfer station) assurance approach. Waste haulers should be encouraged to continue to bring municipal waste to the Authority from beyond Mifflin and Juniata Counties, to improve MCSWA system economics.
    - Establishing a set of criteria that would trigger the implementation of waste flow control to the Authority's transfer station in the future, such as a refusal by large haulers to renew or enter new large volume contracts, failure to comply with volume contract provisions, failure of the Authority to secure financially sustainable revenues through the volume discount contracts and other related measures, etc. This set of trigger mechanism criteria can be developed as an implementation step in the Regional Plan;
    - Providing details on the procedure to be followed to implement flow control ordinances in the two counties in the future, if needed, through a non-substantial plan update process. These contingency implementation guidelines, and a copy of a draft County Flow Control Ordinance, are included as Appendix T;
    - Using MCSWA to provide technical advice to Juniata County in Juniata's establishment and expansion of recycling opportunities in that county; this support has already begun, and the plan update will document current and proposed future efforts to support expanding recycling in the region. Acknowledge that this is a long-term process, and that the Authority can assist Juniata County's recycling coordinator and help facilitate expanding recycling programs in Juniata County, but that such programs need to be self-sustaining; the MCSWA does not have funds to invest in recycling programs that are not sustaining, either in-County or out-of-County;

- Identifying the implementing entity for the component's of Mifflin's and Juniata's portions of the joint plan update. Mifflin County has an existing delegation agreement that its solicitor has determined is adequate for the MCSWA to implement the new Regional Plan on behalf of Mifflin County. A copy of Mifflin County's delegation agreement is presented in Appendix A. Juniata County has decided to delegate its recycling duties to the Juniata County Conservation District (JCCD), and has designated a JCCD employee as County Recycling Coordinator. A copy of the Juniata County delegation agreement is presented in Appendix A.
- Delaying the solicitation of waste disposal capacity for the region until 2013-2014. This will be accomplished through a new haul/ disposal contract for waste from the waste transfer station (the current contract expires 12-31-2014). Contract should have intermediate terms, an exit clause, and be coordinated with the plan update finalization schedule. Bid should continue to include discounts based on increased volumes delivered to the transfer station and other financial incentives. Bid to be fair, open and competitive, and to include bidding for waste disposal services of municipal wastes from Mifflin and Juniata counties, at a minimum.
- Concurrent with the transfer station haul/ disposal bid, undertake a separate SOI (solicitation of interest) for municipal waste disposal (with no waste delivery commitment) for directly hauled municipal wastes from Mifflin and Juniata counties, for wastes that cannot technically or economically be handled by the transfer station, such as some C&D wastes, etc.;
- Extending the projections of population, waste generation and recyclables quantities through 2024, to ensure 10-year projections for a plan that will have an interim tem through January 1, 2025 and a formal 10-year planning term from 2015 through 2024.;
- Minimizing components of the joint plan update that apply to only one county (either Mifflin or Juniata).

6.2 Collection of Refuse and Recycling

MSW Collection

As previously discussed in the Plan, waste collection is a local municipal responsibility. The collection methods for municipal solid waste (MSW) that are practical for this region include municipal collection, contracted collection, subscription collection and drop-off/ transfer collection.

In the Region, Lewistown Borough is the only municipality currently utilizing municipal collection. Municipal collection can be beneficial because it regulates the amount of trucks on the roadways as well as the days and times that refuse is collected. Unfortunately, a municipal collection program is capital intensive and requires a significant amount of money for start up for the purchasing of vehicles and equipment.

Contracted collection (municipalities typically bid for refuse and/or recycling collection and disposal/recycling services with a single hauler) can be beneficial to municipalities. Currently, the Borough of Juniata Terrace (Mifflin County), and Mifflintown Borough and Mifflin Borough in Juniata County, have contracted waste collection. Contracted collection allows municipalities to request specific refuse and recycling collection services, which will benefit their residents. Contracted collection allows a hauler to become more efficient in its collection routes, and often results in savings to residents of 25-35% (based on Barton & Loguidice's decades of experience in the waste management industry) compared to similar services provided through a private subscription program. Often, bundled services (waste and recycling pickups, bulk item pickups, education, etc.) can be part of one municipal contract with resulting "bundled" cost savings. Contracted collection also reduces the number of refuse collection vehicles on the roadway and related environmental impacts of truck traffic.

Subscription collection (individual contracts between haulers and customers) is the dominant method currently in use in the Region. With subscription collection, residents can choose their own waste hauler, which allows them to subscribe with the hauler who may offer the rates or the collection services that are most compatible with the resident's needs. Subscription collection is also beneficial for small waste hauling businesses, because it allows this type of waste hauler to be

able to remain active in a municipality and continue to offer waste collection services on a small scale.

Drop-off/transfer collection refers to the method of refuse collection in which residents can take their refuse to a drop-off location or a transfer location. The MCSWA Transfer Station has hundreds of self-haul waste customers. Drop-off/transfer collection can be beneficial to residents in rural areas, considering many rural areas have a limited number of refuse collectors and/or no refuse collection available. Drop-off programs in rural communities may also help limit the temptation for open dumping of wastes and bulky items. A drop-off program is more cost-effective than a curbside collection program for waste (and recyclables), since the individual homeowner or business transports the materials to the collection site. The biggest drawback of this system may be the inconvenience of hauling one's own waste to the drop-off site.

The Plan acknowledges that each of these collection systems appears to be viable in portions of the Region. Individual municipalities will retain the choice of what kind of waste and recycling system they wish to have in their community. This Plan offers an example of template bid documents in Appendix P for any municipality that wishes to consider saving its residents and small businesses money by bidding for services, adding or bundling multiple services in a municipal bid, or possibly through multi-municipal bidding to take advantage of economies of scale, or to help provide services in an area where subscription haulers are reluctant to serve.

Contracted collection services can be modeled around the municipality's needs. Some examples of what these contracts may include (this is not a comprehensive list) are weekly or bi-weekly curbside refuse bag collection (unlimited or a specific quantity of bags); pay-as-you-throw refuse bag collection (can be the only collection service offered or paired with a curbside bag collection program that limits the quantity of bags); weekly, bi-weekly or monthly recyclables collection (variety of recyclables collected can be stated in the contract or negotiated between the municipality and the hauler); bulk item collection (frequency and items accepted can vary); and leaf and yard waste collection (frequency and items collected can vary). The bid can specify whether the hauler or the municipality bills the customers for services, and can even include collection of a local recycling services fee in the customer bill, which can be used to repay the municipality for managing the contract, providing education and value-added services, etc.

The Plan acknowledges that many municipalities will continue to use the method of subscription refuse collection, as it requires minimal or no municipal involvement in the provision of waste and/or recycling services. The subscription collection method can allow small waste haulers to remain competitive, and allows residents to individually select their waste hauler based on costs and needs. Subscription collection may be beneficial for municipalities who are not mandated to recycle under Act 101, whose municipality contains a variety of waste haulers and whose municipality does not have the means necessary to monitor refuse collection. The Plan recommends municipalities who use subscription collection enter into discussions with their waste haulers to provide increased recycling opportunities for their residents. A local ordinance could be enacted that requires haulers providing subscription collection in the municipality to also collect recyclables curbside.

The Plan acknowledges the benefit of drop-off/ transfer collection of waste, and this is a very popular service provided at the MCSWA Transfer Station. This can help service the waste disposal needs of rural areas, where no curbside collection program is available, and is an alternative to subscription collection.

In 2008, Mifflin County passed a mandatory waste collection ordinance, a copy of which is contained in Appendix D. This ordinance mandates that each municipality in Mifflin County enact a statute requiring that all municipal waste generated in that municipality be collected by a PADEP-licensed hauler and be disposed at a municipal waste facility approved in the Mifflin County Municipal Waste Management Plan. (Under certain circumstances, the ordinance also allows residents of the municipality to transport their own waste to a facility named in the plan).This Regional Plan supports the 2008 Mifflin County Mandatory Collection Ordinance and fully supports its complete implementation as soon as possible.

Recycling Collection

Similar to waste collection, recyclables collection is a local municipal responsibility. The collection methods for recyclables are similar to the collection methods for residential waste. Recycling can be collected through a municipal collection, contracted collection, subscription collection or drop-off/transfer collection. The benefits of these collection methods are similar for recycling as for refuse collection. The counties and SWAC groups have expressed an interest in increasing recycling opportunities in the Region. In most of the Region's municipalities, where

subscription collection is prevalent, residents and businesses may not be receiving (or may not even be offered as an option) recyclables collection. Municipalities are only required to collect recyclables when they are mandated to do so (by population and density) under Act 101, and only one municipality (Lewistown Borough) in the Region is mandated to recycle under Act 101. For this reason, the Plan encourages the municipalities with subscription collection services to work with their waste haulers to provide increased recycling opportunities for their residents. Park's Garbage Service offers curbside recycling service to its subscription customers on certain collection routes. Cocolamus Creek Disposal offers the "buy-a-bag" recyclables collection program on certain weekly collection routes in Juniata County.

A municipal bid contract is another option for municipalities that wish to use a private hauler to add a recycling program to their municipal services. The bid could be just for recyclables collection, or could be bundled with a waste collection bid contract. Recycling program costs can be included in the fees to residents and businesses. Appendix P contains some examples of bid templates for municipalities to provide recycling collection services through contract bidding. Another option, in subscription bid areas, is for a municipality to pass an ordinance requiring any subscription waste hauler to also provide curbside recycling services.

In regard to curbside recycling collection, haulers can collect recyclables using any one of three methods: source-separated, dual-stream or single-stream. Currently, Park's Garbage Service and Cocolamus Creek Disposal Service, which collect a large portion of the Region's curbside recyclables, accept materials single-stream. The majority of the conventional Act 101 recyclable materials receiving/ processing facilities in the Region, including the MCSWA Transfer Station, Pheasant Valley Recycling and Paul's Recycling Yard, accept materials source-separated. These facilities service most of the drop-offs located within the Region. Although major haulers operating within the Region that currently accept recyclables curbside use a single-stream system, this Plan also supports the local recyclables processing businesses that are currently source-separated. The only single-stream processing facility located within the Region is the Cocolamus Creek Disposal (CCD) Services Facility. This facility only accepts single-stream recyclables in the CCD "buy-a-bags" (either from CCD collection trucks or from individual residents); other recyclables brought to the CCD facility by residents must be source-separated. Since the only single-stream facility in the Region is not open to other hauling companies, all other

recyclables collected curbside, using a single-stream system, must be transported out of the Region for processing, as Park's does (to Penn Waste near York, PA).

The Region wishes to find ways to provide and increase recycling opportunities and services to its residents, especially in Juniata County, where opportunities are more limited. Securing funding support for the expansion of recycling programs (such as drop-off programs) is a challenge, but is critical to such program expansion.

6.3 Transportation of Refuse and Recycling

Municipal Solid Waste (MSW)

Within the geographic boundaries of the Mifflin-Juniata Region, there is one (1) permitted transfer station that accepts both waste and recyclables (MCSWA). It is important, indeed critical to the long-term service options for the Region, for the MCSWA to remain a viable and sustainable operation. In addition to providing a local solution for hundreds of self-haulers of waste, and a local "disposal" point for the area's commercial waste haulers, the MCSWA provides many integrated waste management and recycling services to the Region. This Plan strongly encourages and supports the continuation of MCSWA waste management operations.

Recycling

Hauling of recyclables can be via self-haul to stand-alone drop-off sites, to drop-offs at transfer stations and landfills, to materials processing facilities, or even to direct markets. Ultimately, the goal is for all segregated recyclables to be shipped to markets for reuse, or reused locally (such as inert materials that can be used for pipe bedding or aggregate).

In general, any improvements that can be made in the hauling of recyclables to collection and processing sites (by municipal haulers, private haulers, hauling of drop-off containers, etc.) are supported by this Plan. As recycling collection opportunities expand in the region, the hauling of these recyclables to multiple outlets by the collectors is probably the most efficient form of transport of collected recyclables.

6.4 Processing/ Disposal of Refuse and Recycling

Waste Processing Alternatives

Because of the significant excess in available landfill disposal capacity within a relatively close proximity of the Region (especially via the MCSWA Transfer Station), siting criteria issues, implementation costs, and the available waste volume, capital-intensive alternative methods for processing/ disposing of the Region's municipal waste are not, in general, believed to be cost-effective and/or technologically proven alternatives. The following alternatives that fall into this category include:

1 Construction of a new waste-to-energy facility (incinerator).

2 Construction of a new refuse-derived fuel (RDF) facility.

3 Construction of a waste conversion technology facility.

4 Construction of a new publicly owned sanitary landfill.

Waste conversion technologies, in general, carry a high cost and have a high risk factor. These technologies have limited operating experience at only small scales, have previous failures, and or have had trouble becoming large scale operations. For these reasons, these are not recommended alternatives for this Region at this time.

Where waste diversion from landfills is determined to be of value in the Region, the segregation of food waste and other organics from the wastestream have the potential to yield anywhere from 10% to 30% waste reduction in waste tonnages reaching landfills. One opportunity that the private sector is now successfully employing (and further developing) in the Region is biogas generation from food waste in agricultural anaerobic digesters, with biogas used to produce energy and waste heat used for farm building heating. This Plan supports the continued development and utilization of these privately owned facilities to accept food waste and other organics. As noted in Chapter 5, there may be an opportunity for a public-private partnership to further develop a biogasification project to accept food waste; this will require additional investigation and research to determine its need, feasibility and cost to the public sector.

Also, aerobic co-composting of food waste with yard waste and other organics has been proven at multiple composting facilities in central Pennsylvania. There may be an opportunity in the two-County Region to possibly develop a food waste composting facility, located at the MCSWA site or elsewhere, that could divert organics from the landfill and "recycle" the organics by producing a beneficial compost end-product. This could either be in the form of a public-private partnership project, with an entity such as WeCare (as was previously proposed), or as a publicly-sponsored simple windrow or aerated static pile project. Of course, securing suitable capital and operating funding sources for a public-private or a public co-composting project are required first steps in developing such a concept, both based on the MCSWA's current financial constraints and based on the fact that PADEP has not even accepted Section 902 Recycling Equipment grant applications for several years, and clearly has its own budget restrictions on program funding at this time.

Both an anaerobic digester and an aerobic composting facility would be able to accept the organic fraction (such as food waste residuals from grocery stores and other large generators) from the municipal wastestream (called source segregated organics, or SSO). An SSO diversion and collection program, and an organics composting project (or alternately, support of a private anaerobic digester project) may be a concept worthy of further consideration, either as this Regional Plan is finalized, or as a future study. The cost of these processing options (and/ or cost savings to the public), and the competing goals of aerobic and anaerobic projects should be considered as part of any such evaluation.

MSW Waste Disposal

The Counties are responsible for managing the safe disposal of their municipal waste from within the Region. The system described in this Plan helps ensure that municipal waste generated in Mifflin and Juniata Counties will be delivered to facilities that are legally permitted and contracted with the Region, consistent with Act 101 requirements.

As part of this Regional Plan, a Solicitation of Interest (SOI) will be issued to identify disposal facilities that wish to be included in the Plan as designated disposal sites. The SOI process, as well as the process for a facility to be added to the Plan at a later time, is summarized in Chapter 7. Under this "menu" plan, any and all pre-

qualified facilities (through a review of submissions in response to the SOI) that enter long-term disposal contracts with the implementing entity for the Regional Plan will be identified in the plan as Designated Facilities, and will be permitted to accept municipal waste from the Region under this Plan. The contracts will not require the guarantee of any specific amounts of waste to any of the designated facilities.

The process used to solicit interested disposal facilities ensures that all facilities anywhere in the United States have an opportunity to be included. Having multiple facilities available for disposal promotes competition that will help to keep the system cost-effective. Additional disposal sites can petition to be added to the Plan in the future.

It is recognized that the MCSWA Transfer Station currently transports the majority of the Region's waste to the Laurel Highlands Landfill under a haul/disposal contract. This contract will be rebid soon to replace the current contract that expires at the end of 2014. The Laurel Highlands Landfill, selected through the last competitive bid process, can meet all of the disposal capacity needs of the Region through the end of 2014, until the new contract (through rebidding) becomes effective in 2015.

This Plan supports the solicitation of multiple processing/ disposal facilities through a menu plan SOI process to secure waste disposal capacity for the planning period, as well as a Request for Proposals (RFP) process to select a new MCSWA Transfer Station haul/ disposal service provider. Both solicitation processes will be widely advertised and will be fair, open and competitive.

Recyclables Processing

The MCSWA Transfer Station has capacity to process and bale certain recyclable materials in the "Recycling Depot" portion of the transfer station building, and to load and ship recycled materials to market. MCSWA has an agreement to bale mixed plastics from the Borough of Lewistown at the Recycling Depot in a cooperative municipal effort. The MCSWA has the capacity to increase the amount of recyclables it currently accepts from residential customers and from its drop-off sites. If Juniata County adds drop-off sites in the Region, the recyclable materials could be brought to the MCSWA site for processing, if desired. The MCSWA Transfer Station would like to continue to accept source-separated items at both the transfer station and at the drop-off facilities.

The two largest solid waste haulers in the Region have provisions to collect recyclables from residents in certain areas of the Region and either process them at their own facility (CCD) or load and ship them to an out-of-county processing site (Park's). The Region also has a number of additional recyclables receiving and processing facilities, as detailed in Section 3.6 of Chapter 3. For this reason, this Plan supports both public and private recyclables processing facilities in the Region. This Plan also supports the expansion of all public, commercial, and institutional recyclables collection and marketing opportunities in the Region.

6.5 Sewage Sludge

Methods currently being used for wastewater treatment plant (WWTP) sludge disposal include land application, landfilling, hauling liquid sludge to other WWTPs, and using reed bed filters. It is expected that the WWTPs within the Region will continue their current method of disposal throughout the planning period, unless regulations governing the land application programs for sewage sludge or septage change substantially, which is not expected. Most WWTPs surveyed did not indicate any plans or interest in changing their current sludge disposal methods. This Plan will provide capacity for sewage sludge disposal through the SOI solicitation process for disposal capacity assurance.

6.6 Construction and Demolition Waste

Much of the construction and demolition (C&D) waste generated in Mifflin and Juniata Counties is recycled, reused as construction products, placed in clean fill, or disposed of at permitted municipal or C&D waste landfills. According to Table 1-5 in Chapter 1, approximately 780 tons of C&D waste originating from the Region was disposed of at state-permitted disposal facilities in 2012.

The Counties should continue to encourage the safe handling or disposal of small volumes of C&D waste, such as:

- Educating citizens about the availability of safe and legal opportunities to dispose of these materials, including the clean wood and scrap metal programs at the MCSWA Transfer Station;
- Identifying recycling and reuse opportunities for select C&D materials;

- Educating residents about the option to rent dumpsters or roll-off containers for collection and disposal of wastes created during remodeling projects;
- Providing a drop-off site for these materials; and
- Encouraging the enforcement of municipal waste ordinances as they apply to illegal dumping.

This Plan will provide for capacity of C&D materials through the SOI solicitation process for disposal capacity assurance.

6.7 Household Hazardous Waste

Currently, neither County in the Region offers annual Household Hazardous Waste (HHW) collection events. Additionally, none of the municipalities in the Region currently offer HHW collection events for their residents, although there are special collection events in place in some municipalities for many hard-to-recycle items. Mifflin and Juniata County advertise special collection events on their websites, and provide locations where residents can recycle items, such as electronics, oil, batteries, and other items.

Residents are also encouraged to check with large retail stores and chains such as Wal-Mart, Home Depot, Lowes, Radio Shack, Staples, Best Buy, Giant, and Weis Markets for recycling programs that may be available in local areas. Many items, such as used motor oil, may also be recycled at some Pep Boys, Jiffy Lube, and some local service stations. Residents are encouraged to call local county recycling coordinators or check with their local municipal or county websites for details. Market conditions dictate what items may be accepted, so residents should check new listings throughout the year.

The Plan recommends the Counties consider partnering to conduct HHW collections which will reach more county residents. These partnerships can be between the Counties, municipalities, and/or businesses. HHW or special collection events can be advertised through local newspapers, county newsletters and county websites. Educating the public on these collection events, i.e. what is accepted, why it should be recycled, when the collection event is, who can participate in the event, etc., will ensure the maximum amount of participants at each collection event.

The Pennsylvania Department of Environmental Protection (PA DEP) has an Act 101 Grant entitled Household Hazardous Waste Collection and Disposal Grant in which municipalities and counties that establish HHW collection programs may be reimbursed up to 50% of approved costs for the collection program. This grant cannot exceed $100,000. The Plan recommends the Counties and/or municipalities which organize a HHW collection event apply for this partial reimbursement grant. However, it must be stressed that an HHW collection event is an expensive endeavor and the Counties must be assured that adequate funding for the 50% match is available before proceeding.

6.8 Pharmaceutical Waste

The U.S. Department of Justice Drug Enforcement Administration (DEA) sponsored the seventh annual collection program with local law enforcement agencies and police departments for expired pharmaceuticals on April 26, 2014 called the National Take Back Initiative.

The next scheduled DEA event has not been announced.

The DEA expects to conduct similar programs in the future, and will advertise through the regional recycling coordinators and on the DEA website. The Plan recommends the recycling coordinators in each County continue to monitor the DEA website to ensure the counties take advantage of the National Take Back Initiative each year that it is offered:

http://www.deadiversion.usdoj.gov/drug_disposal/takeback/index.html

The Plan recommends the Counties place information on their websites, in their newsletters and in the local newsprint pertaining to pharmaceuticals collection. The information can include businesses which will take certain pharmaceutical items and local collection events. Additionally, the Plan recommends the Counties consider partnering for pharmaceuticals collections in the Region. The partnering effort may increase the number of participants in the collection events, i.e. residents who may have missed one pharmaceuticals collection, can still participate in another collection that may be offered in the adjoining county. Collection sites should continue to be established in each County for this one-day annual event.

6.9 Infectious and Chemotherapeutic Waste

The current system for managing infectious and chemotherapeutic waste generated in hospitals, nursing homes and other medical facilities, which is managed solely by the private sector, is adequate for handling this material. The Region will continue to rely on this system and is not considering other options for this 10-year planning period. This Plan will request capacity for infectious and chemotherapeutic wastes disposal through the SOI solicitation process for disposal capacity assurance.

6.10 Marcellus Shale

The Marcellus Shale deep drilling gas operations are a fast-growing industry in the northern half of Pennsylvania that generate drill cuttings, wastewater treatment sludges, and other residuals that are having a growing impact on municipal waste landfills in the Region (some landfills are reportedly taking in over 500 tons per day of drilling residual waste. Although neither Mifflin nor Juniata County host any Marcellus Shale drilling sites, the residual waste from these nearby activities can potentially impact disposal sites that also accept Mifflin-Juniata Counties' municipal wastes. By Mifflin and Juniata Counties contracting for guaranteed landfill disposal capacity in Disposal Capacity Agreements, which are executed as a result of the SOI solicitation process, the Region will assure that it retains sufficient capacity to meet its long-term municipal waste disposal needs through the 2024 end of the planning period.

6.11 Illegal Dumping

According to PA CleanWays, there are some possible solutions to illegal dumping. These solutions include:

- Organize a Cleanup
    - Cleanups are an effective way to combat littering and illegal dumping. Cleanups help to build ownership, restore community pride, and send a message that dumping will no longer be tolerated.
- Organize a special collection event
    - Special one-day collection events are worthwhile. These special collection opportunities are very effective when routinely offered, such as

each spring or fall as a community cleanup day, but are also successful when offered as community resources permit. These special collections commonly target hard-to-dispose of materials such as tires, appliances, scrap metal, computers, electronics, and household hazardous waste. Most of these items account for what is found in illegal dumps.

- Physical deterrents
  - The placing of guard rails or mounds of dirt at pull-off areas, as well as the planting of trees, can help provide a barrier that will limit accessibility to a site for future dumping.
- Site monitoring and maintenance
  - It is important to monitor a site after an area has been cleaned in order to watch for subsequent dumping or littering, to keep the site clean, and to report any incriminating evidence to the proper enforcement agency. Keeping the site clean makes it easier to spot new trash and discourages subsequent dumping, since trash attracts trash.
  - Enforcement, with site monitor support, effectively decreases the incidents of dumping and littering. When word gets out that dumping activity will not be tolerated and violators will be caught and prosecuted, dumping decreases.
- Community education
  - Intentional illegal dumping and littering are social problems that require a shift in attitudes and practices. Education is the key to changing values, habits, and attitudes. Education programs should be tailored to inform the community and can take many forms, such as, school/community presentations, press releases, radio and newspaper ads, and publications.
- Enforcement of existing laws
  - Any improper disposal of trash is illegal and violators can be prosecuted. Numerous Pennsylvania agencies enforce laws addressing improper disposal of trash. The Pennsylvania General Assembly creates and enacts our littering and dumping laws. County and municipal governments create and enact ordinances that are specific within their local boundaries. When the Mifflin County Mandatory Waste Collection Ordinance was passed in 2008, eleven of Mifflin County's sixteen

municipalities reported having an ordinance dealing with refuse collection and disposal. However, when the 2011 municipal survey was conducted for this Regional Plan, only seven of Mifflin County's municipalities reported having a solid waster ordinance in effect that governs the collection and transportation of municipal waste and recycling. The number of Juniata County municipalities that reported having similar ordinances in effect is three out of seventeen municipalities in the County, based on the 2011 municipal survey for this Regional Plan.

Landfills will be asked, possibly through the SOI solicitation process for disposal capacity, to donate some discounted or free landfill capacity each year to the Region's open dumping cleanup efforts.

6.12 Open Burning

Open burning of wastes is an emotionally charged issue that elicits strong responses both in favor of and in opposition to the right to burn waste. Many reasons can be given to stop the open burning of waste. PADEP requires anti-burning ordinances, at least for recyclables, in mandated communities and in communities that are receiving Section 902 and 904 grant funding from PADEP for recycling programs. With that said, burn ban ordinances are a local issue that each municipality needs to deal with, and to determine whether or not to implement a local ordinance to prohibit it. To aid the process, this Plan offers several versions of anti-burn ordinances from other communities that have instituted them. These examples include one ordinance that bans the burning of recyclable materials and another that includes an outright ban on the burning of wastes within a municipality. These sample ordinances are included in Appendix P.

There have been repeated attempts in Mifflin County to draft ordinances to prohibit the burning of refuse, all to no avail. While some Mifflin County municipalities do prohibit the burning of refuse (four based on the 2011 survey), the majority do not address this issue or allow the burning of certain items at select times. Two Juniata County municipalities also report (in the 2011 survey) having a municipal ordinance that bans burning of refuse. While Mifflin County has also adopted a mandatory collection ordinance, this too has not been adopted county-wide by municipalities and is currently not being enforced.

The failure of Mifflin County and its municipalities to adopt ordinances prohibiting burning has made it very difficult for the MCSWA to file for the needed 902 recycling equipment grants. Recycling equipment obtained with future 902 grants cannot be used in municipalities that allow the burning of recyclable material. Given the fact that the 902 grant program has been severely scaled back and is now extremely competitive, the lack of anti-burning ordinances makes it difficult for the MCSWA to qualify for 902 funding.

Hence, this Plan states that is vital for municipalities to pass ordinances prohibiting the burning of recyclable material, so that Mifflin and Juniata County municipalities (and/ or the County programs that may service them) are eligible to receive 902 funding for recycling equipment and facilities, and so that they significantly improve their prospects for obtaining 902 funds to grow the recycling programs.

6.13 Expansion of County Recycling Programs

The information presented in this Plan demonstrates that there is still considerable room for improvement in recycling in the Region. Although all of these ideas may not work in each county, there needs to be a greater emphasis on cooperation, with an analysis of what can realistically be achieved. With decreased grant money to spend on programs, each County must decide what its achievable goals are, and take incremental steps toward realizing the desired end result.

Based on the SWAC meetings and staff discussions, the Plan recommends the following options for expanding the recycling program.

- Develop sources of funding for the expanded programs- First and foremost, the Region must find additional sources of funding for the current and any expanded recycling programs. Recycled material revenue and the transfer station tip fee, along with the ever- decreasing PADEP grant programs, CANNOT continue to be the sole sources of recycling program funding. Funding options to explore should include, but not be limited to, County assistance, municipality fees, commercial and industrial business sponsorships, State and Federal funding programs, institutional grants, and any other viable options. All potential avenues need to be explored. The failure to develop additional and alternate funding will put the expansion of any of the recycling programs in great jeopardy.

- Expand Education Programs – Consider the option of a single, Regional Recycling Website (or good links between the two County websites). As MCSWA has the biggest staff and capabilities, it may be best if MCSWA hosts this regional website. There is a varying level of recycling education and outreach in the area. A website with consistent information across the Region would be beneficial. This would not replace recycling information already publicized on various municipal websites, but it would be most useful for the Region's proposed joint recycling effort goals and to standardize information. The regional website should contain links to any existing websites for more specific local information. It would be especially useful if new materials are added, to publicize special collections, and to explain source-separated and single-stream recycling. It should explain new Regional or state/federal programs such as electronics and pharmaceutical collections, and new state and federal mandates. It would highlight private sector recycling initiatives for items such as food waste, fluorescent bulbs, clothing, plastic bags, furniture, and other drop off items, difficult to recycle items, or new recycling initiatives, as well as links to haulers websites who currently offer curbside recyclables collection within the Region.
- Expansion of Single-Stream, Source Separated Recycling - These two options should be implemented where feasible, with the emphasis on the cooperation of the local private haulers. There are many successful recycling programs in the region. The majority of curbside programs accept single-stream materials and the majority of drop-off programs accept source-separated materials. This Plan recommends that curbside recyclables collection programs, where the recyclables are being sorted and processed within the Region should continue in their current form. This Plan also recommends that curbside recyclables collection programs, where recyclables are being shipped out of the Region, only continue in their current form if accurate weight data for the recyclables can be achieved and reported to the appropriate municipality and/or County. Otherwise, this Plan recommends these systems consider source-separated programs so as to process the material within the Region and therefore report accurate recyclable tonnages to the appropriate entity. If accurate tonnages are not being reported, the corresponding 904 grant application is not receiving the appropriate credit or possible funding. Single-stream and/or source-separated recycling should be encouraged as an option in rural areas or in

areas where the current curbside collection is limited to a few items. Education must be consistent to maintain high quality of materials.

- Expand Drop-off Hours - It is generally less expensive to expand the hours of existing drop-off collection sites rather than to add new sites. MCSWA's public drop-off sites are currently open 24/7 for recyclables drop-off. Other publicly accessible drop-off sites (both public and private) should explore the option of increased hours. This option might be less costly than opening new drop-off sites.
- Consider further developing the concept of food waste composting or anaerobic digestion, and the possibility of expanding leaf and yard waste acceptance sites in the Region (for farm land application or for composting). Colleges, institutions, and large grocery chains in the Region should be included in the discussions, and emphasis should be made to consider developing food waste composting programs. The existing composting operations in the Region should be supported and maximized before new programs at the Authority or County level are initiated.
- Increase educational services to commercial accounts, large and small businesses, and schools and institutions.
- Provide education for recycling in the Regional schools.
- Provide education to residents regarding the health hazards that are caused by open burning
- Educate the population regarding how to discard household hazardous wastes by listing resources for disposal of these wastes.
- Continue with DEA or other nationally sponsored pharmaceutical waste collections as well as hard-to-dispose items
- Investigate expanding the types of recyclable materials collected curbside or at local drop-off sites.
- Select material commodities that are more cost-effective to collect.

6.14 Expand Juniata County Recyclables Drop-off Program

The Region should continue to support expanded drop-off efforts in Juniata County (and also in Mifflin County, where opportunities exist) for diverting recyclable materials from the waste stream. MCSWA may be able to provide guidance and assist Juniata County in the development of municipal and other drop-off programs for recyclables in the County. Special attention should be given to education for existing programs and the development of programs in areas with limited recycling opportunities. Municipalities in Juniata County should consider drop-off collection programs as a way to implement low-cost recycling opportunities for residents.

Municipalities can consider developing one, centrally located drop-off center, provide 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 centrally-located drop-off site. The Juniata County Recycling Coordinator, in conjunction with the MCSWA, can provide guidance and assistance to municipalities interested in siting drop-off centers and developing recycling drop-off programs.

MCSWA can also provide some bidding and contract administrative advice to Juniata County, should it wish to again release an RFP for drop-off services. This RFP should be consistent with existing drop-off programs in the Region, for standardization purposes.

Drop-off collection sites require a minimal amount of equipment and site preparation to develop as compared to a curbside program. Site preparation costs are typically less than $10,000 per site and often much less. Site preparation may include costs such as paving, fencing, lighting, and the purchase of collection bins. Equipment and site improvement costs are 90 percent reimbursable through Action 101-Section 902 recycling grants (when that grant program is accepting applications). However, as previously discussed in Section 6.12, the issue of the burning of recyclable material needs addressed.

Yard Waste Program Development

The MCSWA Transfer Station plans to continue to operate its permitted windrow yard waste composting operation. This operation will continue to be performed in

full compliance with applicable regulations, including the Permit–by-Rule Guidelines for Yard Waste Composting Facilities. The MCSWA will continue to look for ways to improve yard waste collection and processing, and to encourage additional delivery of materials.

Recycling Program Implementation Tasks

The tasks involved in implementing this proposed recycling strategy in the Region are outlined below.

Recycling Program – Strategic Plan

Drop-Off Recycling Programs

- Evaluating drop-off program options/opportunities.
- Development of more commercial/industrial collection programs.
- Identify additional recycling markets through investigation.
- Acquire drop-off sites or agreements for use of sites when feasible.
- Promote municipal drop-off programs.

County-wide or Regionally Mandated Trash Collection and Recycling Services

- Evaluate a "Green-box" residential trash collection system that would use staged garbage collection "boxes" in identified locations throughout the County: this trash collection service option may include recycling opportunities. Again, funding of such a program must first be identified before any serious consideration of this option is expended.
- Evaluate costs and feasibility of a County-wide bid for trash collection service that may include recyclables collection.
- Evaluate costs and feasibility of a municipal or joint-municipal bid for trash collection service that may include recyclables collection.

Yard Waste Composting

- Continue existing programs and expand as feasible.
- Identify additional opportunities.
- Agreements between municipalities and MCSWA for expanded MCSWA composting
- Process design and equipment specification.
- Expanded sites and operations

Public Education Program

- Expansion of County's educational program efforts with focus on the County's school system.
- Investigation of municipal needs.
- Continue to design/expand program structure.
- Design, production, and distribution of educational materials.
- Research funding alternatives.

Recyclables Quantities Documentation

- Establish a program to enhance the annual reporting of recyclables collected (types, quantities, and sources).
- Incorporate this new data into the County's Annual Act 101 Recycling Report.

Recycling Program Funding

- Determine the outstanding study and planning needs of recommended recycling initiatives and strategies, and apply for PADEP Section 901 planning funds to support up to 80 percent of the followup study costs.
- Identify and pursue alternate funding sources and commitments for recycling program enhancements in Mifflin and Juniata Counties, including potential in-county and external sources.

- Apply for PADEP Section 902 Recycling Program Development/ Equipment as appropriate.
- Ensure that PADEP Section 904 Performance Grant Applications document and include all documented and eligible recyclable quantities.
- Keep track of statewide initiatives by CCAP, PROP, the "Fee-40" Group and other agencies/ organizations that are pursuing legislative changes to Act 101 that will allow county administrative fees to be collected.

6.15 Program Funding and Fees

The MCSWA has been taking meaningful steps recently to further reduce costs and to increase its revenues. MCSWA has made significant staff cuts over the past four (4) years, and has reduced other internal operating costs where possible. It has also instituted large volume hauler discount contracts to provide wastestream delivery assurance, and also to raise additional tipping fee revenues through additional tonnages.

Projects and opportunities with cost-saving or revenue-generating potential that the MCSWA has pursued and/ or participated in discussions, over the past several years, and the current status of these pursuits, include:

Options to Develop Revenue-Generating Business(es) at the MCSWA Site:

- WeCare organics processing project – after lengthy analysis, project suspended by WeCare pending the infusion of grant funding to offset project capital costs, and the commitment of additional sewage sludge volumes to the project to improve economies of scale
- Eco-Friends Inc. mixed waste processing facility – many questions on process details and reliability of technology – no further action

Concepts to Generate Income from the Closed Barner Landfill Site/ Energy Potential?

- ECC landfill gas capture and destruction for carbon credit benefits – contract entered with MCSWA, but carbon credit market dropped, ECC no longer pursuing (activities suspended).

- Landfill gas capture potential – B&L pursued several potential private developers, but no interest because:
  - No gas collection system exists now at Barner (capital cost to install)
  - Barner landfill is too small to generate much interest, and gas production potential is now decreasing annually (landfill closed in 2005)
  - Natural gas prices have dropped in the industry, so landfill gas market potential has also dropped, as an alternative to NG
  - The ECC contract tied up carbon credits contractually, and even if not, the carbon credit market value has significantly dropped.
- Photovoltaic (PV) installation at site – Technically feasible, but solar renewable energy credits (SREC's) market has dropped significantly, making this capital-intensive project uneconomical for private developers, with a long payback period, and developers unwilling to accept SREC market risk; MCSWA does not have capital to pursue project on its own, and no longer cost-effective.
- Efficiency improvements – some steps have been taken by MCSWA to replace lights, etc., but costs of modifying Authority offices or transfer station building infrastructure are capital-intensive investments with a very long payback period.

Potential revenue-saving or cost-cutting ideas for the Authority's consideration, that have not already been considered or implemented by the Authority or ruled out yet as infeasible, are listed below. Other than the first item, it is believed that these ideas have limited chance of success, but they are listed for discussion and consideration:

- A food waste and source-separated organics composting facility, either on the MCSWA site or elsewhere. Co-locating a project on the MCSWA Transfer Station Site would allow use of current site personnel, site space and utilities, and would allow use of existing scales to collect tip fees from delivered organics. Cost avoidance of not landfilling these organics could help fund the operations. Composting technology such as Aerated Static Pile should be used to minimize potential nuisances. Capital cost of such a project can be relatively low. Would require contracts with grocery stores and other large

organics generators to obtain minimum processing volumes. Section 902 project capital funding may be possible through PADEP. Carbon credits through composting may be possible (e.g. California Climate Action Reserve, CAR), but the market value of carbon credits has dropped recently. This could also be done as a public-private partnership arrangement with a company such as WeCare, but the revenue-generating potential of a partnership would probably be much less for MCSWA.

- A public-private partnership with an off-site anaerobic digestion facility, to take food waste and organics from the Region. This would reduce waste being landfilled, but also tip fee revenues from tons crossing the MCSWA scales. The financial benefit of this type of project for MCSWA and the Counties would be non-existent or negligible at best.
- Diverting additional high value metals from the received wastestream at the Transfer Station. Other than the selective floor-picking of metals that is now ongoing, some type of mechanical processing may further extract metals from the waste. However, this would require capital cost funding of a mixed waste stream, which is not eligible for grant funding under Section 902 PADEP grants.
- Placement of an exposed geomembrane solar landfill cover on the closed Barner Landfill – this opportunity has very limited potential, because 1) this type of installation is usually more cost-beneficial when there is grant funding support of capital costs, and when the normal landfill liner cover material is replaced by additional garbage landfilling (before closure of the landfill); 2) this would require reopening the Barner Landfill to remove the in-place cap and replace with limited waste quantities; PADEP approval of this project would be required, and there are liabilities of reopening the landfill that MCSWA probably does not want to be exposed to; 3) this type of system benefits most from net metering savings (replacing existing electricity usage on-site with solar-generated electricity), and current electricity usage on the Transfer Station site is relatively low.
- Mining of the Barner landfill cells for precious metals – this is not usually cost-effective on its own merits, and works better with older landfills (where more metals were discarded), unless the mined cells were unlined originally (e.g. Northern Tier ongoing landfill mining and relining project) and significant new lined landfill airspace could be gained (in addition to extracted metals value)

to allow usage of the newly claimed lined landfill airspace. This brings up the questions of reusing or expanding the Barner landfill; these options were studied and ruled out in the 2003 Mifflin County Municipal Waste Plan. Also, there are significant liability questions regarding the reopening of the Barner Landfill, and on mining and lining the adjacent old Lewistown Landfill for new landfilling on-site; PADEP support and approval would be required here.

- Reuse of the landfill property for another use – the closed Barner Landfill is in year eight of a 30-year (or longer) post-closure care program. It is not believed the landfill-proper can be redeveloped for another use until post-closure care is completed.

MCSWA Program Funding Drain - One additional financial burden on MCSWA's current transfer and recycling operations, that has nothing to do with transfer or recycling operations, is the ongoing costs to provide post-closure maintenance care for the closed Barner landfill. The Authority currently spends $60-80,000 annually to provide this care, for a closed landfill that served the two-County Region for nearly 20 years, but for which transfer station tip fees now have to provide the revenue source. Post-closure care may need to be maintained for the next 25 years or more. In a highly competitive marketplace, MCSWA has a difficult time absorbing this additional cost burden and still providing tip fee pricing that is competitive.

The 2009 Phase 1 Wastestream and Revenue Assurance Study researched possible alternate county funding sources, and recommended that Mifflin County consider supporting some or all of this annual post-closure cost through a possible one-tenth mil increase in the County tax assessment. It is recommended in this Plan that an alternate means of Mifflin County funding support, covering some or all of post-closure costs, continue to be pursued with the County Commissioners. MCSWA can still provide the physical post-closure care services, but by securing an alternate source of funding for these activities, the MCSWA Transfer Station can reallocate its revenues to areas of greater need within its transfer and recycling operations, and/ or reduce the fees it charges to its customers.

As part of the Regional Planning effort, some type of fee structure was discussed as a possible funding source for Regional Plan implementation costs. Although MCSWA could technically increase its tip fees to raise operating revenues, this is

counterproductive to voluntarily attracting additional tonnages in a tight regional marketplace. Therefore, a County fee is not being considered at this time.

This leaves a challenge for both Mifflin and Juniata Counties to find funding sources to either sustain (Mifflin County) or expand (Juniata County) current recycling services and opportunities. Mifflin County does not currently undertake any new recycling program unless it is cost-neutral or better. Juniata County, with no recycling operations of its own, must identify its own funding sources to expand recycling. Mifflin County cannot invest funds to support Juniata's efforts; it can only offer advice, guidance, and other administrative support services to Juniata that do not carry a cost.

The SOI solicitation document may ask disposal sites to indicate whether and if so, what kind of support or services they could offer to assist with the stabilization, expansion, and enhancement of integrated waste and recyclables management services in the Region.

6.16 Contingent Flow Control and Triggers/ Mechanisms

The Mifflin County Solid Waste Authority's Transfer Station and Recycling Depot (Facility), and the related waste and recycling operations and support services, are key components of integrated waste and recycling services for the 2-County Region's residents and businesses. To achieve the Regional Plan objectives, it is critical that these Authority facilities and services continue to be delivered throughout the 10-year planning period and beyond.

Benefits of the Authority's facilities, operations and services to the 2-County Region include (benefits which attribute primarily to only one county are noted):

- Provision of a local, in-County delivery point for municipal wastes that are generated by the 2-County Region, via municipal haulers, private haulers, and self-haul individuals
- Provision of a cost-effective means of Authority processing (weighing, unloading, consolidating, loading into transfer trailers, tarping, etc.) and contract-hauling municipal wastes from the Authority's Facility to an out-of-county permitted disposal site

- Provision of a collective competitive bidding (RFP) solicitation for cost-effective, long-term waste hauling and disposal for all wastes managed by the Authority from the 2-County Region, and from the area in general; and Authority administration of this contract over the planning period
- Provision of commercial, institutional and public recycling drop-off services throughout Mifflin County, where the Authority currently stages over 50 recycling drop-off containers that are currently serviced by Authority staff and equipment (Mifflin County only)
- Provision of consolidation (baling and other) services, and administration of hauling and marketing of collected recyclables (Mifflin County only, except for direct haul recyclables brought to the Authority from Juniata County)
- Management/ administration of integrated waste and recycling services and educational programs by the Authority
- Provision for electronics, tires, white goods, scrap metal and clean fill recycling at the Authority's facility, accessible to the Region
- Provision of yard waste processing and composting services at the Authority's Facility
- Provision of Mifflin County Recycling Coordinator duties through Authority staff (Mifflin County only)
- Provision of post-closure activities being performed in-house for the Barner Landfill Complex at a much lower cost than contractor costs required in PADEP bonding of a closed landfill
- Acting as the responsible entity that is delegated to provide municipal waste management planning and implementation services to Mifflin County through a delegation agreement with Mifflin County (Mifflin County only)
- Serving as a mentor, and offering advice to Juniata County and its new County Recycling Coordinator, in its efforts to initiate and expand recycling opportunities for Juniata County's residents and businesses over the 10-year planning period (Juniata County only)

In order to remain viable, the Authority needs to generate sufficient tipping fee revenues to support the capital and operating costs of the Authority's facilities, operations and services. Tipping fee revenues are the primary source of revenue for

Authority operations, and are directly tied to the tons of waste received and the tipping fees that can be collected from the delivery of each ton of materials received. The Authority also receives some income from sales of recyclable materials, recyclable container "pull fees," grants, and other minor sources. However, tipping fee revenues provide the bulk of current Authority operating revenues. The Authority also works to control its operating costs whenever possible, and to secure alternate sources of revenue to support system costs.

The current, and preferred, method used by the Authority in securing waste deliveries, and in receiving sufficient revenues to support its operation costs, is:

- Executing large volume, discounted tip fee contracts with haulers that commit to delivering at least 10,000 tons of waste to the Authority's Facility in a calendar year (with even greater tip fee discounts for larger waste delivery commitments). The Authority currently has two large volume discount contracts with haulers. Typically, these run for a three-year period and are then subject to renegotiation and renewal.
- Passing some economic advantages of larger overall tonnage deliveries (i.e. economies of scale) to its smaller waste haulers that do not have sufficient tonnages to enter large volume discount contracts.
- Continuing to employ cost control measures in its operations, such as the competitive bidding (RFP) for hauling and disposal services from the Authority's Facility.
- Continuing to take steps to secure alternate funding sources for its operations, especially those that are not directly related to the transfer operations, and to increase recycling revenues and grant reimbursements. For example, the Authority currently covers post-closure care costs of the former Barner Landfill (now closed) through its transfer station tipping fees, to help ensure the safe and proper environmental monitoring of that facility which served the residents and businesses of Mifflin County, Juniata County, and others in the area for decades. A new, long-term alternate source of funding would help defray post-closure care costs and would help the Authority control its operational costs, and thus help it offer cost-competitive tipping fees to its users.

While these measures are currently effective in securing sufficient waste deliveries and revenues to cover Authority operational costs, there is no guarantee that these measures will continue to be effective in the future, or that future costs can continue to be minimized. Indeed, within the last five (5) years, haulers became generally unwilling to re-enter volume discount waste delivery contracts with the Authority. This recent event was not a financially sustainable situation for the Authority, and resulted in concentrated efforts to stabilize the Authority's budget and revenues. While the situation was managed through negotiation and cost control efforts, similar adverse situations could again occur in the future. If this happens again, additional measures may need to be taken to secure the future of the regional integrated waste and recycling system.

To address this future concern, this Regional Plan includes a process, and includes specific trigger mechanisms, whereby a County Contingent Waste Assurance Ordinance could be enacted in Mifflin County and in Juniata County. A copy of this draft contingent flow control ordinance for each county to act on independently, or in collaboration, is included in Appendix T Enactment of a county waste flow control ordinance, with county wastes being directed to a publicly owned facility (i.e. the Authority's facility), has been determined to be constitutional under the 2007 U.S Supreme Court ruling United Haulers Assn., Inc. v. Oneida-Herkimer Solid Waste Management Auth., 550 U.S. 330 (2007), when the benefits of enacting flow control can be demonstrated. This Section 6.16 clearly outlines and demonstrates the benefits of securing an ongoing, viable and sustainable Authority Facility.

It should be clearly understood that legislative flow control would only be implemented if or when needed, and only when other currently available means for waste contracting, revenue security and cost controls have been exhausted and have been found to be ineffective to secure the ongoing viability of the Authority's Facility, operations and services. In fact, waste assurance ordinances may never need to be implemented in Mifflin and/ or Juniata Counties.

Specific circumstances that would trigger the Authority to request that each/and or both counties' Board(s) of County Commissioners enacts this contingent waste assurance ordinance include (this list may be modified by each county from time to time):

- The inability of the Authority to continue to negotiate sufficient large volume discount contracts with large waste haulers to secure future waste deliveries;
- A drop in total annual municipal waste tonnage deliveries to the Authority's Facility, below 36,000 tons per year, for two consecutive years;
- A year-end annual total budget shortfall (i.e. expenses exceed revenues), creating a net annual loss of Authority reserves or an increase in Authority borrowing in a calendar year;
- A drop in the Authority's available financial reserves below $0.5 million dollars.

Once any of these "triggers" occur, the Authority can report this occurrence to the Mifflin County and/or the Juniata County Board of Commissioners, requesting that the County's Contingent Waste Assurance Ordinance be enacted. Once each and/or both county's Board(s) of Commissioners has enacted this ordinance, the Authority's tipping fee structure options employed must be done in accordance with these new ordinances.

Since this contingent flow control implementation process is being vetted through the Substantial Plan Revision process for the Regional Plan, PADEP has confirmed that it can be implemented when needed, without the requirement for any further municipal waste plan update.

7.0 Processing/ Disposal Capacity Assurance

7.1 Introduction

Act 101 requires county municipal waste plans to provide for ten (10) years of disposal capacity for municipal wastes generated from within the county. This capacity is most-often provided through contracts between a county and processing/ disposal sites, such as landfills and waste-to-energy facilities. This chapter confirms disposal capacity needs, identifies the process to secure required capacity, and lists the physical location of the processing and disposal facilities that have been tentatively identified as Designated Facilities and that are eligible to receive the Region's municipal waste, subject to execution of Processing/ Disposal Capacity Agreements with Mifflin and Juniata Counties. Further, this chapter describes the process used to solicit and select the vendor that will provide hauling and disposal services to the MCSWA transfer station, from 2015 through 2024. Last, this chapter describes the process under which additional processing/ disposal facilities can be added to the Regional Plan as Designated Facilities once the Plan is finalized.

7.2 Securing Waste Disposal Capacity for Mifflin And Juniata Counties Through The Solicitation of Interest (SOI) Process

PADEP's Guidelines for the Development and Implementation of County Municipal Waste Management Plan Revisions state that a county plan (or here, the Regional Plan) must conduct a fair, open and competitive process to identify and secure capacity for the disposal of municipal waste generated by the study area. Mifflin and Juniata Counties have chosen to secure this disposal capacity in a joint Solicitation of Interest (SOI) process, to maximize efficiency and coordination of the solicitation effort under this Regional Plan. The SOI process employed by Mifflin and Juniata Counties meets Pennsylvania's requirements to employ a fair, open and competitive process to secure processing/ disposal capacity in the Regional Plan. In addition, the MCSWA solicited (via a Request for Proposals, or RFP) a new contractor for hauling/ disposal services in the fall of 2013 for municipal waste handled by the MCSWSA Transfer Station, beginning in 2015, with a five year initial contract and five year renewal option, as further described in Section 7.3 of this chapter.

7.2.1 The Solicitation of Interest (SOI) Process

Needs vs. Existing Capacity within the Region

As noted in Chapter 1, this two-County Region generated approximately 62,200 tons of "gross discards" of municipal waste in the year 2012 (Table 1-8). Approximately 44,500 tons of this municipal waste was disposed of in landfills (the "net discards," after recycling), and the remaining 17,700 tons (approx.) of materials was diverted from the wastestream and recycled in 2012. This waste-diversion-through-recycling equates to a Regional recycling rate of approximately 28 percent in 2012, which is less than Act 101's statewide goal of 35 percent recycling. It is projected that the Region's actual tons of materials recycled will increase over time through the expansion of recycling programs in the Region, especially in Juniata County. At the same time, the quantity of municipal waste generated by the Region is also expected to grow due to population growth. The net effect of these competing factors is that, while the tons of municipal waste generated and tons of materials recycled from the Region will both increase over time, the percent recycling rate (computed by dividing the recycled tons by total tons generated) is expected to remain relatively constant over the planning period (at approximately 28 percent, through year 2020 and steadily increasing to 35% by 2030).

Table 4-1 of Chapter 4 presents an estimate of the quantity of municipal waste that will require disposal from the Region, after recycling, through year 2024 and beyond.

Beginning in 2015, the formal start date for the Regional Plan's 10-year planning period, and through year 2024, it is projected that the Region will require disposal capacity for a total of approximately 477,300 tons of municipal waste discards (net discards, after recycling) generated by the 2-County Region (Table 4-1, Chapter 4).

The only previously active landfill in the two-County Region, the MCSWA Barner Landfill, closed in 2005. Since October of 2005, all municipal waste generated by Mifflin and Juniata Counties has been disposed of at sites outside of the 2-County Region. Therefore, disposal capacity assurance for municipal waste generated in the 2-County Region needs to be provided at out-of-Region

disposal sites. The MCSWA Transfer Station does, and will continue to, play a critical role in delivering waste to out-of-Region disposal sites, as further detailed in the next section of Chapter 7.

Solicitation of Interest for Processing/ Disposal Capacity

Mifflin and Juniata Counties have elected to secure municipal waste disposal capacity for the 2015-2024 planning period using the Solicitation of Interest (SOI) process. The SOI process ensures that the Region's disposal capacity needs can be met through year 2024. The two-County Regional SOI solicitation document is included in Appendix K. The SOI contains proposal instructions and information, a submittal form, a disposal facility questionnaire, and a draft Municipal Waste Processing Disposal Capacity Agreement.

The Solicitation of Interest (SOI) was issued by Barton & Loguidice, D.P.C. in November 2013 to solicit responses from interested parties to negotiate an agreement for providing processing and/or disposal capacity for municipal solid waste (MSW), including construction/demolition (C/D) waste, sewage sludge, other "special handling" municipal wastes generated in the Region. This SOI also contains a request for optional support for a Regional Integrated Waste and Recyclables Management Program (IWRMP) in the two-County Region, to help stabilize, expand and enhance current programs. This SOI process was conducted in accordance with PADEP requirements for a fair, open, and competitive solicitation.

The release of the SOI was advertised in the local Lewistown Sentinel newspaper, in the Pa. Bulletin, in the PA Recycler (PROP magazine), and in the SWANA e-newsletter publication. Notifications and advertisement of the release of the SOI were also mailed to approximately 29 municipal waste processing/ disposal sites in the area. The SOI solicited processing/ disposal capacity and optional IWRMP support for the two-County Region, over the formal ten (10) year planning period (2015 through 2024). The SOI was released on November 9, 2013, and Submittals were received from Respondents until December 12, 2013. Appendix K of this Plan also contains the SOI advertisement, the SOI document, and the direct advertisement mailing list.

Screening and Evaluations of SOI Submittals

The SOI contains minimum criteria under which submittals were reviewed in a "pass-fail" screening process, in which items such as minimum quantity and duration guarantees for disposal capacity assurance, completeness of Submittals, willingness to comply with other SOI requirements and other items were evaluated. Screening and evaluation criteria are listed in Section 9 of the SOI, Appendix K.

A list of all facilities that delivered Submittals in a timely manner in response to the SOI is presented in Table 1 in Appendix K. A total of eleven (11) disposal sites responded to the SOI. Table 1 reflects a completeness summary of the Submittals, and indicates compliance or deficiencies in the Submittals. Footnotes on Table 1 further clarify the details of individual Submittals.

Table 2 in Appendix K summarizes the ceiling (i.e. maximum) tipping fees that each Respondent commits to charge for disposal of various types of waste from Mifflin and Juniata Counties from 2015 through 2024. These ceiling tip fees do not necessarily reflect the rates that will actually be charged at the facility, but rather list the maximum fees that could be charged by contract each year of the agreement period. These ceiling rates offer some level of stability for area waste haulers that rely on these sites for direct disposal of municipal wastes.

SOI Submittal Findings and Recommendations

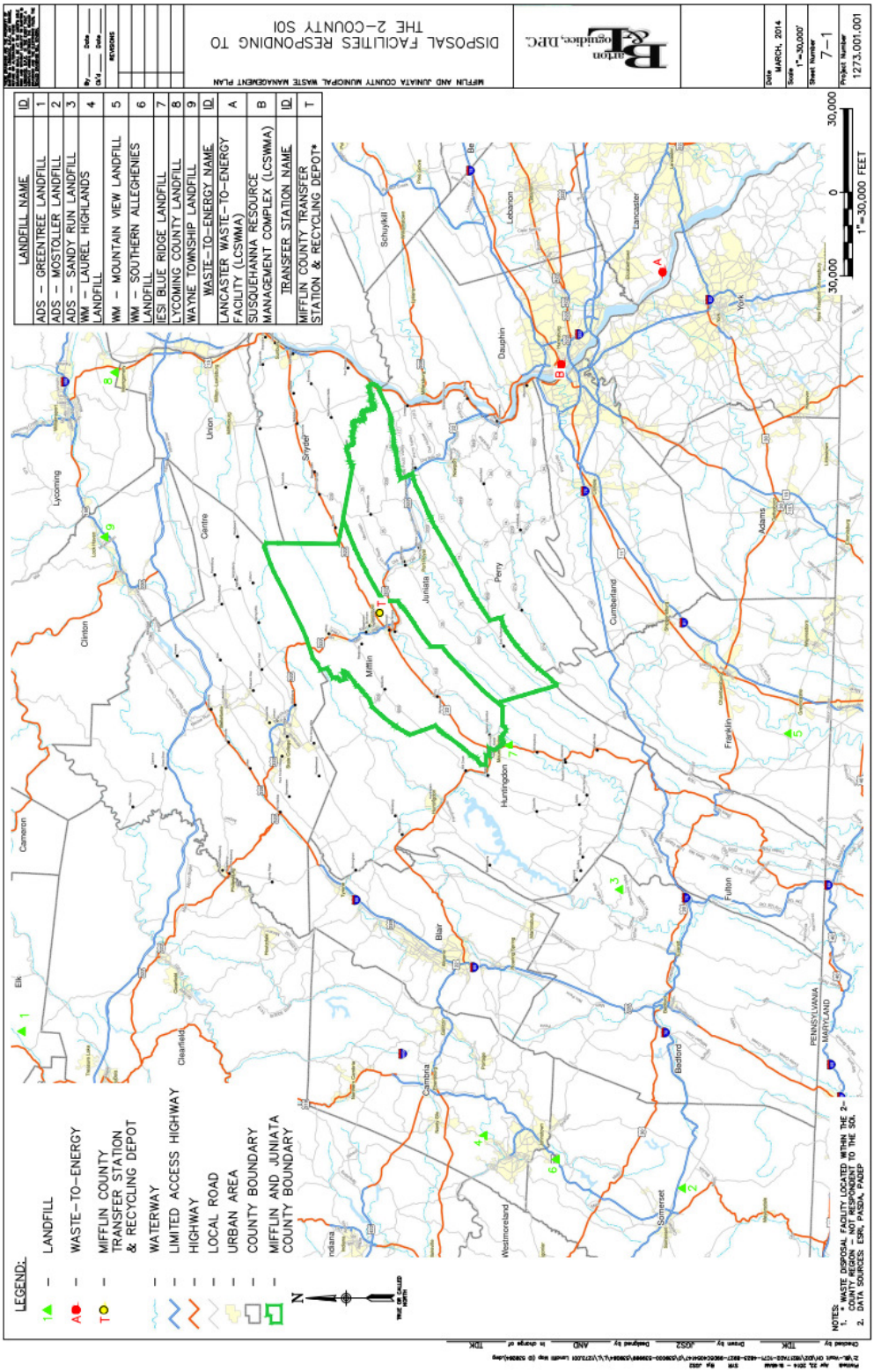
Table 7-1 presents a summary of the municipal waste disposal capacity commitments by facilities that have been tentatively identified as Designated Facilities in the Regional Plan, pending execution of Disposal Capacity Agreements; this contract execution process is underway. As Table 7-1 shows, the Designated Facilities have committed a total of 4,210,000 tons of disposal capacity assurance to the Region from 2015 through 2024, compared to an identified Regional need of 477,300 tons of disposal capacity (a commitment of more than nine times the need), confirming that the regional need has been met. It is noted that two responding facilities may reach their respective closure dates prior to 2024. Table 7-1 shows, that the remaining facilities have committed a sufficient capacity to handle the annual waste from the 2-County Region, even if these two early-closure facilities were to no longer accept Mifflin and Juniata

County waste in the last few years of the contract. The tentatively Designated Facilities in this Regional Plan are also presented graphically in Figure 7-1.

Table 7-1
Regionally Designated Disposal Sites, Waste Disposal Capacity Available To Mifflin and Juniata Counties, 2015-2024

Disposal Site	Available Cap. Per Day Tons	Available Cap. Per Year Tons	Estimated Final Closure Date	Total Avail. Cap. Over 10-Year Planning Period Tons
IESI Blue Ridge Landfill	137	37,000	2019	370,000
Advanced Disposal Services, Greentree Landfill, LLC	140	36,000	2044	360,000
Advanced Disposal Services, WSI Sandy Run Landfill	140	36,000	>2025	360,000
Mostoller Landfill, Inc.	140	36,000	>2032	360,000
WM – Mountain View Reclamation	200	52,000	?	520,000
Laurel Highlands Landfill, Inc.	200	52,000	2115	520,000
Southern Alleghenies Landfill, Inc.	200	52,000	2082	520,000
Lycoming County Resource Management Services	137	37,000	2022	370,000
Clinton County Solid Waste Authority	200	73,000	2038	730,000
Lancaster County Solid Waste Authority – Lancaster WTE	27	5,000	N/A	50,000
Lancaster County Solid Waste Authority – Susquehanna RMC	27	5,000	N/A	50,000
MSW Processing/ Disposal Capacity Commitments, Sub-Total (Tons) for 2-County Region				4,210,000
Versus Two-County Projected Total MSW Disposal Capacity Need, 2015-2024, after Recycling, from Table 4-1 of Chapter 4 of 477,300 tons over ten (10) years				
Minimum Regional Processing/ Disposal Capacity Commitment Secured?: Yes				

Figure 7-1
Designated Disposal Sites from SOI Process



7.3 MCSWA Hauling/ Disposal Contract, Request For Proposals (RFP)

The Mifflin County Solid Waste Authority has an existing hauling and disposal contract for wastes loaded onto transfer trailers at its Transfer Station in Derry Township. Most municipal wastes that are generated in Mifflin and Juniata Counties are brought to the MCSWA Transfer Station and are disposed of at the Laurel Highlands Landfill in Cambria County via this contract. MCSWA serves several hundred active waste hauler accounts at its Transfer Station, including two large volume hauler discount contracts that cover significant tonnages delivered to MCSWA. The initial transfer station hauling/ disposal contract, solicited through a competitive RFP process, was awarded to Waste Management Inc. (WM), and that contract runs through December 31, 2014. The WM contract provides disposal services for all municipal and approved residual wastes from the two counties that are processed by the MCSWA Transfer Station throughout the transitional planning period of 2013-2014.

MCSWA rebid this hauling/ disposal contract through a fair, open and competitive RFP process in November 2013, with proposals submitted to the MCSWA on December 12, 2013. These proposals are under a review and award process at this time; it is expected that a new contract will be executed with a successful proposer by May/June of 2014. This contract will have an effective contract start date of January 2015 and an effective term (with renewal) of ten (10) years, and therefore will cover the entire ten (10) year planning period of 2015 through 2024. The MCSWA's RFP that was released for this haul/ disposal solicitation is contained in Appendix L.

This RFP specifically advertised, at a minimum, the hauling and disposal from the MCSWA Transfer Station of all municipal wastes generated by Mifflin and Juniata Counties. Further, the contract allows the continuation of services through the large volume hauler discount contracts that MCSWA has entered (and for that matter, to all waste haulers) as a means to secure waste deliveries and provide cost-effective and sustainable services to its customers. The new haul/ disposal bid contract will have provisions that will allow it to continue to serve MCSWA under a contingent flow control basis, should it be deemed necessary to implement legislative flow control in the Region to provide necessary waste assurance and sustainability to MCSWA, if these cannot be provided through contractual means. In addition, the new contract will allow MCSWA the flexibility (if it should so elect to do so in the

future) to divert through recycling, composting, anaerobic digestion or other means, tonnages from disposal at the Transfer Station, and to enter arrangements for wastes from other counties or haulers to be handled as it determines is in the best interest of MCSWA and the Region.

The successful RFP proposer under the new MCSWA haul/ disposal contract must also be a SOI-Designated Facility in the Regional Plan, and if not initially, must undergo the process to be added as a Designated Facility to the Plan, as further detailed in Section 7.4 of this chapter. It is noted that all RFP Respondents also responded to the SOI.

7.4 Procedure to Add Facilities to the Plan as Designated Facilities

There are other municipal waste processing/ disposal facilities (that did not respond to the SOI) that are permitted for municipal waste disposal that have the potential for serving at least some needs of the Region (beyond those needs that are served through the MCSWA RFP and the haul/disposal contract). These facilities have the option of being identified as Designated Facilities in this Regional Plan in the future if they meet the conditions stated in the SOI document included in Appendix K. This document may be used to qualify additional processing/ disposal facilities in the Regional Plan.

If a licensed hauler, municipality, business or a disposal facility desires to have a facility added to the Plan for processing or disposing of Regional municipal waste, other than those currently under Agreement with the Region and designated in this Plan, the procedure described below must be followed to obtain authorization to be added to the Plan. The Region must be certain that any facility used for the deposition of the Region's waste minimizes the Region's risks by being in full compliance with state and federal rules and regulations and by meeting all requirements of the SOI. The following procedure will enable the Region to be reasonably assured that Regionally generated waste is being properly managed.

The procedure is as follows:

1. First, a licensed hauler, municipality, business, or disposal facility must petition the Region's designated representative using the one page form shown in Figure 7-2 to have a facility considered for adding to this Plan.

2. After receiving the petition, the Region's designated representative will notify Mifflin and Juniata Counties of the request, and will forward a copy of the SOI Package to the facility being requested for inclusion in the Plan.

3. Upon receipt of the completed Submittal (in response to the SOI) from the facility in question, the Region will review and screen/ evaluate the Submittal and will make recommendations as to the acceptability of the Submittal. Requests for clarifications and requests for additional information may occur by the Region.

4. If all information is in order and the facility's Submittal is determined to meet the qualification criteria, the Region will negotiate with the Respondent, with the goal of finalizing terms of a draft Disposal Capacity Agreement for the facility.

5. At a convenient and practical time thereafter, the Region will then follow the non-substantial plan revision process to add the facility to the Regional Plan, which will include advertising that a minor plan revision to add capacity is being completed and if any other interested facility(ies) want to be added into the plan that this is a convenient time to make a submission to the Region. It shall be the responsibility of the facility being added to the Plan to finance the cost of this non-substantial plan revision process. If the disposal facility in question refuses to finance this cost, the Region may delay/refuse to include this new facility in the Plan until it can combine this activity with a plan revision undertaken for other reasons. A SWAC meeting to evaluate and discuss the addition of new Designated Facilities to the Plan is optional.

6. Once the plan revision is completed, adopted by the Region and approved by PADEP, the Disposal Capacity Agreement between the Respondent and the Region will be executed.

Figure 7-2
Regional Processing/Disposal Facility
Petition Form to Add a Facility to the Regional Plan

Purpose of Petitioning Process – Mifflin and Juniata Counties have, through Municipal Waste Disposal Capacity Agreements, secured a sufficient amount of disposal capacity for all municipal waste generated from Regional sources. However, business opportunities may arise for area waste haulers, businesses, municipalities or the Counties with processing/disposal facilities other than those designated in the Regional Plan that attract the interest of these parties to use another facility. Therefore, the Regional Plan has defined a process by which additional processing/ disposal facilities can be added to the Regional Plan. This form is used to notify the Region's designated representative of a party's interest in using another processing or disposal facility, and provides the Region with the necessary information to contact a facility representative to begin the process to screen and potentially qualify the facility as a Designated Facility in the Plan. To request consideration of a processing/ disposal facility to be added to the Mifflin-Juniata Regional Plan, please complete this form and forward to the:

Mifflin & Juniata Counties
c/o Mifflin County Solid Waste Authority
P.O. Box 390
87 Landfill Road
Lewistown, PA 17044
Attention: Lisa Smith, MCSWA General Manager, Designated Regional Representative

Petitioning Party's Name: _____
Address: _____
_____

Phone Number: _____

Name of Requested Facility: _____
Facility Contact Person: _____
Facility Address: _____
_____

Phone Number: _____
Fax Number: _____
E-Mail Address: _____

Explanation for requesting additional facility:

_____
_____
_____
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_____
_____

(Attach Additional Sheets if Necessary)

8.0 Implementation

8.1 Implementing Entity

The Regional planning options and initiatives have been designed to provide Mifflin and Juniata Counties the flexibility to assure the successful implementation of this Plan. This chapter identifies the agencies responsible for the implementation of the Plan and the essential tasks required to implement the Plan. Since this is a Regional Plan, there are plan implementation duties that fall to each of the two counties, plus joint responsibilities This chapter lists the proposed planning initiatives for the Region, proposed methods of funding these initiatives, and a proposed schedule for implementation. This chapter also discusses the public participation process used in developing the Plan.

8.1.1 Mifflin County Plan Implementation Entity

Primary - Mifflin County Solid Waste Authority as Implementing Agency for Mifflin Components of the Regional Plan

Since February 24, 2004 (the date the first delegation of Act 101 powers was signed between the MCSWA and the County), the MCSWA has been the implementing agency for the Mifflin County Municipal Waste Management Plan. Therefore, it is recommended that the MCSWA remain the implementing agency for the Mifflin County components of the Regional Plan, through the County's delegation of implementation and enforcement powers under Act 101. The current delegation agreement between Mifflin County and the Authority is still acceptable to implement Mifflin County's duties under the Regional Plan; a copy of the 2004 Delegation Agreement is provided in Appendix A. Therefore, the MCSWA remains the agency responsible for implementing Mifflin's County's components of the Regional Plan, and for conducting future municipal waste planning and relevant Plan Revision activities for Mifflin County. As the acting implementing agency, the MCSWA will have all the powers provided for under the Municipality Authorities Act of 1945, as amended, including the powers to take any and all actions and to exercise all such powers as are necessary or appropriate to design, develop, finance, construct, own, operate and manage a safe, reliable, efficient and effective solid waste management system.

Alternate - Mifflin County as Implementing Agency for Mifflin Components of the Regional Plan (NOTE – THIS ALTERNATE NOT SELECTED)

If a Delegation Agreement is not executed between Mifflin County and the MCSWA, the Mifflin County Board of Commissioners would become the agency responsible for implementing Mifflin County's components of the Regional Plan. This scenario would require that Mifflin County provide for the staffing needs and resources for conducting all necessary day-to-day activities associated with implementation of the Plan. MCSWA also currently provides post-closure care services on behalf of Mifflin County (Mifflin County has a Letter of Credit to guarantee post-closure care for the closed landfill), to keep costs down and avoid consultant costs for post-closure assistance. If Mifflin County becomes the implementing entity for the Mifflin portion of the Regional Plan, then Mifflin County would also assume the responsibilities for managing (and for financing the day-to-day expenses of) the post-closure care duties of the closed Barner landfill.

8.1.2 Juniata County Plan Implementation Entity

Primary - Juniata County Conservation District as delegated Solid Waste/ Recycling Coordinator responsible for implementing recycling-related duties of Juniata County; Juniata County Board of Commissioners as signatory to SOI agreements and planning-related duties, with Juniata County Planning Department staff support, for Juniata Components of the Regional Plan

Historically, the Juniata County Board of Commissioners has been responsible for the implementation of the Juniata County Municipal Waste Management Plan. The Juniata County Board of Commissioners (BOC) employs a Planning Director. As of January 1, 2014, Juniata County delegated its Recycling Coordinator and recycling-related duties to the staff of the Juniata County Conservation District (JCCD). A copy of this delegation agreement is presented in Appendix A. Therefore, it is recommended that the JCCD Solid Waste/ Recycling Coordinator serve as the primary implementing agent for Juniata County components of the Regional Plan that are recycling and implementation-related, on behalf of the Juniata County BOC. The BOC will retain control over as signatory to contracts and for the planning responsibilities of the County Planning Department.

Alternate/ Contingent - Mifflin County Solid Waste Authority, as Implementing Agency for Juniata Components of the Regional Plan (NOTE – THIS ALTERNATE NOT SELECTED)

Juniata County and MCSWA may wish to discuss prospects for the MCSWA playing a more active role in the implementation of Juniata County's components of the Regional Plan (in lieu of, or in addition to, the Juniata County BOC or the Juniata County Solid Waste/ Recycling Coordinator as its agent), if appropriate administrative and financial arrangements can be agreed to on this alternate. If this is considered in the future, discussions and mutual agreement should take place to confirm the details of such an expansion of MCSWA's roles.

Also, should it be determined in the future that conditions have occurred that require the implementation of legislative flow control in the Regional Plan, and should Juniata County wish to implement flow control to MCSWA's facilities, it may be advantageous for MCSWA to take a more active role in assisting with the implementation of Juniata's components of the Regional Plan. This may be implemented in the form of a delegation agreement from Juniata County to MCSWA, some involvement by Juniata County representatives in MCSWA, or other measures determined to be advantageous at that time. Therefore, MCSWA is also listed here as an alternate implementing entity for Juniata County, should the need arise for MCSWA to take a larger role related to implementing contingency flow control on a Regional basis.

8.2 Essential Regional Plan Implementation Tasks

Regardless of the implementing agencies/ entities for the Plan, Mifflin and Juniata Counties should continue their commitments to help provide and/ or ensure a safe, reliable, efficient and effective solid waste management system for the Region. The list of essential planning and implementation duties for the Regional Plan fall into one of three categories: Mifflin County duties, Juniata County duties, and jointly shared duties.

8.2.1 Mifflin County's Regional Plan Implementation Duties

The General Manager of the MCSWA, who also serves as County Solid Waste/ Recycling Coordinator for Mifflin County, will be responsible for overseeing the following, on behalf of Mifflin County and the MCSWA:

- Operation of the MCSWA Transfer Station and Recycling Depot, along with its publicly supported recyclables drop-off sites and operations;
- Administrative support and advice to Juniata County's implementing entity for the Regional Plan, especially as it relates to expansion of recycling and integrated waste programs by Juniata County, in Juniata County;
- Renewed solicitation for competitive hauling/ disposal contracts for municipal wastes from the MCSWA Transfer Station, with Mifflin and Juniata County wastes clearly listed in the RFP for hauling/ disposal services;
- Continuation/ renegotiation of contracts for large volume hauler discount contracts to assure waste deliveries to the MCSWA Transfer Station, for all haulers that meet minimum contractual and delivery requirements;
- Involvement in the management and refinement of a list of conditions and "trigger mechanisms" based on this Regional Plan that would indicate that the large volume hauler contracts and other provisions of MCSWA's contracts and operations no longer assure that it can remain a viable and sustainable operation, unless further flow control provisions are enacted. Under the occurrence of such trigger mechanisms, MCSWA and Juniata County will determine the need for the implementation of Contingent Flow Control Provisions in Mifflin and Juniata Counties, respectively (See Section 6.16 of Chapter 6).
- Development, implementation and coordination of a public education program regarding waste minimization measures that can be adopted by residents and businesses;
- Development, implementation and coordination of waste reduction efforts including recycling, composting and re-use;
- Inspection and enforcement of the Mifflin County-relevant Regional Plan components, including collection, storage, processing, and disposal

facilities and contracts; special consideration should be given to outreach and other measures to enforce County and local ordinances that are not now being enforced, and how to encourage compliance with any new requirements and recommendations of the Regional Plan;

- Assistance to municipalities in adopting and enforcing ordinances and contracts pertaining to solid waste management and recycling;
- Assistance to Mifflin County and its municipalities in complying with regulations pertaining to solid waste management;
- Assistance to the PADEP, Mifflin County and the municipalities in reviewing permit applications for collection, storage, transfer, processing and disposal facilities in Mifflin County;
- Assistance to Mifflin County in applying for and in administering PADEP and other funds to plan for and implement integrated waste management and recycling programs, and;
- Other Mifflin County duties from time to time in the implementation of the Regional Plan.

8.2.2 Juniata County's Regional Plan Implementation Duties

The Juniata County Solid Waste/ Recycling Coordinator (RC), and/ or the Juniata County Board of Commissioners (BOC) will be responsible for the following, on behalf of Juniata County:

- RC - Administrative coordination with Mifflin County's implementing entity for the Regional Plan, especially as it relates to expansion of recycling and integrated waste programs by Juniata County, in Juniata County;
- BOC – involvement in MCSWA's management and refinement of a list of conditions and "trigger mechanisms" that would indicate that MCSWA can no longer assure that it can remain a viable and sustainable operation serving the Region, unless further flow control provisions are enacted. Under the occurrence of such trigger mechanisms, Juniata County would determine its support for the implementation of Contingent Flow Control Provisions in Juniata County, and if support is confirmed, would enact provisions in Juniata County to do so.

- RC - Development, implementation and coordination of a public education program regarding waste minimization measures that can be adopted by residents and businesses;
- RC - Development, implementation and coordination of waste reduction efforts including recycling, composting and re-use;
- RC - Inspection and enforcement of the Juniata County-relevant Regional Plan components, including collection, storage, processing, and disposal facilities and contracts;
- RC - Assistance to municipalities in adopting and enforcing ordinances and contracts pertaining to solid waste management and recycling;
- RC - Assistance to Juniata County and its municipalities in complying with regulations pertaining to solid waste management;
- RC - Assistance to the PADEP, Juniata County and the municipalities in reviewing permit applications for collection, storage, transfer, processing and disposal facilities in Juniata County;
- RC - Assistance to Juniata County in applying for and in administering PADEP and other funds to plan for and implement integrated waste management and recycling programs, and;
- RC and BOC - Other Juniata County duties from time to time in the implementation of the Regional Plan.

8.2.3 Jointly Shared Regional Plan Implementation Duties

At a minimum, the selected implementing agencies/ entities should work together to accomplish the following shared tasks as part of the overall Regional Plan implementation for Mifflin and Juniata Counties:

- Provide for adequate disposal capacity for the 10-year planning period (through year 2024) for Region-generated municipal solid waste;
- Execute Municipal Waste Disposal Capacity Agreements with tentatively qualified Designated Facilities for municipal waste disposal services, and provide the administration of these agreements;

- Confirm the inclusion or exclusion of Integrated Waste and Recycling Program Support Services in the Disposal Capacity Agreements, and include them in the agreements accordingly;
- Provide for qualified disposal facilities to be added to the Regional Plan in the future;
- Continue to promote recycling activities, including the monitoring, documenting, and reporting of recycling activities to track the Region, and each County's progress, in meeting and exceeding Pennsylvania's 35 percent recycling goal;
- Continue to work together to support efforts to maintain and improve, as necessary, the Region's existing recycling, municipal waste collection and waste disposal services. These services should be initiated to meet changing Regional needs and to provide a safe, reliable, effective and efficient solid waste management system.
- Work cooperatively to monitor the ongoing status of the MCSWA operations as a viable and sustainable operation serving the waste management and recycling needs of the Region, and take necessary steps as necessary to help maintain that condition.

8.3 Planning Initiatives

The selected implementing agencies/ entities may elect to pursue the following planning initiatives, as identified during the Regional Plan preparation process:

- Recycling opportunities may be expanded to include, but not be limited to, additional drop-off recycling opportunities within the Counties, and the development of new/ expansion of existing special handling waste collections (e.g. bulky item collections). There is s strong interest, especially in Juniata County, in increasing and expanding current recycling opportunities.
- Evaluate the feasibility of developing a household hazardous waste program. This program may include an annual drop-off event for County or two-county Region residents, at which time difficult items such as pesticides, paints, and other household hazardous wastes could be collected for proper disposal. This type of program is common in many counties in Pennsylvania.

- Improve the public education component of recycling programs and solid waste management programs/services through various forms of media (e.g. newsletters, brochures, radio, news articles, hyperlinks between and among the two county websites and the MCSWA website, etc.).
- Reduce illegal dumping by increasing public awareness of existing disposal alternatives. This could be achieved by working with the Mifflin County PA CleanWays Chapters, by providing free disposal space in area landfills through the Solicitation of Interest (SOI) process for securing disposal capacity, and by expanding existing and/ or developing new waste disposal service alternatives. **Any public interest group or organization wishing utilize the free "dump cleanup" disposal capacity offered by multiple SOI respondents should contact their County Recycling Coordinator to coordinate the use of this service.**
- Consider the feasibility of, and ways to institute, County-wide mandatory garbage collection and recyclables anti-burning ordinances, and/ or identify ways to implement and enforce current ordinances (Mifflin County has an existing mandatory collection ordinance and a County mandate for anti-burning of recyclables - that requires municipal implementation - on the books). Mandating proper collection of wastes and prohibiting the burning of recyclables should lessen the environmental impacts of illegal dumping and backyard burning of wastes. An outreach program is suggested to help support and encourage local municipalities of the need and benefits of implementing local ordinances in conformance with County-wide mandatory collection ordinances.
- Support schools and other public recycling and education programs, and help school districts implement consistent recycling programs as part of their normal waste management service contracts. Further, support local public waste management and recycling operations by directing (through contract) municipal wastes and recyclables to be delivered to the MCSWA Transfer Station and Recycling Depot.
- Support commercial and other business-related recycling and educational programs, and assist in the establishment of economical recycling programs as part of their waste management system. .
- Support the continuance of environmentally safe sewage sludge management and disposal options in the Region. Future sludge management planning

activities may include the further consideration and evaluation of a regional sewage sludge processing and disposal facility, possibly developed under a public-private partnership arrangement.

- Consider the further investigation of an aerobic composting and/ or an anaerobic digestion processing facility to process source-segregated organics from the municipal wastestream, possibly under a public-private partnership, and possibly co-located (at least for the aerobic composting option) at the MCSWA Transfer Station site. This type of project could potentially divert between 10% and 30% of the municipal wastestream, representing the processible food waste and organics, from landfill disposal.
- Consider ways to encourage municipal and/ or multi-municipal bidding for curbside recycling and waste collection service, including the possible use of existing councils of government (COGs) to assist with the implementation of the selected planning initiatives.
- Review the Regional Plan periodically to determine if planned implementation programs have been addressed. This review could lead to future implementation initiatives and/ or Regional Plan updates/revisions.

8.4 Proposed Method of funding the System

8.4.1 Mifflin County

MCSWA Transfer Station and Recycling Depot

Sources of funds for MCSWA's capital cost amortization and operational costs come from three sources: 1) tip fees at the Transfer Station (the current tip fee structure at MCSWA's Transfer Station is presented in Appendix J); 2) revenues from the sale of recyclables and services related to recycling, and; 3) PADEP Section 901 (planning), 902 (implementation), 903 (recycling coordinator) and 904 (recycling performance grant) funds.

MCSWA must fund its planning initiatives, as well as its day-to-day activities, through these three funding sources. Any new planning initiatives considered by Mifflin County must be either self-sustaining, financially, or be within MCSWA's operating budget, to be considered feasible. This will be a critical component of

assessing the feasibility of any planning initiatives and duties. The SOI process solicited support for expanding and enhancing integrated waste and recycling programs in the Region; Respondents' submittals on this topic should be further evaluated by the Joint SWAC, and during the implementation phase of the Regional Plan.

Reduction of program costs is a way to stretch system revenues further. MCSWA has taken many cost-cutting measures in its operations over the past several years, including staff cutbacks, contracts renegotiation, and administrative cost-control measures. When the transfer station haul/ disposal contract is rebid in the next year or two, it is possible that more competitive bids may be received, although MCSWA has managed the current contract to minimize price escalations over the past eight years.

Cost centers at MCSWA (areas that accrue costs to the MCSWA operations) include: 1) waste processing and transfer services, 2) recycling drop-off and processing services and 3) Barner landfill post-closure care services. Current revenues from waste management and recycling activities, which are revenue-generating, are sufficient to cover the current costs of MCSWA's waste transfer and recycling programs, but it is difficult to subsidize state-mandated post-closure care costs of the closed Barner Landfill through Transfer Station tip fees and MCSWA recyclables revenues.

Barner Landfill Post-Closure Care Funding

The Mifflin County Barner Landfill closed in October of 2005. Post-closure care for the Barner Landfill started in 2005, and will be will be required for a minimum of 30 years, as mandated by PADEP. The current annual post-closure cost average between $60,000 and $80,000. An alternate, long-term source of funding of these costs needs to be secured, or transitioned over time from the MCSWA, to allow MCSWA to continue to offer attractive tipping fees and become more financially sustainable. If MCSWA cannot remain a sustainable waste management business entity in the Region, the responsibility for post-closure care of the Barner Landfill will fall to the Mifflin County Board of Commissioners (BOC). Talks should be undertaken with the Mifflin County BOC to investigate alternate funding sources to support MCSWA's continued management of post-

closure care activities for this closed landfill that served the needs of Mifflin County residents and businesses for nearly 20 years.

8.4.2 Juniata County

Funding of Planning Initiatives

Juniata County has the benefit of access to MCSWA's established recycling and integrated waste management programs, as Juniata works to extend and enhance program offerings in Juniata County. Juniata's access to these established outlets and vendors is of benefit to Juniata County. Juniata County can utilize this access and support network to grow recycling and integrated waste management opportunities in Juniata County through MCSWA's established reliable outlets and successful programs.

Juniata County's funding sources are more limited than MCSWA's, as Juniata County does not have any waste management or recycling operations of its own. The County currently relies on the private sector, supplemented by services provided in nearby Mifflin County, to meet its waste management and recycling needs. Juniata County's funding sources that support the activities of the County Solid Waste/ Recycling coordinator include Pa Act 101 grant funds (Sections 902, 903 and 904 funds, and potentially, Section 902 implementation funds), as well as County General Funds to support staff.

Any new planning initiatives considered by Juniata County must be either self-sustaining, financially, or must have an identified funding source to be considered feasible. This will be a critical component of assessing the feasibility of any planning initiatives and duties for Juniata County. MCSWA is providing administrative support and guidance (efforts that do not cost money to MCSWA) to Juniata County, as Juniata County works to expand its recycling programs and opportunities. This will be a slow and gradual process, and must be sustained by user fees and/ or Juniata County BOC financial support. The SOI process solicited support for expanding and enhancing integrated waste and recycling programs in the Region, and the responses should be further reviewed.

8.5 Public Function, Orderly Extension and Non-interference

8.5.1 Public Function

Mifflin County has determined that it is in the public interest for municipal waste management to be a public function. Currently the MCSWA owns and operates the Mifflin County Transfer Station and Recycling Depot. The facility is currently operated as a public facility.

Juniata County proposes that municipal waste processing and disposal continue to be primarily a function provided by the private sector, with public support for the MCSWA Regional Transfer Station and Recycling Depot. Juniata County plans to take a continued and possibly increased public management role through contractual oversight and other measures, and to try to take steps to encourage the expansion of recycling opportunities in its County.

8.5.2 Orderly Extension

This Regional Plan has been updated to provide for the orderly extension of municipal waste management programs in a manner that is consistent with the needs of Mifflin and Juniata Counties. This Plan builds upon the Region's existing waste management system, as previously described in the 2003 Plans for each County. This Regional Plan has been developed in accordance with current federal, state and local laws and regulations.

8.5.3 Non-Interference with Facilities Developed Pursuant To Sub-County Plans

As required by Act 101, the Regional Plan will not affect the design, construction, operation, financing or contractual obligations of any municipal waste landfill or resource recovery facility located within the Region. There are no operational landfills currently located within the Region. There is currently one Transfer Station located within the Region. The Mifflin County Transfer Station, located in Derry Township is owned and operated by the MCSWA and is currently being utilized for the processing of the majority of Mifflin and Juniata County municipal waste and the support of many public drop-off sites in Mifflin County. Since no resource recovery facilities exist or are proposed within the Region, this Plan meets the non-interference requirements established by Act 101.

There are no sub-county plans in Mifflin or Juniata County, and therefore, there are no conflicting plans.

8.6 Implementing Documents

The institutional framework for implementing the Regional Plan is formed by the existing County Resolutions (Appendix Q), the Delegation Agreement between Mifflin County and MCSWA (Appendix A), the Delegation Agreement between Juniata County and the Juniata County Conservation District (Appendix A), the PADEP approval of the Regional Plan (Appendix Q), the Disposal Capacity Agreements between the two Counties and Designated Municipal Waste Disposal Capacity Agreements (Appendix K), the large volume hauler discount contracts with the MCSWA (Appendix L), the RFP for the MCSWA haul/ disposal contract (Appendix L), the draft Contingent Legislative Flow Control County Ordinances (Appendix T), and other plan implementation documents (Appendix R).

8.7 Implementation Schedule

Table 8-1 presents the proposed implementation schedule for the tasks/ functions related to the implementation of this Regional Plan. As explained in Section 6.1 of Chapter 6, this Regional Plan is being finalized to allow the synchronization of effective dates of multiple Regional Plan implementation contracts. Further, this Regional Plan contains a Contingent Flow Control component that will only be implemented if and when needed to help assure the sustainability of MCSWA as a viable waste management and recycling service entity in the Region. For this reason, the implementation of contingent flow control is not listed on Table 8-1, since the final determination of its need is not yet decided, and the date of its enactment is unknown at this time. However, if determined to be necessary in the future, the enactment of flow control should proceed expeditiously at that time.

Since this is a Regional Plan, and since the Plan includes a Contingent Flow Control component, PADEP designates this as a Substantial Plan Revision, with an extended Plan review, approval and ratification period (the majority of municipalities in EACH County, representing the majority of the populations in each county, must ratify this Regional Plan as part of the approval process). The Substantial Plan approval process is reflected in the proposed Plan implementation schedule presented in Table 8-1.

8.8 Public Participation

The Regional Plan development process was conducted in the appropriate public forum. Public notifications of the plan development process were sent to PADEP, notifications made to Regional municipalities, and the two Counties represented by members of the community and stakeholders in County Solid Waste Advisory Committees (SWAC) for Mifflin and Juniata Counties, respectively. The planning process has followed the requirement of 25 PA Code Chapter 272 of the PADEP Rules and Regulations.

In order to provide for public participation in the planning efforts related to this Plan, the Mifflin County Commissioners and the Juniata County Commissioners each appointed a County Solid Waste Advisory Committee (SWAC) in 2010. The SWAC assisted the Counties and the project consultants in preparing the Regional Plan by providing feedback and input from the citizenry, waste management organizations, selected interest groups, and municipal officials within the Region. SWAC members met initially in September 2010 and have met periodically throughout all stages of the Regional Plan preparation process. The SWAC committees met both individually and jointly at times. Appendix S contains documentation of the public participation information process, including meeting agendas, meeting notes, and handouts. The public participation process continues through the 90-day formal public review and comment period, as well as the 90-day municipal ratification period. SWAC meetings will be help periodically as needed through Regional Plan finalization and adoption.

Table 8-1
Mifflin and Juniata Counties
Municipal Waste Management System
Functions and Tentative Implementation Schedule (1)

TASK OR FUNCTION	PROPOSED COMPLETION DATES
1a. Regional Plan Finalization	
Pre-Final Draft Plan Chapters Posted on Project Website for Review	February 29, 2012
Joint MJ SWAC Meeting, Review/ Comment on Pre-Final Draft Plan	April 4, 2012
Final Revisions to Pre-Final Draft Plan and Appendices, Posting of Revised Pre-Final Plan on Project Website	May/June 2014
Incorporation of SOI Solicitation Results (see schedule Item No. 5), New Contracts Information in Draft Final Plan	May 2014
Mifflin & Juniata SWACs Review and Comment on Draft Final Plan, release for public comment	May/June 2014
90-Day Formal Public Comment Period on Revised Final Draft Regional Plan, 2 county public hearings	June-September 2014
Incorporate Public Comments, Finalize Regional Plan	September 2014
Mifflin & Juniata SWACs Recommend Final Plan Submission to BOC's for Approval	September 2014
1b. Regional Plan Adoption and Ratification	
Mifflin and Juniata Counties BOCs Review and Approval of Final Regional Plan (2 county actions)	September 2014
Distribution of Final Regional Plan for Municipality Review and Approval in Mifflin and Juniata Counties	October 2014
90-Day Municipal Ratification Period in 2 Counties, Tabulation of Results to Confirm "50/50" Results in Each County	October - December 2014
Review of Final Ratification Results in Each County, Submission of Final Approved Regional Plan to PADEP	Dec. 2014 – Jan. 2015
PADEP Approval of Final Regional Plan	January 2015
New Regional Plan Start Date	January 2015
Submission of Final Implementation Documents to PADEP (1-year implementation period)	January 2016

(1) Refer to Section 8.3 for additional Regional planning initiatives established as part of this Regional Plan process.

Table 8-1
Mifflin and Juniata Counties
Municipal Waste Management System
Functions and Tentative Implementation Schedule (Cont'd) (1)

TASK OR FUNCTION	PROPOSED COMPLETION DATES
2. Large Volume Discount Contracts (currently set to expire 12-31-2014)	
Open Renegotiations with Major Haulers for Contract Extensions through 12-31-2017	June 2014
Finalize Renegotiations, Second Round	September 2014
Execute New Agreement Extensions through 12-31-2017	November 2014
Open Next Round of Contract Renegotiations with Large Haulers	June 2017
Finalize Renegotiations, Next Round	September 2017
Execute New Agreements (three years or longer)	November 2017
Next Round large Hauler Volume Discount Agreements Start Date	January 1, 2018
Renegotiation Rounds Repeat as Necessary	
3. New MCSWA Transfer Station Hauling/ Disposal Contract (currently set to expire 12-31-2014)	
Finalization and Release of Draft Haul/ Disposal RFP	November 2013
Receipt of Submittals from RFP Respondents	December 2013
Screening/ Evaluation of Submittals, Clarifications/ Interviews with Respondents as Needed	Dec. 2013 – March 2014
Recommendations/ Selection of Finalist Haul/ Disposal Company (ies) for Negotiations	Dec. 2013 – Jan. 2014
Negotiations/ Selection of Preferred Haul/ Disposal Company	January - May 2014
Execution of Transfer Station Haul/Disposal Service Agreement	May - June 2014
Initiation of Services under New Agreement	January 1, 2015

(1) Refer to Section 8.3 for additional Regional planning initiatives established as part of this Regional Plan process.

Table 8-1
Mifflin and Juniata Counties
Municipal Waste Management System
Functions and Tentative Implementation Schedule (Cont'd) (1)

TASK OR FUNCTION	PROPOSED COMPLETION DATES
4. New Section 901 Grant Applications to Complete Tasks and Initiatives in Regional Plan	
Identify Funding Requirements to Finalize and Implement Regional Plan, Pursue Initiatives	May 2013
Pre-Application Meeting(s) with PADEP – Mifflin and Juniata Counties)	August 2013
Submit 901 Planning Grant Application(s) (Mifflin and Juniata Counties) - projected	September 2013
Receive Planning Grant Approval for Plan Finalization and Implementation - projected	January 2014
Execution of 901 Grant Contract(s) with PADEP - projected	April 2014
2-year 901 Grant(s) Utilization deadline - projected	April 2016
5. Solicitation of Interest (SOI) for "Menu Plan" Disposal Capacity	
Finalization and Release of SOI	November 2013
Receipt of Submittals from SOI Respondents	December 2013
Screening / Evaluation of Submittals, Clarifications/ Interviews with Respondents as Needed	Dec. 2013 – Jan. 2014
Recommendations/ Selection of Tentatively Designated Facilities	January 2014
Inclusion of Tentatively Designated Facilities in Pre-Final Plan	May/ June 2014
Execution of Disposal Capacity Agreements with Designated Facilities (during 1-year Regional Plan implementation period)	April – June 2014
Commencement of New Menu Plan Contracts	2015

(1) Refer to Section 8.3 for additional Regional planning initiatives established as part of this Regional Plan process.