



# The Future of Recycling in Pennsylvania

## ACT 175 RECYCLING PROGRAM PLAN

*Mandated by Act 175 of 2002, which modifies Act 101 of 1988,  
“The Municipal Waste Planning, Recycling and Waste Reduction Act”*

July 2004

This document is a **working draft**. The Department will continue to modify it until a final draft is approved.



*Pennsylvania Department of Environmental Protection*

# *Act 175 Recycling Program Plan*

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# *Act 175 Recycling Program Plan*

## **BACKGROUND AND PURPOSE OF THE PLAN**

The Municipal Waste Planning, Recycling and Waste Reduction Act of 1988 (Act 101), marked a major change in Pennsylvania's approach to municipal waste. In addition to shifting planning responsibility to the county level, it established an ambitious program for recycling and waste reduction. Act 101 declares that waste reduction and recycling are preferable to the disposal or processing of municipal waste, and that removing certain materials from the municipal waste stream will decrease the flow of solid waste to municipal waste landfills, aid in the conservation and recovery of valuable natural resources, conserve energy in the manufacturing process, and increase the supply of reusable materials for the Commonwealth's industries. Act 101 also recognizes that it is in the public interest to require certain municipalities to implement recycling programs to return valuable materials to productive use, conserve energy and protect municipal waste disposal capacity.

Act 101 was originally drafted, has been amended, and has been administered with the objective of making continuous improvement over time in the rate and cost-effectiveness of recycling and waste reduction. Act 101 established a goal that, by 1997, at least 25 percent of the municipal waste and source-separated recyclable materials generated in the state be recycled. When that goal was met, the Commonwealth set a new recycling goal of 35 percent, to be met by 2002. The Act also established a goal of reducing the per-capita weight or volume of municipal waste generated to a level below that which existed in 1988. The Department is now considering a new recycling or waste reduction goal for the Commonwealth.

Finally, in Act 175 of 2002, Pennsylvania renews its commitment to moving forward in recycling. Act 175 amends Act 101, and provides as follows:

The Department shall develop a plan to assist municipalities in making recycling programs under this act financially self-sufficient and shall submit the proposed plan to the General Assembly within one year from the effective date of this section. The plan shall:

1. Include a market development program to be funded by the recycling fund.
2. Specifically address the extent to which municipal recycling programs under Act 101 can be sustained by restructuring the allocation of available recycling grants provided by Chapter 9.
3. Include recommendations to county recycling coordinators designed to encourage market development.

4. Identify the specific means, including legislative changes, that the Department intends to use to assist municipalities in making their recycling programs under this Act self-sufficient.

This plan is issued pursuant to this requirement. In addition, it includes funding recommendations to assist municipalities to meet and further the goals of both Act 101 and Act 175. This plan was developed in consultation with the Recycling Fund Advisory Committee and the State Solid Waste Plan Subcommittee of SWAC. Their ideas, input and sharing of recycling information will help the Department to maximize environmental and economic benefits of recycling and waste reduction. (See Appendix 1 for complete list of Committee recommendations)

Several different data sources are used in the plan. Data sources are cited when the data are used.

## **RECYCLING PROGRAM SELF-SUFFICIENCY**

There are at least three ways to understand what self-sufficiency means. First, the state program can be understood as self-sufficient if its economic, social, and environmental benefits exceed its costs. The state program's benefits do exceed its costs, though there is room for improvement. Second, a local program can be understood as self sufficient if its economic, social, and environmental benefits exceed its costs, whether or not all of these costs and benefits are reflected in the municipality's budget. At the local level, considerable benefits are experienced, even if they are not all reflected as direct recycling benefits on the municipality's balance sheet. Finally, and more narrowly, a local program can be understood as self-sufficient if its economic benefits to the municipality's budget are equal to or exceed its costs to the municipality's budget. If so, recycling does provide benefits to a municipality's budget.

Each of these definitions is important in looking at the overall effectiveness of Act 101, and since Act 175 amends Act 101, they need to be considered in evaluating and improving the self-sufficiency of the Act 101 program

## **STATEWIDE BENEFITS AND COSTS**

The statewide benefits—economic, social, and environmental—of the Act 101 program easily outweigh its costs. In state revenues alone, the Act 101 program contributes approximately five dollars in state taxes for each dollar expended from the Recycling Fund.<sup>1</sup>

What is essential to measuring recycling impacts is to be able to discern the amount of economic gain recycling creates in an industry or business. There is also the need to

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<sup>1</sup> Comparison of Recycling Fund expenditures to the REI Study.

measure growth of individual recycling industries and businesses. Use of the U.S. Recycling Economic Information (REI) Study (see Appendix 5), to determine progress in economic growth should be initiated by the Department and measured annually. The recycling data reported should be analyzed using the National Recycling Coalition Environmental Benefit Calculator annually and a comparison made to previous years. From these efforts, the progress and value of recycling to Pennsylvania can be shown and tracked. This information can then be provided to recycling businesses and industries for their use in growth planning.

The REI Study demonstrates that Pennsylvania has 3,247 recycling and reuse establishments employing 81,322 people with a total annual payroll of nearly \$2.9 billion. Total annual sales receipts for these industries are approximately \$18.4 billion. The total employment, payroll and sales numbers are higher than for any other state in the northeast, specifically in the glass, metals, paper, plastic and rubber industries. One-tenth of the recycling economy in the United States is the result of Pennsylvania's recycling industry.

The study also reports that 3.5 percent of Pennsylvania's jobs can be attributed to the recycling and reuse industry. In addition, Pennsylvania's recycling industries have an indirect effect on the economy, estimated at \$1.8 billion, and a direct impact on the tax base, contributing \$305 million. When these numbers are compared to the \$50 - \$60 million invested each year from the Recycling Fund, the economic return on this investment has a nearly 35-to-one indirect and five-to-one direct impact on the economy.

The local impacts of Act 101 recycling programs begin with costs for equipment to collect and process materials, or to obtain those services; educating residents on the benefits of recycling and instructing them in how to recycle; finding or developing markets for the collected materials; and personnel and other administrative costs of managing the program. Grant revenue used to support recycling programs then becomes a creator of tax revenues, employment in industry and government, and environmental benefits that reach far beyond the boundaries of Pennsylvania. The grant assistance to operate the recycling program is overridden by the resulting benefit.

Environmentally, there are four major areas of concern that are basic to any discussion of the benefits of recycling:

- Energy savings
- Reduction in greenhouse gas emissions
- Reduction in emissions of air and water pollutants
- Conservation of natural resources

The Environmental Benefits Calculator (see Appendix 6), developed by the National Recycling Coalition, provides a method to measure and demonstrate the positive environmental impact of recycling in a given area. When applied to the statewide recycling program in Pennsylvania, it produces the following results:

Table #1  
**RECYCLING AND ENVIRONMENTAL BENEFITS IN PENNSYLVANIA**  
**(Base Year 2001)**  
3/14/03

Benefit Factor	Quantification
Annual Equivalent Number of Cars off the Road	1,563,968
Annual Energy Savings in Household Equivalents	889,425
Tons of Air Emissions Reduced Due to Recycling	2,620,439
Tons of Waterborne Wastes Reduced Due to Recycling	9,251
Total Tons of Resources Saved*	912,490
Total Number of Trees Saved	7,474,680

\*does not include trees

*Source: National Recycling Coalition Recycling Environmental Benefits Calculator, January 2003*

Clearly, the economic, social, and environmental benefits of a statewide recycling program exceed its costs. Although a local program's costs often exceeds its income from sales of materials collected, the difference can be easily offset by savings from avoided disposal, fees collection and grants provided by the state.

An immeasurable benefit of the program has been and continues to be the fundamental environmental ethic it has built in Pennsylvanians. Recycling stands alone as the most recognizable environmental program in the Commonwealth and remains the foundation of environmental stewardship.

The challenge provided by Act 175 is to increase the cost-effectiveness of Act 101 programs by, among other things, increasing the economic, social, and environmental benefits of Act 101, and by improving the management of municipal Act 101 programs.

## **LOCAL BENEFITS AND COSTS**

As the discussion of statewide benefits and costs suggests, recycling activities create and support local economic activity that brings economic development projects and jobs to communities. These economic benefits vary from municipality to municipality, and there is little documentation of these economic benefits by individual municipality, but they are quite real. To some degree, moreover, these economic benefits are realized in the form of additional tax revenues for local governments. The 3,200 businesses that produce these statewide economic benefits are all operated in individual municipalities. These include businesses with long and important histories in Pennsylvania, including steel and glass manufacturing.

Similarly, the 81,000 jobs in Pennsylvania's recycling industries represent people who live, work, and raise families in individual municipalities. When these people buy or rent homes, purchase groceries, and engage in other economic activity, they generate secondary economic benefits that also increase the municipality's tax base. These are

also individuals who, but for Pennsylvania's commitment to the recycling industry, might not be living or working in Pennsylvania.

Finally, the statewide environmental benefits of recycling are also realized at the local level. These benefits vary from municipality to municipality, depending on the number of recycling facilities, the size of the recycling program, materials collected, and proximity to disposal or processing facilities.

Any statewide benefits realized from increasing the cost-effectiveness of Act 101 will be experienced in individual municipalities in the form of more jobs, more business, additional tax revenues, and environmental improvements.

## **MUNICIPAL BUDGETARY BENEFITS AND COSTS**

In principle, recycling should cost a municipality less than disposal or processing because recycling generates a marketable product and thus a source of revenue to the municipality, whereas disposal or processing does not. In addition, disposal and processing may generate additional financial liability from the operation of disposal and processing facilities. Incineration, of course, may generate revenue from production of electrical energy; however, it still results in the loss of potentially valuable resources.

Under Act 101, a \$2-per-ton charge on waste that is landfilled or incinerated is placed in the Recycling Fund, a special fund that is used primarily to support municipal waste recycling programs. Under the Act, the majority of the money in this fund must be used for such programs, mostly in the form of grants to municipalities. These grants, in turn, have supported and continue to support the infrastructure of the Commonwealth's recycling industry. They also make it financially possible for municipalities to provide the needed support for the Act 101 recycling programs. (See Appendix 2 for examples of local recycling programs.)

In its narrowest sense, budgetary self-sufficiency means that the budgetary benefits of the recycling program must equal or exceed the budgetary costs of operating the recycling program. Because these numbers likely exist on balance sheets, the temptation to apply this definition is understandable. However, the additional economic benefits described above—particularly the avoided costs of disposal and tax revenue from businesses, individuals, and secondary economic activities—would not be as evident on a municipality's balance sheet. Still, prudent fiscal management is important for both municipalities and for Act 101.

Thus, the economic challenge of Act 175 is to ensure that the Act 101 recycling grants to municipalities are targeted more effectively and strategically, recognize the changing nature of the municipal waste stream, support and expand local recycling programs, and facilitate the expansion of the Commonwealth's recycling industry.

In addition, waste reduction can play an important role in increasing the self-sufficiency of municipal recycling programs. Waste reduction is defined under Act 101 as the “design, manufacture or use of a product to minimize weight of municipal waste that requires processing or disposal.” Every ton of municipal waste that is not created is a ton of municipal waste that does not need to be disposed, incinerated, or even recycled—and is thus a ton for which the municipality is not financially responsible. Therefore, waste reduction has the potential to reduce a municipality’s disposal and recycling costs. As a result, waste reduction is a means of increasing the budgetary self-sufficiency of municipal recycling programs.

For all three types of self sufficiency, the challenge provided by Act 175 is to increase economic activity from recycling and waste reduction, develop and expand businesses, create jobs, and improve environmental quality simultaneously while improving the effectiveness with which moneys from the Recycling Fund are spent.

Properly funded municipal recycling programs are beneficial not only to the local municipality, but to the state as a whole. When a program’s costs exceed its income — proceeds from the sale of recyclable materials, fees and avoided disposal costs, where they can be realized — grants may be necessary to fund the difference. To achieve the mandates and desired outcomes of Act 101 as well as the goals of Act 175, a proper level of grant funding to municipalities is necessary now and into the foreseeable future.

## **STATE OF RECYCLING IN PENNSYLVANIA**

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

Act 101 listed eight basic materials to be recycled and set a goal of recycling 25% of the waste stream by 1997. In 1997, the Commonwealth raised that goal to 35% by 2002. The traditional way to measure that percentage has been to count tons of materials recycled and calculate recycling as a percentage of generation. In the past several years, the Department has been searching for a method whereby the progress of recycling may be measured in addition to counting tons. In order to define the contribution of recycling to a sustainable society, the Department has been considering development of a model that would indicate such things as public expectations, positive social trends, and other measures of growth of the recycling industry.

## **CURRENT STATUS OF RECYCLING IN PENNSYLVANIA**

In 2001 the Pennsylvania Department of Environmental Protection (DEP) retained R.W. Beck, Inc. to perform a statewide municipal solid waste (MSW) composition study (See Appendix 7) to better understand the composition of solid waste being disposed in Pennsylvania. The study was designed to estimate the composition of disposed MSW generated in the Commonwealth's six regions, as well as the statewide aggregate composition. Understanding the quantity of recoverable materials remaining in the municipal waste stream will enable the Commonwealth to develop programs to target the diversion or recovery of these materials. This study places Pennsylvania at the forefront of the nation in understanding and managing solid waste.

Successful completion of the Pennsylvania Municipal Waste Composition Study has provided extensive solid waste and recycling planning data for use across the Commonwealth. Specifically, the project helps the Commonwealth to meet the following objectives:

- Evaluate and validate county-level MSW 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 MSW composition from the residential and commercial generating sectors;
- For each region and for the Commonwealth as a whole, differentiate MSW 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 MSW stream.

By meeting the objectives listed above, the 2001 Study provides data for use by solid waste and recycling planners in DEP and each of the Commonwealth's 67 counties and nearly 2,600 incorporated municipalities. Solid waste planners are better able to measure the effectiveness of current solid waste diversion programs, identify specific sub-sectors of the municipal 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.

Results of the Pennsylvania Municipal Waste Composition Study were developed by combining individual sort results. According to the findings of these sorts, organics (food waste, yard waste, etc.) and paper make up the largest segments of the waste

stream, followed by inorganics, plastic, metals and glass. The breakdown of disposed MSW in Pennsylvania by major materials is shown in Table #2.

Table #2

**COMPOSITION OF MSW DISPOSED STATEWIDE**

<b>Material</b>	<b>Portion of MSW</b>
Organics	34.2%
Paper	33.3%
Inorganics	12.7%
Plastic	11.3%
Metals	5.4%

The study shows that corrugated cardboard, newspaper, and even high-grade office paper — materials targeted for recycling by Act 101 — were disposed in significant quantities. Other Act 101-specified materials, such as soda cans and milk containers, were disposed at lower rates. The findings suggest that the residential recycling programs that target containers and some paper grades have been successful in removing these materials from the waste stream. However, corrugated cardboard and high-grade paper, which are generated predominantly by the commercial sector, should be targeted for future diversion.

As of 2002, there were 945 municipalities with mandated curbside collection programs, and 635 with drop-off collection programs in Pennsylvania for a total of 1,580 municipalities involved in Pennsylvania’s nationally recognized recycling program.

In 2001, the residents of Pennsylvania recycled 3.9 million tons of materials, primarily paper, metals, and yard waste. This brings the number of tons reported recycled in Pennsylvania since 1989 — the first full year reported under Act 101 — to over 28 million. Because some of the recycling goes unreported each year, this is considered a conservative figure.

Over the four years that the Department conducted tipping fee surveys with significant response from landfills and resource recovery facilities, the average tipping fee rose from \$44 per ton to \$48 per ton. Using the \$48 figure, the residents of Pennsylvania avoided paying over \$187 million for disposal in 2001 alone. Using the \$44 figure for the years prior to 2001, the total avoided disposal cost accrued would be in excess of \$1 billion. These figures are tipping fees only and do not include the cost of transportation.

**RECYCLING EDUCATION**

Education is one of the most important components of a well-designed and well-run recycling program. Act 101, Section 901 (Planning Grants), 902 (Implementation Grants) and 903 (Recycling Coordinator Grants) grants may be used to fund educational activities. Act 101 requires that the state and local governments have recycling education programs designed to establish recycling activities and remind residents and businesses

of the recycling requirements each year. Act 101 requires communities of greater than 5000 population and 300 person-per square mile to have recycling programs. Mandated communities are required to educate residents on their programs at least twice a year. These educational efforts have run the gamut from simple advertisements to multi-media public service announcements and live performances conducted in schools and other public places. Several DEP educational efforts have won national and international awards, including one from the United Nations.

A successful educational program must be audience-specific, addressing the age, educational, cultural, linguistic, economic and geographical differences in the audiences. For instance, a recycling education program proposed to be instituted in a school will differ in its approach from one that is to be instituted in a municipality. While mandated municipalities are required to conduct an educational program twice per year, many do not. This leaves new residents confused about the recycling program, businesses believing they don't have to recycle and the municipality shortchanged in the amount of money they can receive from the Commonwealth in recycling performance grants.

## **RECYCLING EDUCATION STRATEGIES**

The Department must encourage these municipalities to conduct an educational program and these municipalities must abide by their obligations to do so by conducting a concerted educational program at least twice yearly. The educational program should include the progress of the municipality's recycling program, what the participation of residents, schools and businesses has achieved and how the municipality has supported recycling by buying products made of recycled material. Furthermore information should be provided about recycling materials preparation and where and when they are collected.

Nonmandated municipalities that have recycling programs should also conduct educational programs on a timely basis. This can mean additional revenues to the municipality through 904 grants. The municipality can get financial help from the Commonwealth through 902 grants for the development of its recycling education program.

The Commonwealth must also fulfill its obligations of educating elected and authority officials on an ongoing basis. There is a frequent turnover of these officials that makes periodic educational initiatives a must. Without an educated governing body, recycling will not happen unless the benefits and requirements are clearly understood.

In recent years, DEP has contracted with the Professional Recyclers of Pennsylvania (PROP) to provide a program of professional certification for recycling coordinators under the auspices of Penn State University's Continuing Education Program. In 2002 that program won an award for Outstanding Non-Credit Program Development from the University Continuing Education Association Mid-Atlantic Region 2002 Awards Program. In the coming year, PROP plans to take this certification course one step further by offering it on the Internet.

# **MARKET DEVELOPMENT**

## **SUPPLY AND DEMAND OF PENNSYLVANIA RECYCLABLE MATERIALS**

During 2002, R.W. Beck undertook a Recycling Markets Center Study on behalf of the Pennsylvania Department of Environmental Protection (PA DEP), with the initial step being to quantitatively assess the supply and demand for selected recyclable materials generated in Pennsylvania, including assessment of the existing collection, processing and end use infrastructure.

To characterize the nature of and relationship between supply and demand for recyclable materials in Pennsylvania, and to particular regions of Pennsylvania, representatives from the following types of organizations were interviewed to tap their knowledge and insights:

- Processing center managers
- Municipal recycling coordinators
- Manufacturers of products that use recyclable materials as feedstock
- PA DEP personnel
- PENNDOT personnel and subcontractors
- Professional Recyclers of Pennsylvania (PROP) and Pennsylvania Resources Council (PRC) representatives
- Recycling industry association representatives
- Other recycling industry professionals

R.W. Beck used knowledge and information about recycling markets and market demand gained from conducting similar research for other clients as well as information obtained from various trade publications and the Internet.

The materials addressed in this analysis were as follows:

Commonwealth of Pennsylvania Act 101 materials:

- Glass containers
- Old Newspaper (ONP)
- Old Corrugated Containers (OCC)
- High-grade office paper

- Aluminum cans
- Steel cans
- Plastics
- Leaf waste

Materials addressed by other Commonwealth initiatives:

- Food waste and other organics
- Electronics

Table #5 provides an overview of the commodity-by-commodity assessment of the supply of recyclable materials in Pennsylvania, relative to the demand for them.

Table #5  
**COMMODITY ASSESSMENTS**

Commodity	Commodity Assessment
Glass Containers	<ul style="list-style-type: none"> <li>• Mixed cullet – definite oversupply. End uses are very limited.</li> <li>• Flint has relatively strong demand in PA, however some end users also obtain material from bottle-bill states. These states can often undercut PA prices, as well. In general, however, markets are available for flint, and currently for amber and green, although prices are low.</li> </ul>
Paper (ONP, OCC, High Grade Office)	<ul style="list-style-type: none"> <li>• All of these grades have markets; however much of PA’s secondary paper is sent to mills outside the state.</li> <li>• Office paper and OCC found in residential waste is under recovered with respect to demand.</li> </ul>
Aluminum Cans	<ul style="list-style-type: none"> <li>• Virtually all of PA’s used beverage cans (UBCs) are processed out -of- state. UBCs remain a relatively high-value commodity.</li> </ul>
Steel Cans	<ul style="list-style-type: none"> <li>• PA is a net importer of secondary steel cans. Steel prices have been low.</li> </ul>
Plastics	<ul style="list-style-type: none"> <li>• Film plastics and other plastics, such as #3-7, are processed more frequently out of Pennsylvania, than within. These materials are not widely collected in the Commonwealth.</li> <li>• HDPE and PET processors in PA indicate they could use more feedstock from in-state sources.</li> <li>• Film plastics are processed primarily out-of-state, however still largely under-recovered.</li> </ul>
Leaf/Yard Waste	<ul style="list-style-type: none"> <li>• Yard and leaf waste remains uncollected in many PA communities, due to lack of infrastructure.</li> <li>• Some composting operations located in close proximity to the NY border receive leaf/yard waste from out-of-state, as the collection/infrastructure is inadequate to supply the composters with feedstock from in-state, and NY sources are generally willing to pay higher tipping fees.</li> </ul>
Tree Residue	<ul style="list-style-type: none"> <li>• In general, tree residue is given away or managed on-site.</li> </ul>
Food Waste	<ul style="list-style-type: none"> <li>• The infrastructure for collecting and processing food waste in composting operations is underdeveloped, so supply of food waste fit for composting exceeds demand.</li> <li>• PA has many food manufacturing/processing establishments.</li> </ul>

Commodity	Commodity Assessment
Electronics	<ul style="list-style-type: none"> <li>• The infrastructure for collecting electronics is underdeveloped, so supply of electronics may appear to exceed demand.</li> <li>• Electronics recyclers are trying to get business regionally – to compete, they must be willing to operate regionally.</li> </ul>

For each material, the Recycling Markets Study prepared descriptions of the recovery, processing and end use infrastructure, the nature of supply and demand, pertinent Commonwealth regulations, and findings related to the relationship between supply and demand. This information can be found in the Supply and Demand Workpaper in Appendix 4.

Pennsylvania is using the national standard recycling calculation, which was developed by the U.S. EPA and the Council of State Governments to make it possible to compare recycling rates from state to state. In addition to the materials specified in Act 101, materials under the EPA calculation include food wastes, textiles, tires and white goods. Using this method fulfills a Municipal Waste Stakeholders’<sup>1</sup> recommendation to consider materials other than those listed in Act 101 when determining Pennsylvania’s recycling rate. The Department will continue to provide data on all of the materials that are recycled however we not incorporate all of the materials into an alternative recycling rate.

A successful recycling market development program must include educational outreach to government agencies, educational institutions, business and commercial enterprises, industry and residents:

1. Governments need to be aware of their spending power and the impact they can have in developing markets for recycled products.
2. Educational institutions have an opportunity to advance the cause of recycling market development and participate in the recycling that supports the markets.
3. Some businesses recycle enthusiastically and some, unfortunately, do not. Efforts to increase the number of businesses that recycle and buy recycled have been ongoing since the passage of Act 101.
4. Industrial recycling has probably been driven more by corporate budgets than by education over the past fifteen years. Because the savings are immediate, industrial establishments are more likely to move quickly to develop beneficial recycling programs, but for the same reason, they will discontinue those same programs if the savings decline.
5. It is to the public that most educational material is directed. The education of the public is also the educational effort that must continue at the most intense rate if recycling knowledge is to keep up with a changing population.

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<sup>1</sup> Municipal Waste Stakeholders Report to the Secretary – January 25, 1996

## **BUY RECYCLED INITIATIVE**

The goal of promoting “buy recycled” is to increase the purchase of recycled products by government, business, institutions and other consumers, particularly for those products manufactured in Pennsylvania. In order for the recycling loop to be closed, there needs to be manufacturing and purchasing of recycled goods. The Department already has established a fairly extensive buy recycled program, including an online recycled products guide and an online directory of Pennsylvania recycled product manufacturers. The Department of General Services maintains the Pennsylvania Local Piggyback Purchase Program that enables local governments to buy recycled products through state contract.

The nationwide “official” Recycled Products Guide (RPG) established in March 1989 is also available on the Department’s website. The Department subscribes to the service to make the database available to Pennsylvanians. The database now includes:

- Over 4,500 recycled product listings from over 700 manufacturers and distributors and over 600 merchants.
- Over 950 different recycled product classifications.
- 63 Pennsylvania companies whose products are highlighted when they occur in any product category.

During 2001 and 2002, the Department conducted a “Buy Recycled” promotion to encourage Pennsylvania businesses to purchase products made from recycled materials. A representative visited more than 250 companies in Pennsylvania to inform them of the quality of recycled products and cost savings realized in purchase. The representative found that the sentiment towards purchasing recycled products seems to be improving. It appears that the county coordinators and the Department efforts toward promoting buying recycled products is paying off. There appears to be a growing awareness of recycled products among most companies, and most are at least looking into these products.

In other instances, however, the negative perceptions of buying recycled products remain. Negative perceptions involve paper products and quality. Fear of having to change long-time relationships with suppliers in order to ‘buy recycled’ is a common concern.

Additional buy recycled efforts in the Commonwealth can be directed toward enhancing its buy recycled outreach and promotion efforts. The Department will:

- Address negative perceptions about recycled products;
- Identify other types of recycled content products that buyers would be interested in procuring;
- Determine what types of incentives are particularly effective/ineffective;
- Exchange information about experiences, both positive and negative, that the buyers have had with recycled products, as well as with manufacturers and suppliers of those products; and

- Determine effective strategies to encourage recycled product manufacturers and suppliers to bid on solicitations.

The Commonwealth also needs to make more substantive efforts toward harnessing the buying power of state government through more concerted efforts at buying recycled products. In the past when much purchasing was centralized, it was easy to identify items on state contract that were produced with recycled materials. The Department of General Services even developed the Commonwealth Agency Recycling Office (CARO) to work with appropriate vendors to get their products on the state-wide contract, so that they would be available not only to all Commonwealth agencies, but to local governments as well.

Currently, the state system allows much more localized purchasing through the credit card system, where purchasing takes place through local vendors rather than off the statewide contract. Purchasing done in this way may not be as focused on the preference of buying recycled content products. Although Management Directives and Executive Orders specifying buy-recycled initiatives were developed during the two previous administrations, the Department is working with DGS to revitalize efforts of purchasing recycled content products, as well as promote better Commonwealth agency-wide recycling efforts, through the development of a Management Directive that would hold each Commonwealth agency accountable for their recycling and buy-recycled efforts to demonstrate leadership and facilitate market development in the Commonwealth.

Listed on the Department's Recycling Website are approximately 140 Pennsylvania manufacturers of recycled products in the following categories:

Automotive Supplies  
Bottles and Containers  
Building Materials  
Cans and Metals  
Clothing and Accessories  
Home and Yard  
Packaging Materials  
Paper and Office  
Recycling Containers

Included is a wide range of manufacturers, both large and small, who make products ranging from birdhouses, jewelry and fashion accessories, to insulation and wallboard, cans, glass and plastic bottles, and even playground mats made of old tires. Although their markets are nationwide and, in some cases, worldwide, the companies are Pennsylvania companies, part of Pennsylvania recycling. Each year, these and other commercial interests find new ways to recycle both old and new recyclable materials. As each one is reported, the Department adds that material to the reporting list, provided it is determined to be part of the municipal waste stream. New recycling opportunities have been developed since Act 101 went into effect in 1988. One such example is the ability

to recycle plastic shrink wrap, which is used to cover boats and other vehicles for storage and to manufacture plastic lumber.

## **DEVELOPMENT OF RECYCLING MARKETS**

Included in Act 101 is a requirement to incorporate some program of recycled materials marketing, beginning with a market development study to be developed within the first fifteen months of the Act, and a further update of that study within three years after the study was complete. There has been a continually increasing emphasis on the market development phase of recycling since the program began to mature. In every marketing effort initiated under Act 101, there has been an element of government assistance with an emphasis on private sector growth. Pennsylvania embarked upon a short-lived private/public partnership program, which was intended to increase private access to Act 101 funding in support of the development of private recycling business and industry. For a time the Department also provided low interest loans in an effort to increase the growth and development of private markets. In 2002, the Department designed a grant program to improve the composting infrastructure. Recently, the Department embarked upon the concept of establishing a Market Development Center to provide assistance to those engaged in recycling, processing and manufacturing.

For the past several years, the Department's working definition of "recycling market development" has been the development of a set of government policies and programs that aid in overcoming marketplace barriers and ensure that recyclables collected from residents and businesses are sold to companies that use them as raw materials to make new products, which are then sold to consumers. Recycled materials are commodities that are traded in the global marketplace, and the actual price of commodities can be little influenced at the local level.

The two primary goals of a state recycling market development effort are to increase the use of Pennsylvania-generated secondary materials in product manufacturing and to improve the conditions for recycling in Pennsylvania. This should result in increased competitiveness of the Commonwealth's recycling industries, reduced unemployment and improved job opportunities for Pennsylvania workers.

The Commonwealth's recycling market development initiatives are not intended to replace markets, but to empower existing markets and encourage recyclable materials suppliers, processors and end users to be more effective participants in the global marketplace.

Legislative tools, while available, usually are not the most effective ones to address inefficiencies in the marketplace, especially mandating legislation. The role of government in promoting any economic effort has traditionally been that of encouragement and provision of services. In recycling, the encouragement could take the form of assistance with taxation relief, streamlined permitting requirements and locational information such as that provided for brownfields development.

Government can work to identify inefficiencies in the market place, such as:

*Imperfect flow of information* – Market players may make inappropriate decisions because of a lack of information, lack of access to existing information, or misinformation.

*Uncertainty about future market conditions* – Unknowns regarding the quantity, price and quality of secondary material supplies, the demand for secondary materials and recycled products, and forthcoming regulations and their impacts on markets can inhibit investment in recycling collection, processing or manufacturing capacity.

*Risk aversion* – Financial investors of venture capital and debt finance have a wide range of choices regarding the types of businesses in which to invest. Some investors may avoid certain recycling businesses, perceiving that they are too risky, even if investors are adequately compensated for the risk. Recycling business development is then inhibited by a lack of capital.

*Mispricing of collected materials and products due to undervaluing public benefits and/or costs* – In efficient markets, market prices fully reflect the costs and benefits to society. In some instances, however, prices reflect only the costs and benefits to the buyer and seller. The benefits of recycling that accrue to the public, such as reduced pollution and avoided landfill costs, are not incorporated into the price of collected materials that industries are willing to pay. Failure to recognize the associated environmental and resource depletion costs, as well as the economic benefits that accrue from recycling, leads to an under-valuation of the materials collected for recycling.

*Inability to reach economies of scale* – New recycled products often are manufactured in small production runs, reflecting low initial demand. Small production runs, however, can result in high per-unit costs, which can keep demand low. If demand (or supply of input materials, in instances where insufficient feedstock is limiting production) were to grow, runs could get larger and per-unit costs would fall, which would further stimulate demand.

*High transaction costs* – Each transaction in the marketplace carries a certain cost, which may be low or high. Transaction costs can include information search time and expense (e.g., to find qualified buyers, assess market conditions, locate materials with suitable characteristics), legal and regulatory activities (e.g., obtaining permits, drawing up contracts), and transportation time and expense (of materials and people). High transaction costs can scuttle deals. Market actors may decide that costs of carrying out the transactions exceed the likely benefits.

*Unrestricted nature of technical information* – Technical innovation can lead to new levels of recycling activity through developing new recycled products and new collection, processing and manufacturing technologies. However, despite the protections of the patent system, technology development can be inhibited if it is thought that competitors can replicate innovations at low cost. Technical information is a “public good” — that is, it is inexpensive or free to obtain and use unless well hidden from competitors or guarded by legal protections. In addition, because of this, many companies are unwilling to share technical information

There are several actions that government can take to address marketplace inefficiencies. Government can 1) provide information, 2) facilitate the marketplace, 3) provide financial assistance, 4) conduct buy-recycled programs and 5) regulate. Each tool, owing to its nature, is better able to address different types of inefficiencies in the marketplace.

*Provide Information* – To correct the imperfect flow of information and reduce uncertainty about future market conditions, government can provide market players with information, e.g., market assessments and related data, recycling business directories, technical information and assistance, opportunity analysis, procurement training, consumer education, referrals to appropriate resources such as state and local economic developers. To improve the flow of information, government can:

- Develop supply and demand data.
- Conduct workshops to stimulate business interest in using recycled feedstocks.
- Promote best practices and technical assistance for processing materials into feedstocks.
- Develop and distribute materials specifications.
- Promote approved uses of recycled materials by agencies and end-use industries.
- Develop and distribute methods to prevent and reduce contamination of collected recyclable materials.
- Promote value-added uses for recycled materials within Pennsylvania.
- Develop technical assistance.
- Develop permitting assistance.
- Consolidate and distribute information on emerging technologies.

*Facilitate the marketplace* – Bring market players together through stakeholder forums, linking of specific suppliers and end users, materials exchanges, etc. to decrease risk aversion, improve economies of scale, decrease transaction costs and improve the flow of technical information. Facilitation tools include encouraging relationships with:

- Material collectors, processors and end users.
- The Department of Community and Economic Development (i.e., Governor's Action Team, Center for Entrepreneurial Assistance, Small Business Financing Center).
- Local Development Districts.
- Industrial Resource Centers.
- Small Business Development Centers.
- Other economic development and business assistance agencies.
- Colleges and universities with economic development curricula/interests.
- Trade associations representing recycled materials and recycling industries,
- Waste and recycling collection industry participants.

- Industrial technical assistance centers.
- Local recycled materials suppliers, processors.

*Provide financial assistance* – Using financial incentives to influence market behavior, e.g., through the availability of grants, investments (loans, equity), and tax incentives to encourage certain behaviors, and the imposition of taxes and fees to discourage others. This can be used to correct the mispricing of collected materials and products.

*Buy recycled programs* – Using the Commonwealth’s procurement system to increase purchases of recycled products, using such tools as price preferences, set-asides, material and bid specifications, voluntary agreements, and best value contracts, cooperative purchasing, as well as working to influence the purchasing practices of other organizations. A larger demand for recycled products should help to stabilize future market conditions.

*Regulation* – Establishing rules and policies that require certain actions concerning secondary materials and prohibit others; examples of regulatory tools include recycled content requirements, landfill bans, and bottle bills. Regulation should help to stabilize future market conditions.

One of the most positive impacts government can have on recycling markets is to facilitate communications between businesses to make it possible for them to assist each other. By serving as a conduit of information and reference, government can eliminate considerable start-up costs for new businesses. This component could operate in much the same way as another technique used by some economic development authorities, the incubator system, where small start-up businesses share certain businesses functions. It also would be a good fit with economic development programs associated with brownfields and enterprise zones.

There are four essential components of a Recycling Market Development System in Pennsylvania. They are:

1. An ongoing ***strategic planning effort*** that identifies and determines means to address market opportunities and challenges;
2. ***Market development tools and staff***, with adequate funding, to address the identified opportunities and challenges;
3. Means for ***evaluating*** the impacts of programmatic efforts, and adjusting strategies and tools accordingly; and
4. A mechanism for ongoing ***communication, consensus and coordination*** among pertinent agencies and organizations in order to effectively guide and manage the above.

## **Market Development Initiatives and Action Items**

1. As part of its comprehensive approach to market development the Department will implement the Department Strategic Market Development Plan. See Appendix 3
2. As part of the Strategic Market Development Plan create and implement an independent Market Development Center that will serve as an information clearing house, facilitate cooperation between recycling and economic development officials, and increase the local and regional use of secondary materials generated in the Commonwealth.
3. Create a new grant program for Pennsylvania manufacturers to begin using recycled content in products they produce or increase the amount of recycled content they use in their products.
4. Continue and expand the Compost Infrastructure Grant, which assists composting businesses with expanding their businesses to consume increased amounts of organic materials.
5. Utilize the results of the Department's Waste Composition Study to ensure markets are developed for the materials most prevalent in the municipal waste stream.

## **ACT 101 RECYCLING FINANCIAL ASSISTANCE PROGRAM**

Act 101 established four major grant programs to support the recycling and municipal waste management efforts by municipalities. At least 70% of the moneys received by the Recycling Fund must be expended for these grants, market development and research by the Department of Transportation.

Section 901 County Planning Grants provide funding for counties to cover the cost of preparing municipal waste management plans in accordance with this Act 101; for carrying out related studies, surveys, investigations, inquiries, research and analyses, including those related by siting; and for environmental mediation. Counties may also receive grants under this section for feasibility studies and project development for municipal waste. Counties often work with municipalities to analyze, review, and improve local recycling programs.

Section 902 Recycling Implementation grants provide funding for start-up costs of recycling programs. Items most often purchased under 902 grants are recycling bins, collection equipment and education materials. Purchases for the development of recycling and composting centers, including land improvements, buildings and processing equipment are also eligible. While overall demand for 902 funding has exceeded availability, the Department has prioritized and selected those projects that best help the Department meet the overall recycling goals of the Commonwealth. This selection process, combined with the growth of the recycling fund due to municipal waste imports, created a surplus in the recycling fund. In 1999 legislation was passed that

authorized \$125 million dollars be transferred to the Environmental Stewardship Fund at a rate of \$25 million a year for a 5-year period. This resulted in budget shortfalls in the Recycling Fund. In 2002, the Department worked with the General Assembly to extend the \$2 ton recycling fee until January 1, 2009. This effort, combined with a comprehensive financial review of the recycling fund, has allowed the continuation of the program. It should be noted that current grant requests are more than double the available budget.

Section 903 County Recycling Coordinator Grants provide for payment to the county for one-half the salary and expenses of a county recycling coordinator. Only those hours engaged in recycling and the appropriate benefits, expenses and supplies are eligible. Most county coordinators are individuals. However, County Conservation Districts, nonprofit agencies and consultants have served in this capacity from time to time. Counties with dedicated recycling coordinators have been the most successful recycling programs. There has been adequate funding for Section 903 applications each year since the grants were first offered. Approximately 50 of the 67 eligible grantees submit applications each year.

Section 904 Recycling Performance Grants provide municipalities with cash rewards for the materials listed in the Act that they recycle. The funds are distributed according to a formula based on population, total recycling and a ratio of residential to commercial recycled tonnage. The municipality may use the funds for any legal municipal activity. Because there are very few unrestricted funds available to municipalities in the Commonwealth, these grants are very popular, and many municipalities expend extra effort to encourage recycling at an increased rate in order to get increased funding each year. Section 904 grant funding has been adequate to date, but a change in the payout formula would be required if grant applications total more than the funds available under the current spending plan.

Mandated recycling programs are successful only when the state provides for funding to support them. By providing startup costs, Act 101 provided the encouragement for municipalities and counties to succeed at programs they had not tried, or indeed, encountered before the Act. The effect on business and industry was immediate. Faced with a readily available supply of materials, recycling businesses and industries found themselves able to function beyond the initial assessment of resources. The economic benefits discussed in a previous section constitute a considerable return on the investment of both the Commonwealth and its residents and businesses.

## **PROPOSED MODIFICATIONS TO CHAPTER 9 RECYCLING GRANTS**

Improve Section 901 County Planning Grants by:

1. Creating a pre-approved grant that will reduce the workload for counties to allow them to quickly examine the economics of their recycling programs.

2. Counties that utilize this program to fund local cooperative efforts of municipalities will be given priority. Examples of this type of project might be where several municipalities need to investigate the feasibility of joint purchasing and use of recycling equipment or joint contracting for waste services.

Target Section 902 Recycling Implementation Grants by requiring local governments to:

1. Consider methods to reduce the amount of waste they generate. To facilitate this approach, the Department will give first priority and highest consideration to those municipalities that provide pay-as-you throw as an option to its residents.
2. Incorporate contractual requirements that facilitate revenue sharing between local governments, haulers and recyclers.
3. Require cooperation among local governments when buying or developing recycling programs that can be jointly accomplished in a more economic manner. An example is the development of composting sites and the equipment needed to support a site. There is no need to fund compost sites and related equipment for each of the Commonwealth's 2600 municipalities.
4. Require record keeping that documents the economics of recycling programs to development metrics for continuous process improvements.

Improve Section 903 County Recycling Coordinator's Grants by:

1. Implementing specific performance standards and job duties. Some examples of those standards would include the number of educational and technical visit to local governments, per capita waste generation reduction and local government evaluation of county recycling coordinators. Examples of job duties will include developing educational materials for residents, schools, businesses, organizations and local recycling markets and providing regular workshops and meetings between municipalities and local economic development officials.

Improve Section 904 Recycling Performance Grants by:

1. Requiring proceeds from this grant program to be reinvested into local waste reduction and recycling programs.
2. Changing the formula to provide increased funding for those materials that are hard to recycle and less for those that have historically strong market values.
3. Requiring municipalities to ensure materials are reintroduced to the commerce stream.
4. Develop requirements that ensure some percentage of Section 904 Grant funds be utilized to support the employment of a Municipal or Multi-municipal Recycling Coordinator.

5. Develop requirements that ensure some percentage of Section 904 Grant be used to develop incentives for municipal recycling programs and coordinators to interact with and cooperate with economic development organizations functioning in their market areas.
6. Develop requirements that ensure some percentage of Section 904 Grant be used to foster and support cooperation between municipal recycling programs, county coordinators and economic development organizations and appropriate financial institutions within the area where they operate.

## **County Recycling Coordinators and Market Development**

Act 175 requires that this recycling program plan include recommendations to county recycling coordinators designed to encourage market development. The position of county coordinator in some counties is currently structured so that other duties are assigned to the recycling coordinator. The result of this structure is that the county coordinators have time to manage recycling programs, educate the public and implement the requirements of Act 101, but they do not have sufficient time to devote to developing markets. In order to accomplish the Act 175 market development requirement, the Department will work with county commissioners to redefine county coordinator positions as full time positions. This will allow the county coordinator additional time to take advantage of opportunities to influence, establish, or expand markets at the local, regional and wider levels.

County Coordinators should begin to work with local economic development officials to maintain existing recycling businesses, expanding those businesses, creating incentives and opportunities for feedstock conversions, new businesses and relocations.

Throughout Pennsylvania, economic development organizations have provided assistance to new, relocated, restructured and expanding businesses for many years. In that time, interacting with other organizations that may also have benefits to offer these recycling businesses has often been overlooked in each organization's efforts.

It is to the benefit of any business seeking help in locating, operating or expanding its market to have the organizations assisting it be knowledgeable about each other, and to be able to count on their interaction and cooperative efforts. To this end, the Commonwealth of Pennsylvania intends to foster and support cooperation between municipal recycling programs, county coordinators and economic development organizations within the area in which they operate. The Department will hold workshops and seminars to provide a venue for these parties to network with and educate each other on the various aspects of their respective programs. Such cooperation, it is believed, will lead to the development of local and regional markets in particular, and wider markets in general for the recyclable materials collected in these programs. The Department also assumes that, where feasible, appropriate financial institutions will be part of the interaction. Financial institutions will need to be educated on how the Commonwealth recycling industry functions.

## **RECOMMENDATIONS FOR COUNTY COORDINATOR TO ENCOURAGE MARKET DEVELOPMENT**

1. The Department, in cooperation with PROP, will develop economic and market development-training programs for the coordinators. Such programs might include studies in economics and contract negotiation as well as materials processing and storage impacts on pricing.
2. Facilitate workshops and meetings between economic development officials and county recycling officials, including, as necessary, county commissioners, solicitors and representatives of other county agencies and authorities.
3. Educate local financial officials on the Commonwealth's recycling industry. This category should include not only banks, but also investment companies as they are identified, and the local economic development agencies. Every coordinator is expected to assist DEP and PROP in the development of a document that can be used to educate distance or online financial sources as the need may arise.

The Commonwealth must learn from its recent waste composition study, which demonstrated that the waste stream still holds great opportunities for recycling. A critical mass of recyclable materials will facilitate local business opportunity and growth. Many recycling businesses in the Commonwealth still need to import materials from other states. These businesses would prefer to consume local materials if they could depend on a consistent quality and quantity.

### **General Assembly Items for Discussion and Legislative Change**

Through this report the General Assembly will now have an understanding of the economic and environmental benefits the Commonwealths gains from recycling. With that in mind, members of the General Assembly may want to discuss new measures for evaluating the recycling program such as jobs creation, tax revenues, resources saved, pollution prevented and various other environmental and economic measures.

To facilitate recycling market development the General Assembly may want to consider financial incentives that will assist local governments with business retention, expansion of existing recycling business, development of new recycling businesses, and relocation of existing businesses.

The General Assembly may want to enact measures that increase the amount of recyclable materials diverted from the waste stream and prohibit managing these valuable materials in manners that do not promote economic growth or environmental protection. Materials regarded as litter are still open burned and are often recyclable. As documented in the Department's Waste Composition Study, large amounts of organic materials such as yard, food, and wood waste remain in the waste stream. These materials are all readily recyclable and are valuable in building the Commonwealth composting industry and in working towards sustainable practices. Lastly, to protect the

economics of tourism and the environment and to capture additional materials needed by our recycling businesses to expand, the General Assembly may want to consider and discuss methods to discouraging littering. Possible considerations include:

### **Recommendations for Legislative Change and Discussion**

1. Consider developing financial incentives and tax credits for Pennsylvania business and industry to promote the use of recycled materials as feedstock in manufacturing and expand the Commonwealth's recycling industry.
2. Consider defining and enacting universal trash collection requirements.
3. Consider enacting prohibition of the disposal, by any means, of potentially valuable materials that are readily recyclable.
4. Encourage and provide incentives for implementation and continued use of sustainable practices such as composting.
5. Ensure an on-going source of funding to support the Commonwealth's recycling program by eliminating the sunset date of the Act 101 recycling fee.

## **CONCLUSION**

There will always be a governmental cost associated with implementing recycling programs. However, the economic gains and environmental benefits the Commonwealth realizes from its recycling programs far outweigh the costs associated with recycling.

Implementation of this plan will help to educate and prepare municipalities to better participate in the regional and global marketplaces of recycling, and assist Pennsylvania's recycling programs in their efforts to become financially self-sufficient. The result of this implementation will be local recycling programs that are more able to adjust to market fluctuations that occur at the regional and global level.

The increased ability of local markets to consume materials from Pennsylvania's recycling programs will encourage the development and expansion of the recycling industry in the Commonwealth which will directly benefit state's economy.

# *Act 175 Recycling Program Plan*

## **APPENDIX 1**

### **SWAC**

## **RECOMMENDATIONS FOR THE ACT 175 RECYCLING PLAN**

The recommendations included in this appendix are those that have been described and discussed during several meetings of the State Plan Subcommittee of the Solid Waste Advisory Committee. Subcommittee participants include representatives from private industry, non-profit groups and local governments. Their efforts resulted in the development of this list of recommendations.

The recommendations fall naturally into three categories, Educational, Promotional and Economic. Each set of recommendations has, therefore, been organized under these categories for comparison of effort. The recommendations may have effect in categories in addition to the one in which they have been placed.

The Department used this list of recommendations when formulating the list contained in the actual plan. At the appropriate time in the future, if the resources are available the Department may also review, consider and implement any of these recommendations contained in the list below.

### **RECOMMENDATIONS FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION**

#### **GENERAL RECOMMENDATIONS**

In order to achieve the objectives of this plan, the Department should consider the following changes:

#### **EDUCATIONAL**

- Return to using the EPA standard recycling measurement to allow for more consistent comparisons between recycling programs and evaluation of the state's recycling rate over a period of time.

- Increase the emphasis on Section 904 recycling grants and the importance of reinvesting these monies back into the recycling program, thereby decreasing the dependency on Section 902 recycling grants for capital investments.
- Increase consistency and cooperation among local recycling programs.
- Educate residents and businesses, through cooperative Commonwealth and local outreach programs, on the value of recycling to Pennsylvania.

#### ECONOMIC

- Utilize tools similar to the REI study and the Environmental Benefits Calculator developed by the National Recycling Coalition to measure economic and environmental benefits of the recycling program.
- Facilitate an understanding of comprehensive solid waste management programs and how the economics of recycling relates to the other elements of waste management.
- Assist municipalities with making contractual modifications that allow municipalities to realize revenues from their recyclables when market conditions are appropriate.
- Improve the operational efficiency of recycling programs by providing technical assistance, and highlight model programs that are moving toward or have achieved financial viability.

#### PROMOTIONAL

- Increase county recycling coordinator accountability to ensure that minimum levels of critical recycling-related activities are conducted under Section 903 grants and provide similar recycling coordinator funding and accountability at the municipal level.
- Recommend that municipalities take steps toward reinvestment of Section 904 Recycling Performance grant monies into local recycling programs and identify means to reserve these funds for the support of their programs.
- Provide incentives for existing recycled product manufacturers to increase the amount of recycled content they use in the production of their products, and for new manufacturers that use recycled materials in their products to locate on Pennsylvania Brownfield sites.
- Ensure recycling participation and reporting in commercial and institutional arenas.
- Develop a web-based suggestion box to solicit new ideas and accept continuous public input to improve the recycling program.

## **SPECIFIC RECOMMENDATIONS**

### **EDUCATIONAL**

#### **Recycling Education**

- Educate county and local officials on Act 101 requirements, recycled procurement, recycling benefits, etc.
- Provide training for economic development officials on a regional basis.
- Promote the economic and environmental benefits of recycling to the general public.
- Promote the avoided disposal cost accrued since the inception of Act 101 recycling program.
- Promote the fact that recycling has costs like other services.
- Continue and expand educational messages that emphasize the complete recycling loop.
- Connect recycling to environmental ethics and stewardship.
- Remind entities in mandated communities that recycling is the law. Use of enforcement actions and promotion of enforcement outcomes may be necessary at times.
- Promote Waste Reduction and Reuse Programs
  - Increase public awareness of waste reduction with a goal to decrease the MSW generation rate.
  - Inform the public on MSW generation trends.
  - Inform the public on MSW generation impacts.
  - Promote building materials reuse centers.
  - Support the “Use It Again, PA!” directories.
  - Promote and encourage PAYT programs.
- Improve access and management of recycling information.
  - DEP recycling web site redesign.
  - Visual presentation of user-friendly information that is available to grantees, county and municipal programs, compost sites, MRFs, etc.
  - Link data on grants, recycling programs and entities through a GIS application.
  - Promote activities of municipalities that use Recycling Performance Grants for community projects or programs.

- Promote activities of communities, businesses and institutions with good commercial recycling programs
- Develop library of web-accessible information including videos, PSAs, fact sheets, brochures and multi-language materials.
- Promote special waste handling events/programs such as e-Cycling events.
- Promote the Department of Education’s educational standards for environment and ecology by promoting recycling, waste reduction and litter prevention education lesson plans to educators.
- Develop awareness of true costs of MSW collection/disposal and recycling collection and processing/marketing.
- Continue public event recycling promotions with sports venues.
- Develop an awareness of alternatives to open burning.
- Promote the waste hierarchy and reduce, reuse, recycle.

## ECONOMIC

### **Financial Assistance Programs**

- Support funding sources for the Act 198 Solid Waste-Resource Recovery Demonstration Grant Program.
- Offer pre-approved Act 101, Section 901 Planning grants for economic assessment of county and municipal recycling programs.
- Target Section 902 grants to specific outcomes such as PAYT programs.
- Provide financial support for Waste Reduction and Reuse projects and programs.
- Maintain funding priority to inter-municipal and multi-county projects and programs.
- Provide financial incentives to counties implementing comprehensive trash collection and recycling programs.
- Base Section 903 recycling coordinator grants on the performance of the coordinators, and disqualify those who spend less than 50 percent of their time on recycling.
- Budget appropriate funds for Act 101 Section 904 grants.
- Consider requiring the use of 904 Recycling Performance Grant funds for investment in recycling programs.
  - Support recycling program costs.
  - Support buy-recycle programs.

- Support drop-off programs for tires, consumer electronics, white goods and other bulky items, and MSW collection in rural areas.
- Establish standards for enforceable actions.
- Promote/require use of recycled products at major events.
- Consider expanding the definition of source separated recyclable to include additional materials.
- Provide incentives/grants for reuse of brownfields sites for recycling projects.
- Dissuade municipalities from contracting for unlimited waste collection service.
- Consider MSW planning on a regional rather than county level.
- Provide funding to establish and support a recycling coordinator Commonwealth agencies based on performance, especially in the Departments of Agriculture, Corrections, Education, General Services and Transportation.
- Revise Executive Order to require all state agencies to recycle and buy recycled.
- Review state contracts and evaluate whether minimum order restrictions and be lowered.

## PROMOTIONAL

### **Recycling Market Development**

- Form the Pennsylvania Recycling Markets Center.
- Support funding for a strategic plan for market development.
- Conduct roundtable meetings and partner with various manufacturers and manufacturing organizations to facilitate understanding and implementation of the recommendations in this plan, and to encourage the use of recycled content in products and the design of products so that they are more easily recycled.
- Conduct roundtable meetings with transporters and processors of recyclable materials to facilitate understanding and implementation of the recommendations in this plan.
- Invest Act 101 funds into competitive Infrastructure Grants for the recycling, reuse and composting industries.
- Develop a program to promote Brownfield sites for recycling and e-cycling projects.
- Promote programs that add value to collected recyclable materials in Pennsylvania.
- Develop a process to increase the understanding and cooperation of recycling collectors, processors and end-users of their respective activities.
- Expand “Buy Recycled” outreach to consumers at all levels, retailers, distributors, manufacturers, product and packaging designers, county and municipal recycling

coordinators, and purchasing agents at local governments, schools, colleges and universities.

- Add a certification requirement for state contracts that verify the use of products with recycled content.
- Audit and examine the state contracts and specifications for recycled content.
- Highlight products with recycled content that are available through the Department of General Services (DGS) Cooperative Purchasing Program.
- Provide procurement training to purchasing officials at the State, County, municipal, school district, school, university and college levels.
- Expand the PROP Professional Certification Program to include market development and buy recycled courses.
- Inventory examples of cooperative marketing of recyclables and identify potential opportunities.
- Promote cooperative marketing through workshops and one-on-one training.
- Identify new materials and develop markets for new materials to be recycled based on the results of the Department's Municipal Waste Characterization Study.
- Consider the barriers to using recycled commodities, i.e., glass as an alternative for sand/septic systems.

### **Recycling Technical Assistance**

- Maintain support for the Recycling Technical Assistance Program.
- Target Recycling Technical Assistance funds to an efficiency analysis for all municipalities required to recycle by Act 101.
- Develop case studies and a speaker's bureau to promote effective recycling education and enforcement programs.
- Develop and support programs like the Greater Philadelphia Commercial Recycling Council to stimulate recycling participation in the commercial and institutional sectors in additional areas of the Commonwealth.
- Inventory recycling marketing arrangements and promote contracting arrangements that provide benefits to local recycling programs through risk and revenue sharing.
- Continue to promote the virtues of Pay-As-You-Throw collection programs that provide incentives for householder participation in waste reduction, recycling and composting programs.
- Develop and promote recycling programs for specific audiences to encourage away-from-home recycling opportunities, including hotels, prisons, sport venues and associated businesses, marinas and associated businesses, the Pennsylvania Farm Show and associated businesses, exhibitions, trade shows and conferences, transportation sectors, and the commercial sector.

- Promote more informed waste and recycling service contracting arrangements which provide revenue sharing and risk sharing, incorporate a wide variety of recyclable materials, require/encourage haulers to provide educational materials, require/encourage haulers to provide notice to residents when recycling is not being performed properly, require/encourage haulers to report on tons of materials recycled annually.

## **RECOMMENDATIONS FOR THE LEGISLATURE**

The Legislature may want to consider the items listed below as they seek ways to improve and further develop recycling in the Commonwealth.

### **EDUCATIONAL**

- Authorize the enforcement abilities of county and local governments (teeth and resources).

### **ECONOMIC**

- Consider new requirements for trash collection in the Commonwealth.
- Consider the detrimental impacts of open burning on recycling and the environment.
- Consider enacting landfill bans for specific recyclable materials.
- Limit retroactivity of Recycling Grants to a five-year period.
- Expand Recycling Coordinator Grants Program to include funding eligibility for municipal recycling coordinators while establishing minimum standards and duties for county and municipal recycling coordinators.
- Require Recycling Performance Grant funds to be invested in recycling programs.
- Seek opportunities to increase use of recycled feedstocks and the substitution of recycled materials for virgin feedstocks.
- Consider developing financial incentives and tax credits for using recycled feedstocks for industry.

### **PROMOTIONAL**

- Support and promote the development of sanctioned recycling programs in all municipalities.
- Consider a statewide “Buy Recycled” goal of 25 percent.
- Add new materials to the Act 101 section 1501 list.

## **RECOMMENDATIONS FOR PROFESSIONAL RECYCLERS OF PENNSYLVANIA (PROP)**

### **EDUCATIONAL**

- Encourage recycling education programs that reduce materials contamination at the collection level.
- Develop a web-based library of recycling educational tools.
- Expand Recycling Professional Certification Program to include local activities that support Recycling Market Development.
- Offer Recycling Professional Certification courses on a regional basis.
- Foster leadership by elected officials to support recycling programs and recycled product procurement.
- Plan and conduct recycling programs for specific audiences.
- Conduct recycling education programs that reduce materials contamination at the collection level.
- Develop and assist commercial and public place recycling programs.

### **ECONOMIC**

- Consider group insurance and health benefits coverage with other authorities, counties or municipalities.
- Seek local uses and industries that add value to recyclable materials collected in Pennsylvania.

### **PROMOTIONAL**

- Support standards for County and Municipal Recycling Coordinators.
- Promote consistent educational messages.
- Promote educational programs that provide feedback to residents.
- Promote county or regional approaches to recycling education.
- Promote cooperative purchasing.
- Promote local uses of recycled materials and products.
- Promote “October is Recycling Month,” America Recycles Day and other efforts that promote the recycling/“Buy Recycled” message.
- Demonstrate a commitment to recycled product procurement.
- Seek and promote county or regional approaches to recycling education, marketing recycled materials and composting.
- Promote and/or conduct e-Cycling events.

- Promote recycling, waste reduction and litter prevention and illegal dumping prevention and proper management of wastes by providing education lesson plans to educators.
- Consider collecting in addition to the materials to the existing list of recyclable materials in Act 101, section 1501, and supporting legislation to add these materials officially.
- Promote cooperative purchasing.
- Emphasize relationship with counties, municipalities and their support organizations to carry a unified message.

## **RECOMMENDATIONS FOR THE PRIVATE SECTOR**

### **Commercial, Institutional and Municipal Establishments**

#### EDUCATIONAL

- Encourage participation in Pennsylvania's Recycling Professional Certification Program.

#### ECONOMIC

- Seek service contracts that minimize disposal costs and maximize recycling benefits.
- Buy products and packaging made with recycled materials

#### PROMOTIONAL

- Follow state and local recycling program requirements.
- Report recycling activities annually to local municipalities.
- Seek opportunities and implement programs that reduce waste.
- Encourage waste audits

### **Waste and Recycling Collection Industry**

#### EDUCATIONAL

- Regularly inform customers of features and requirements of recycling programs.
- Provide education to residents who do not perform recycling correctly.
- Set up a dialogue with the recycling processing and end-use industries to gain an understanding of their businesses and materials requirements.
- Encourage participation in Pennsylvania's Recycling Professional Certification Program.

#### ECONOMIC

- Offer Pay-As-You-Throw programs to encourage waste reduction, recycling and composting.
- Buy products and packaging made with recycled materials.

#### PROMOTIONAL

- Consider waste collection services statewide.
- Ensure that materials collected for recycling are recycled to the maximum extent possible.

- Favor collection techniques that reduce contamination of materials and reduce residues.
- Require annual reports of activities to all customers.
- Report types and amounts of materials recycled to local municipality or county as appropriate.

### **Recycling Processing Industry**

#### EDUCATIONAL

- Dialogue with the hauling and end-market industries to gain an understanding of their businesses and in the case of end-users, their materials requirements.

#### ECONOMIC

- Employ processing techniques that reduce the production of residues to the greatest extent possible.
- Prepare and market materials for the greatest economic return.
- Develop processes to refine residues to usable products and or eliminate residues to the greatest extent possible.
- Buy products and packaging made with recycled materials.

#### PROMOTIONAL

- Communicate with municipalities, county recycling coordinators and the public and private sector hauling industries on materials requirements.
- Promote and/or conduct e-Cycling events.

### **Recycling End-use Industry**

#### EDUCATIONAL

- Seek technical assistance or other services from sources such as the Pennsylvania Recycling Market Development Center.
- Encourage participation in Pennsylvania's Recycling Professional Certification Program.

#### ECONOMIC

- List products in the Official Recycled Products Guide.
- Buy products and packaging made with recycled materials.

#### PROMOTIONAL

- Communicate with municipalities, county recycling coordinators, public and private sector hauling industries and materials processors on materials requirements for each facility.
- Encourage the labeling of recycled content products with appropriate recycled content messages.

## **RECOMMENDATIONS FOR MUNICIPALITIES**

### **EDUCATIONAL**

- None

### **ECONOMIC**

- None

### **PROMOTIONAL**

- Continue enthusiasm for recycling.
- Encourage Pay-As-You Throw programs
- Seek new, local opportunities to utilize collected material so that the impact of down swings in the recycling market can be minimized.

## **RECOMMENDATIONS FOR GENERAL PUBLIC**

- Follow local recycling programs requirements
- Seek opportunities to recycle away from home.
- Seek opportunities to practice environmental shopping by purchasing products and packaging made from recycled materials.
- Seek opportunities to reduce waste.
- Participate in home composting.
- Prevent litter, illegal dumping and open burning.

# *Act 175 Recycling Program Plan*

## **APPENDIX 2**

### **RECYCLING PROGRAM EXAMPLES AND DESCRIPTIONS**

This section contains descriptions of various kinds of local recycling programs in Pennsylvania. These programs serve as examples to officials in other counties and municipalities who are looking for ways to improve their own programs, such as through strengthening public education, increasing collection efficiencies, enlarging the menu of materials collected, or expanding access to markets.

#### **INTEGRATED WASTE MANAGEMENT PROGRAM — CENTRE COUNTY**

The Centre County Solid Waste Authority owns and operates an integrated system for managing the waste generated in Centre County. Facilities located on the Authority's property near State College include a transfer station, source-separated materials processing center, commingled materials separation line, and white goods processing center. In addition, there is an interpretive center in which the Authority conducts extensive educational programs for children, adults, businesses, industries, and community and other organizations, traffic and delivery areas designed to insure safety for events such as Household Hazardous Waste Collections and an administrative building from which all of this is managed. Municipal waste received at the transfer station is disposed at three contracted landfills. The Authority's operation also includes an extensive backyard composting program and educational support for the composting of leaf and yard waste program conducted by State College Borough.

Because the various elements of this system are interdependent, the management of the whole is conducted more efficiently and, in turn, with greater financial sustainability than is extracted from a fragmented system.

#### **PAY-AS-YOU-THROW-PROGRAM — BOROUGH OF CARLISLE, CUMBERLAND COUNTY**

Carlisle Borough, population 17,970, operates a pay-as-you-throw (PAYT) waste collection program. Residents buy 35-gallon trash bags containing the borough's logo at a dozen convenience and grocery store outlets. The cost covers waste pickup and disposal, recycling, bag cost, leaf and Christmas tree pickup and composting, spring

cleanup, recycling and waste collection for borough facilities. The Borough contracts with Waste Management, Inc. for waste, curbside recycling and spring bulky waste collection. The borough conducts the fall leaf collections and collects Christmas trees three weeks after Christmas.

Carlisle's curbside recycling program collects commingled aluminum, glass and steel containers, including empty aerosol and paint cans; plastics (PETE and HDPE); corrugated cardboard; newspaper, including glossies; and junk mail. Commercial establishments in Carlisle are required to recycle office paper, aluminum cans, corrugated cardboard and leaf waste, and to submit reports on amounts recycled. Home composting is promoted by the Cumberland County Solid Waste Authority and the Cumberland County office of the Penn State Cooperative Extension.

Surveys indicate that the PAYT program is one of Carlisle Borough's most popular municipal services. Participation in the program is 100 percent.

## **COUNTY-WIDE DROP-OFF PROGRAM, RURAL — CAMBRIA COUNTY**

Cambria County has approximately 159,000 residents and nearly 50,000 households. The Cambria County Solid Waste Authority has been operating the "Big Blue Bin" drop-off recycling program for nearly seven years. Thirteen recycling depot sites give 80 percent of the population access to recycling within a five-mile radius of the home. The program does not depend on municipal boundaries, so residents may use whichever site is most convenient.

Two full-time truck drivers collect materials from the 13 depot sites, using three collection vehicles. Two of the vehicles are Haul-All RP235 models used to collect newspaper, clear glass, metal cans and magazines. The third vehicle is an Aug-Pak, also provided by Haul-All, with the capacity to compact nearly 118 cubic yards of plastic bottles per load to be delivered to the recycling facility. On a normal two-week cycle, drivers collect recyclables nine days out of ten.

The county added a magazine collection to its program in 2002. Before May 2003, a V-Quip trailer collected the magazines at a different location each week. The Authority collected 125.99 tons of magazines in 2002. From May 18 to June 18, 2003, approximately 40 tons of magazines were collected.

Table #3 lists the commodities and tonnages collected.

Table #3

**Cambria County Big Blue Bin  
Tons of Materials Collected, 2002**

<b>Material Collected</b>	<b>Tons collected</b>
Newspaper	801.28
Clear Glass	108.80
Metals tin/aluminum cans	70.11
Plastic 1 & 2 bottles, jugs, jars	78.70
<b>Total</b>	<b>1,058.89</b>

Cambria County has an inter-county agreement to deliver recyclables — newspaper, metals, plastic and magazines — to the Indiana County Solid Waste Authority ICSWA to be processed and marketed. Clear glass is delivered to the Centre County Solid Waste Authority.

Cambria County’s recycling program is strictly voluntarily; however, 61 of the county’s 63 municipalities have mandatory trash collection ordinances. The Solid Waste Authority’s model ordinance includes a section on burning and prohibits the burning of recyclable commodities.

The county depends on an aggressive recycling education program to attract voluntary participation. A four-page recycling newsletter is published quarterly and distributed as an insert in local newspapers. The newsletter also is used as a handout when giving presentations to school and civic groups, and can be viewed at [www.cambriarecycles.org](http://www.cambriarecycles.org).

Recycling presentations are provided to the public year-round. The busiest times for presentations are September/October for Recycling Month and late March/April/May for Earth Month. From January to December 2003 Authority staff spoke to more than 12,000 county residents about recycling.

In 2002, the Authority began offering a one-week (half-day) “recycling camp,” where children ages 4 through 12 learn the 3Rs of recycling. Children work on craft projects, learn songs, eat environmentally correct snacks, and study landfills, compost piles, recycling bins and litter issues. The week ends with a barbeque for the children and their parents. Forty children registered for July 2003.

The largest single recycling promotion is “Recycling with the Chiefs,” with the Johnstown Chiefs Hockey Club. The Authority sponsors an event at one of the home games to coincide with Recycling Month and America Recycles Day. The county’s recycling mascot skates on the ice between periods at the game, throwing recycling t-shirts to fans in the stands. Announcements about the county recycling program are made several times throughout the evening. In the first three years of “Recycling with the Chiefs,” at least 10,000 hockey fans attended each game and learned about recycling.

In April 2003, the Cambria County Solid Waste Authority signed an agreement with the Somerset County Commissioners to extend the “Big Blue Bin” recycling program into Somerset County.

## **DROP-OFF PROGRAM AS PART OF A CURBSIDE PROGRAM — DERRY TOWNSHIP, DAUPHIN COUNTY**

The Derry Township Recycling Center operates on a cost-neutral basis. That is, the costs of its services are structured so that the Township incurs no net cost for the center’s operation. The drive-through recycling center was funded through a local bond issue and supported by an Act 101, Section 902 recycling grant. The grant helped to offset the cost of site development, building construction and equipment. Each year, the Township earns an Act 101, Section 904 recycling performance grant, which helps offset operational costs. Open only to Derry Township residents, the facility is open four days per week and run by part-time retirees. The center is conveniently located for Derry Township residents at 650 Clearwater Road off Hersheypark Drive.

The recycling center supplements Derry Township’s curbside recycling program. It offers an outlet for a variety of items not collected at the curb, such as corrugated cardboard; scrap metals; bulky items such as appliances, furniture, mattresses and box springs; household and automotive batteries; antifreeze; oil and oil filters; tires; computers, monitors and keyboards; and yard waste delivered by contractors. For some items, such as appliances requiring freon removal, the center charges a handling fee of up to \$25. Lesser fees are charged based on the cost of marketing 14 of the 28 items listed as accepted at the center. The center does not accept construction materials, demolition debris, or items determined to be contaminated or unusable.

The Township has cultivated local markets for all of the items accepted, except for some of the bulky items that require disposal; the cost for hauling and landfilling these items is the center’s largest expense. Scrap metals are marketed through one contractor, as are the oil/antifreeze and computers/peripherals. The center recycles several atypical items, including Styrofoam peanuts and polystyrene packaging, foam from sofa cushions, mattresses, fluorescent tubes and empty propane tanks. In the spring of 2003, the center began to collect tattered U.S. flags for proper retirement by the local VFW. A refurbished and specially decorated recycled mailbox, stationed outside of the center’s office, serves as the collection point for the flags.

Yard waste handling is another of the center’s unique features. Patrons who drive through the center may drop off yard waste after they exit the building. They may then proceed to an area where they can load mulch or finished compost produced at the adjacent composting site. Thus, residents can recycle, unload yard waste and pick up mulch and compost all in the same trip.

Derry Township operates “The Recycle Line,” 717 533-8665, to connect callers with the recycling center schedule, a complete list of materials accepted and information on the residential refuse collection program.

## **COMPLEMENT TO THE PRIVATE SECTOR PROGRAM — LACKAWANNA COUNTY**

Note: This information was accurate for the program until January 1, 2004. The program has been changed.

The Lackawanna County Recycling Center opened its doors in 1990, with funding from Lackawanna County and the Department. Besides being one of the first recycling centers in Pennsylvania, it is one of the busiest.

Each year, the center recycles nearly 20,000 tons of plastic and glass bottles, cans and various paper products from residents, municipalities, businesses and institutions in Lackawanna, Luzerne and other surrounding areas. The compost site accepts 12,000 tons of leaves, yard debris and shipping pallets, and produces high quality compost and mulch from these products. This material is available to anyone wishing to purchase the material. In fact, demand often exceeds supply for this valuable commodity. Local businesses are very happy to have a convenient place to take pallets and other recyclable materials. The Lackawanna County Recycling Center works hard to foster a cooperative spirit with local businesses rather than a competitive one. The center sorts and prepares materials to ship to market. The center’s access to rail transportation through the Lackawanna County Rail Authority makes it possible to ship recyclables, at a lower cost, as feedstock for industries worldwide. This link to rail transportation has helped to make recycling an economically viable industry in Northeast PA, creating hundreds of new jobs.

Over the years, the center has extended its available marketing tools by identifying a need to recycle materials that are not recycled by private sector businesses, such as glass bottles and jars which no one wants to accept, plastic bottles which are expensive to process and bale, and telephone books, magazines and unwanted mail. By providing this complement to the private sector activities, the county has enabled the municipalities and residents it serves to expand their recycling and waste reduction efforts.

## **CONTRACTUAL PROGRAM WITH REBATE — CITY OF PHILADELPHIA**

The City of Philadelphia traditionally used a bid process for materials collection and processing that was based on an index compiled from price indices published in waste periodicals. Under this scenario, the City simply accepted the bids and paid the cost — approximately \$48 per ton — without realizing any return on the sale of its materials.

Over the last few years, under the leadership of Recycling Coordinator David Robinson, the City expanded its options. A recycling facility, designed and constructed by Smurfit Stone Recycling and Blue Mountain Recycling, now serves the entire city. Under an agreement between Smurfit and Philadelphia, Smurfit pays the City \$32 to \$40 per ton for its paper, and the City pays Smurfit \$5 to \$10 for processing commingled materials. When the market for paper is high, the City benefits; when the market declines, Smurfit and the City share the loss.

Under this agreement, the City of Philadelphia realized approximately \$1 million last year in net revenue.

## **COST-EFFECTIVE RECYCLING PROGRAM — KUTZTOWN BOROUGH, BERKS COUNTY**

Norman Milnes, Superintendent of Transportation, Sanitation and Building and Grounds for the Borough of Kutztown, is the CEO behind an aggressive and effective recycling program. Norman oversees the day-to-day operations for refuse, curbside and drop-off recycling and yardwaste collections, among his other Borough duties. Under Norman's leadership, the cost of operating Kutztown's recycling program is less than the cost of refuse collection and disposal. Norman credits his collection and recycling crews as the champions behind the program's successes.

Kutztown provides full-service refuse and recycling collection for its residents and businesses. Refuse, which is collected twice weekly, is trucked directly to Colebrookdale landfill, 11 miles from the Borough. This provides an avoided cost incentive. Each ton of recyclables and yard waste diverted from disposal saves the Borough \$44.25 in landfill tipping fees. It also avoids transportation costs. Kutztown residents have a three-bag limit on refuse, with extra bags costing \$1 each. The Borough charges for collecting most bulky items; however, tires and appliances containing freon are not in the program.

Kutztown maintains a source-separated recycling program, providing up to four collection buckets to businesses and residents. Recyclables must be divided among the buckets: one bucket for each color of glass and a fourth bucket for aluminum and plastic. Newspaper, cardboard, junk mail and magazines are bundled or collected in paper bags. With source separation, contamination of materials and the mixing of broken glass are minimal. The Borough maintains this separation of materials throughout collection and stores the materials until market quantities are accumulated. Norman tracks commodity markets and strives to get the best prices for the Borough's materials. Businesses may opt to be serviced by private sector haulers, provided that the Borough receives annual recycling records to support its recycling performance grant applications. The performance grants help offset recycling program operational costs.

Kutztown provides curbside collection for yard waste, vacuum collection for leaves in the fall, and offers a wood chipping service for its residents. Leaves collected in the fall are land-applied by a local farmer.

The Borough's drop-off center for yard waste is open year-round, 24 hours a day. Residents and commercial landscapers place grass, leaves, trimmings and branches less than six feet in length into 30-yard roll-off containers. These materials are hauled away by Waste Management, Inc. for composting or mulching by Zwicky Processing and Recycling in Fleetwood, Berks. Co.

The Borough has strong code enforcement and education programs. It is making strides with the commercial sector "a little bit at a time," according to Norman. In addition to its businesses, the Borough services the recycling programs at Kutztown High School, Middle School and Grade School. The Borough's recycling education outreach includes utility bill stuffers sent to residents and businesses, local cable station programming and recycling instructions and schedules posted on the Borough's web site ([www.kutztownboro.org](http://www.kutztownboro.org)).

Kutztown Borough requires the operators of fairs and festivals to ensure that recycling is available to vendors and patrons. Norman informs the operators of the avoided disposal cost incentive, recycling requirements and suggested collection methods. The Borough further supports recycling by buying recycled plastic lumber picnic tables and benches for its parks and pool and by recycling oil and oil filters from its vehicle maintenance program.

## GRANT IMPLICATIONS — ALL PROJECTS

All of the above programs used Act 101 grant funding to establish, maintain, or upgrade their operations or equipment. The following chart shows the amounts each municipality received in Section 902 recycling program grants and Section 904 recycling performance grants from the time Act 101 was effected in 1988 through 2001.

Table #4

### Recycling Program & Performance Grants Received

Program	902 Total	902 Average	904
Centre County	\$6,556,767	\$819,596	\$1,513,428
Carlisle Borough	181,249	22,656	515,068
Cambria County*	3,202,906	400,363	*505,438
Derry Township	68,194	8,524	1,243,246
Kutztown Borough	147,683	29,536	102,277
Lebanon County	918,754	114,844	706,641
Lackawanna County**	5,826,954	728,369	**5,145,361
Philadelphia	\$13,079,287	\$1,634,911	\$10,206,592

\* Of this total, \$77,578 was granted to the county. The remainder went to the municipalities.

\*\* Of this total, \$19,838 was granted to the county. The remainder went to the municipalities.

# *Act 175 Recycling Program Plan*

## **APPENDIX 3**

### **STRATEGIC PLAN FOR MARKET DEVELOPMENT**

This plan is available as a pdf file.

[http://www.dep.state.pa.us/dep/subject/advoun/Recycle/2003/MarketDevelopmentStrategicPlan\\_Final.pdf](http://www.dep.state.pa.us/dep/subject/advoun/Recycle/2003/MarketDevelopmentStrategicPlan_Final.pdf)

# *Act 175 Recycling Program Plan*

## **APPENDIX 4**

### **SUPPLY AND DEMAND WORKPAPER**

This study is available as a pdf file.

[http://www.dep.state.pa.us/dep/deputate/airwaste/wm/recycle/Market/docs/Supply\\_and\\_Demand  
\\_Workpaper.pdf](http://www.dep.state.pa.us/dep/deputate/airwaste/wm/recycle/Market/docs/Supply_and_Demand_Workpaper.pdf)

# *Act 175 Recycling Program Plan*

## **APPENDIX 5**

### **U.S. RECYCLING ECONOMIC INFORMATION STUDY**

This study is available as a pdf file.

<http://www.epa.gov/jtr/econ/rei-rw/result.htm>

# Act 175 Recycling Program Plan

## APPENDIX 6

### NATIONAL RECYCLING COALITION ENVIRONMENTAL BENEFITS CALCULATOR

3/14

#### RECYCLING AND ENVIRONMENTAL BENEFITS IN PENNSYLVANIA

Base Year 2001

#### WASTE MANAGEMENT STATISTICS

Total Tons Recycled	3,045,043 Tons		
Total Tons Incinerated	1,393,700 Tons	17.8% of disposal	12.8% of generation
Total Tons Landfilled	6,443,056 Tons	82.2% of disposal	59.2% of generation
Total Tons Disposed	7,836,756 Tons		
Total Tons Generated	10,881,799 Tons		
<b>Recycling Rate</b>	<b>28.0%</b>		

#### REDUCTIONS IN GREENHOUSE GAS EMISSIONS THROUGH RECYCLING

Greenhouse Gas Emissions from Recycling	-2,165,851 Metric Tons of Carbon Equivalent
Greenhouse Gas Emissions if all Disposed	-118,460 Metric Tons of Carbon Equivalent
Net Greenhouse Gas Emissions	-2,047,391 Metric Tons of Carbon Equivalent
<b>Annual Equivalent Number of Cars off the Road</b>	<b>1,563,968 Cars off the road</b>

#### ENERGY SAVINGS FROM RECYCLING

Energy Use if All Recycled	-92,260,449 Million BTUs
Energy Use if All Disposed	-2,428,536 Million BTUs
Net Energy Use	-89,831,913 Million BTUs
<b>Annual Energy Savings in per Household Equivalent</b>	<b>889,425 Households' Energy Saved</b>

#### LIFE CYCLE STAGE COMPARISONS

Energy Used During Recycling Collection & Processing	1,716,075 Million BTUs
Energy Used During MSW Collection and Landfill	638,920 Million BTUs
Energy Used During MSW Collection, Processing & Incineration	2,228,030 Million BTUs
Energy Used for PA Avg. Mix of Landfill &	921,530 Million BTUs

Incineration	
Energy Saved During the Recycling Manufacturing Process	26,722,029 Million BTUs
Energy Generated During Incineration	11,682,825 Million BTUs

**REDUCED AIR EMISSIONS and WATERBORNE WASTES**

Reduced Air Emissions Due to Recycling	2,620,439 Tons
Reduced Waterborne Wastes Due to Recycling	9,251 Tons

**SELECT NATURAL RESOURCE SAVINGS - STEEL INDUSTRY**

Tons of Ferrous Steel Recycled	453,975 Tons
Pounds of Iron Ore Saved per Ton of Steel Recycled	2,500 Pounds
Pounds of Coal Saved per ton of Steel Recycled	1,400 Pounds
Pounds of Limestone Saved per Ton of Steel Recycled	120 Pounds
Total Tons Iron Ore Saved	567,469 Tons
Total Tons Coal Saved	317,783 Tons
Total Tons Limestone Saved	27,239 Tons
<b>Total Tons of Resources Saved</b>	<b>912,490 Tons of Resources Saved</b>

**NUMBER OF TREES SAVED FROM PAPER RECYCLING**

Tons of Groundwood Paper Recycled	502,432 (includes newspaper and mixed paper)
Number of Trees Saved	6,029,184 Trees
Tons to Freesheet Paper Recycled	60,229 (includes office paper)
Number of Trees Saved	1,445,496 Trees
<b>Total Number of Trees Saved</b>	<b>7,474,680 Trees Saved</b>

Source: National Recycling Coalition Recycling Environmental Benefits Calculator, January 2003

# *Act 175 Recycling Program Plan*

## **APPENDIX 7**

### **WASTE COMPOSITION STUDY EXECUTIVE SUMMARY**

This study is available as a pdf file

[http://www.dep.state.pa.us/dep/deputate/airwaste/wm/recycle/Waste\\_Comp/Exec\\_Sum.pdf](http://www.dep.state.pa.us/dep/deputate/airwaste/wm/recycle/Waste_Comp/Exec_Sum.pdf)