

Section 1

INTRODUCTION

Introduction

In the last decade, Pennsylvania has made great strides in meeting the challenge of reducing the waste stream by promoting waste reduction, reuse and recycling. The Commonwealth met its original 25 percent recycling goal in 1996, two years ahead of schedule. When the Governor raised the goal to 35 percent in October 1998, the Commonwealth responded by once again meeting the goal early. The 35 percent recycling rate was met in 2001, one year ahead of schedule.

This recycling rate places Pennsylvania near the top of the nation in recycling efforts. Given an already high recycling rate, it is clear that finding additional recycling and diversion opportunities will be a great challenge. Increasing diversion even more will require a continued commitment to recycling. Certainly, the Commonwealth's efforts to educate and promote recycling will be important. However, to recover a higher percentage of materials that are currently targeted by recycling programs, and to identify and target potential additional materials, the Commonwealth would benefit greatly from better solid waste data.

Recognizing this need, in 2001 the Pennsylvania Department of Environmental Protection (DEP) retained R.W. Beck to perform a State-wide municipal solid waste (MSW) characterization study to better understand the composition of solid waste being disposed in Pennsylvania. The study was designed to estimate the composition of solid waste generated in the Commonwealth's six regions, as well as the State-wide aggregate composition. Understanding the quantity of recoverable materials remaining in the waste stream will enable the Commonwealth to develop programs to target the diversion or recovery of these materials.

Project Objectives

Successful completion of the Pennsylvania Waste Composition Study will provide extensive solid waste and recycling planning data for use across the Commonwealth. Specifically, the project will help the Commonwealth meet the following objectives:

- Evaluate and validate County-level waste generation and disposal estimates currently compiled by DEP on an annual basis;
- Determine the aggregate composition of the Commonwealth's disposed MSW stream, as well as the composition of MSW in each of its six regions,
- For each region and for the Commonwealth as a whole, differentiate waste composition from the residential and commercial generating sectors;

Section 1

- For each region and for the Commonwealth as a whole, differentiate waste composition from urban, suburban and rural areas;
- Provide additional insight into the composition of self-haul waste across the Commonwealth;
- Provide additional insight into the composition of roll-off box MSW across the Commonwealth; and
- Estimate the amount and composition of packaging versus non-packaging material in the Commonwealth's disposed waste stream to evaluate compliance with the Safe Packaging Act (Act 1994-112).

By meeting the objectives listed above, the 2001 Study will provide data for use by solid waste and recycling planners in DEP and each of the Commonwealth's 67 counties and over 2,500 incorporated municipalities. Solid waste planners will be better able to measure the effectiveness of current solid waste diversion programs, identify specific sub-sectors of the solid waste stream that may be targeted for future recycling or diversion programs, and, if necessary, design future solid waste management facilities to process the solid waste stream. Each of these outcomes is beneficial as the Commonwealth seeks additional solid waste diversion opportunities that may be needed to maintain and exceed a 35 percent recycling rate.

Recycling Composition Study

Note that one of the components of the State-wide Waste Composition Study project was a series of recycling composition sorts at material recovery facilities (MRFs) across the Commonwealth. The results of the recycled material composition studies are not included in this report. Full results of the MRF sorts will be prepared in a separate report.

Report Organization

Due to the extensive quantity of data that is reported, there are 11 sections to this report, plus appendices:

Section 2 – Background. This section summarizes Pennsylvania's key demographic and solid waste system data that was considered in developing a comprehensive sampling plan. Additionally, this section includes an evaluation of the county-level waste disposal data currently compiled by DEP, which forms the basis of the aggregate results in subsequent sections.

Section 3 – Methodology. This section describes the sampling plan, field data collection procedures, sorting procedures, and visual sampling procedures used in the 2001 Study.

Section 4 – Statewide MSW Composition. This section of the report presents the results for the Commonwealth as a whole (i.e., all regions aggregated). Composition results are broken down by material type, by solid waste generating sector, and by demographic area.

Section 5 – Packaging Analysis. Pennsylvania legislature has targeted the hazardous substances mercury, lead, cadmium, and hexavalent chromium to be eliminated from packaging and packaging components. This section presents an analysis of the proportion and composition of packaging in the disposed MSW stream.

Section 6 – Northeast Regional Solid Waste Composition and Disposal Quantities. This section of the report presents the results for the Northeast Region.

Section 7 – Northcentral Regional Solid Waste Composition and Disposal Quantities. This section of the report presents the results for the Northcentral Region.

Section 8 – Northwest Regional Solid Waste Composition and Disposal Quantities. This section of the report presents the results for the Northwest Region.

Section 9 – Southeast Regional Solid Waste Composition and Disposal Quantities. This section of the report presents the results for the Southeast Region.

Section 10 – Southcentral Regional Solid Waste Composition and Disposal Quantities. This section of the report presents the results for the Southcentral Region.

Section 11 – Southwest Regional Solid Waste Composition and Disposal Quantities. This section of the report presents the results for the Southwest Region.

Appendix A – Solid Waste Material Definitions. This appendix presents the material definitions used in this study.

Appendix B – Solid Waste Characterization Study Data Collection Form. Field data for the study were collected via a customized field data recording form. A sample of this form is included in this appendix.

Section 1

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Chester County Landfill (Narvon, Chester County)	
Commonwealth Environmental Systems Landfill (Hegins, Schuylkill County)	
Imperial Landfill (Imperial, Allegheny County)	
Keystone Sanitary Landfill (Dunmore, Lackawanna County)	
Lake View Landfill (Erie, Erie County)	
Lancaster County RRF (Lancaster, Lancaster County)	
Laurel Highlands Landfill (Vintondale, Cambria County)	
Montenay Energy Resources of Montgomery County (Conshohocken, Montgomery County)	
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