

**LOWER MILFORD TOWNSHIP
RECYCLING PROGRAM
DEVELOPMENT
FINAL REPORT**

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LOWER MILFORD TOWNSHIP

Background

Lower Milford Township (Township) is located in a rural (primarily agricultural) area of Lehigh County. The Township has a population of 3,617 people and hosts 1,277 households. The Township has requested assistance in developing a residential recycling program.

Introduction

Milford Township has requested technical assistance in developing a residential recycling program to meet the needs of a small agricultural community.

To determine the recycling goals and objectives of the Township, an initial meeting was held with the supervisors. It was discussed at the meeting that a drop-off recycling program would probably meet the Township's needs. However, the Township wished to review the pros and cons of various potential collection options and gain public comment prior to making a final decision.

The supervisors requested that a presentation of options be given at an advertised public meeting to inform the residents and gain public input.

Presentation of Options

Various options for collection of residential recyclables were presented at a public meeting of the Lower Milford Township Supervisors (See Attachment A Agenda). During the presentation, collection options were identified and pros and cons of each option were discussed as noted below. The residents in attendance actively participated presenting questions and input on various collection modes and potential materials for inclusion in the program. Processing, marketing, education and Act 101 Grant funding opportunities were also reviewed.

RECYCLING PROGRAM PROS AND CONS

VOLUNTARY RECYCLING PROGRAM

ADVANTAGES	DISADVANTAGES
Avoidance of Cost, Time and Effort for enforcing Ordinances	Lower Participation Rates
	Lack of Control over Participation Rates
	Requires Intense Education and Reinforcement

MANDATORY RECYCLING PROGRAM

ADVANTAGES	DISADVANTAGES
Higher Participation Rates	The Need to Adopt and Enforce Ordinances
Leverage to Increase Participation	Time and Effort Needed for Enforcement
Shows Municipal Commitment to Program	Cost of Collection

DROP-OFF CENTERS

ADVANTAGES	DISADVANTAGES
Not Labor Intensive (if not Staffed)	Low Participation Rate (Requires Additional Effort by Public)
Small Operating and Maintenance Costs	Lack of Quality Control (if not Staffed)
Can be available 24 hours per day, 7 days per week	Capital Costs (i.e. Purchasing of Collection Containers and Specialized Collection Vehicles)
Availability Even in Remote Regions	Vulnerable to Vandalism and Theft
Lower Capital Cost, Ease of Implementation	Increased Handling of Material (i.e. Transport to MRF or Market)
Easy to Collect more Categories of Materials	

REGIONAL DROP-OFF CENTER

ADVANTAGES	DISADVANTAGES
Reduced Transportation and Handling Cost to Market	Low participation Rates (Public Unwilling to Travel Far to Recycle)
Good Quality Control	Amount of Land (Space) Required
Services a Number of Communities	Capital Costs for Land, Equipment and Personnel
Avoids Duplication of Effort	May be Inconvenient to use from Remote Communities
	Requires Staff to Operate Center

CURBSIDE COLLECTION

ADVANTAGES	DISADVANTAGES
High Participation Rates (Easy For Homeowners)	Program Costs: a) Collection Costs b) Large Capital Investment (Special Collection Vehicles, Containers) c) Equipment Maintenance
Control Of Recyclables	Economic Deficiencies in Low Population Density Areas
Steady Flow of Recyclables	Extra Handling of Recyclables
Economic Effectiveness in High Density Areas	

PROCESSING OF MATERIALS

ADVANTAGES	DISADVANTAGES
Reduces Preparation of Materials at Source	Large Capital Investment; a) Cost of Building Construction b) Cost of Specialized Equipment for Processing
Central Control over Level of Separation, Resulting in Higher market Prices for Materials	Requires Hiring of Personnel for Operation, Management, Maintenance and Administration
Prepares Materials to Market Specifications, Resulting in Higher Market Prices for materials	Operation and Maintenance Cost

Based on lengthy discussions and consideration by the supervisors and public, it was determined that a drop-off program would best serve the Township.

Drop-Off Recycling Programs Parameters

As discussed at the public meeting on recycling the simplest type of permanent collection recycling program is built around the use of a drop-off center where residents bring their source separated materials. Drop-off programs are easy to implement and relatively inexpensive. The major cost factor for drop-off sites include cost of equipment, labor and transport of materials to markets. The following describes the general requirements for establishment and operation of a drop-off site.

Operations

Drop-off centers can operate in one of two (2) modes: manned or unmanned.

Manned

Manned drop-off sites offer the advantage of having personnel available, on either a paid or volunteer basis, to assist in unloading and handling materials and to educate participants to insure necessary quality control is maintained. In addition, attendants have the opportunity to reinforce the importance of the program to participants.

Unmanned

Unmanned drop-off sites offer the advantage of minimal overhead and coordination expenses. They can operate on a 24-hour basis. A disadvantage is they provide little opportunity for quality assurance/control and there is no assistance available for residents.

Location

One of the most important aspect of a drop-off site is its location. The drop-off site must be conveniently located, and be easily accessible. Such facilities are normally located at a shopping mall, supermarket or municipal building. Given the fact that the Township does not contain a shopping mall or supermarket, the logical site is the Township Building.

Weather Protection

Newspaper, mixed paper and corrugated must be protected from the wind, rain and snow. Plastic and aluminum containers must be protected from the wind. This is so that the newsprint does not become wet, diminishing its value, or blow away and so that the plastic containers and aluminum cans don't blow away creating a litter problem.

Storage Space

The area for materials collection should be large enough to accommodate the various storage containers. Storage containers can range from 55-gallon drums to 6 to 8 yard dumpsters to 30 – 56 yard roll-off containers. Space requirements differ depending on equipment chosen and method of pickup and delivery.

Access

Access is extremely important and should not be overlooked when siting and designing a facility. For example, if roll-off containers are used an ample area for truck maneuverability is required. Participant traffic flow is also important to site development. Ease of access to the site is essential.

Appearance

Ascetics and cleanliness of the site are important for the following reasons:

- Residents will be more likely to use a site if it is attractive and clean.
- If the site appears to be a trash transfer station it will get trashed.
- Containers should be clearly marked, easily distinguishable as recycling collection containers and well maintained.

Security

Vandalism and illegal dumping is greatest at unmanned sites that are open 24 hours per day. Steps can be taken to mitigate these potential problems. For example, good lighting will discourage misuse, locked containers for aluminum cans can reduce theft, metal bins for newspaper can reduce or at least limit damage from fires, fencing of the site with a locking gate can alleviate vandalism. Security cameras are a major deterrent to misuse of a site. Manned centers opened on a scheduled basis generally experience little if any vandalism or illegal dumping.

Estimate of Recyclable Materials

Table 1 provides estimates of the recyclables available in the Township's municipal waste stream. The estimates are based on discussion with the County Recycling Coordinator and experience with similar types of municipalities in the region.

Table 1
Estimated Recyclable Materials in Waste Stream

Material	Percent MSW	Tons in MSW
Newsprint	10.0%	289
Corrugated Paper	9.0%	260
Office Paper	4.0%	116
Glass (Clear,Brown,Green)	9.0%	260
Plastic (PET, HDPE only)	3.0%	87
Steel & Bimetal Cans	2.0%	58
Aluminum Cans	1.0%	29
Yard Waste	11.0%	318
TOTALS	49%	1,417

Note: Estimates are based on a generally accepted figure of .8 tons of waste being generated per person per year.

Market Economics

The primary determining factors in selecting materials to be included in a collection program are markets. Markets include intermediate processors and end markets. Intermediate markets are entities that process materials to end market specification e.g.: separating glass by color and crushing it to meet (end market) specifications of glass container manufactures. End markets are entities that close the loop on recycling: end markets accept materials and reprocess them into new items e.g. a paper mill accepts post consumer paper and reprocesses it into paper products.

The recyclable materials market place is extremely volatile. As with other commodities, prices for materials rise and fall based on industry demand for that given material at a given point in time. Proximity to markets is also important; transporting materials to distant markets can prove to be cost prohibitive.

Markets may pay for materials, charge for accepting them or accept them at no cost. The economics of a recycling program are multifaceted. The equation goes beyond a normal business type of accounting which would consider cost of collection of materials + cost to deliver to market +/- market value = profit (loss).

$$\text{cost of collection (C) + cost to deliver to market (D) +/- market value} \\ = \text{profit (loss)}$$

The following cost are assumed for discussion purposes:

$$\begin{aligned} \text{(C) Collection} &= \$5.00/\text{ton} \\ \text{(D) Delivery} &= \$5.00/\text{ton} \\ \text{(M) Market Value} &= \$ 0.00/\text{ton} \end{aligned}$$

Business Equation

$$(C) \$5.00 + (D) \$5.00 +/- (M) \$ 0.00 = (-\$2.00) \text{ profit (loss)}$$

Additional factors must be included in the economic equation for recycling. Consider the following:

Other factors, which must be included in the recycling equation are: avoided cost of disposal, Act 101 Section 902 Awards and the value of saving natural resources. Avoided cost of disposal (A) is the total cost savings enjoyed by recycling material rather than collecting it as waste and paying to dispose of it at a landfill (A) = (collecting cost + landfill tip fee). Assume (A) = \$60.00/ton. Act 102 Section 904 Grants (G) are paid to municipalities as an incentive to recycle. Under this grant program, a municipality receives \$5.00 per ton for each ton of material recycled and \$1.00 additional for each percent of the waste stream diverted \$5.00/ton recycled. Assume 2% diversion or \$2.00 per ton (G) = \$7.00. Saving of natural resources cannot be calculated by this generation but will be by future generations.

(A) Avoided Cost = \$60.00/ton

(G) 904 Grant = \$7.00/ton

Recycling Equation

$$(C) \$5.00 + (D) \$5.00 - (A) \$60.00 + (G) \$7.00 + M \$0.00 = \$47.00/\text{ton (actual value to community)}$$

Understanding the relationship markets and the true value of recycling is imperative when determining the feasibility of a recycling program.

Identified Markets

Table 2 list primary markets for recyclables within less than a fifty-mile radius of the Township.

Table 2 Markets

1. Liberty Recycling

Allentown, PA

Telephone (610) 433-0129

<u>Material</u>	<u>Price</u>
Newspaper	\$20.00/ton
Corrugated	\$10.00/ton
Aluminum	\$700.00/ton
Tin/Bimetal	\$ 0.00/ton
Glass (separated by color)	\$ 0.00/ton

Will rent containers for collection and pickup materials.

4 to 6 yard \$50.00/month

30 50 56 yard \$100.00/month

2. Todd Heller

Northampton, PA

Telephone (610) 262-6988

<u>Material</u>	<u>Price</u>
Newspaper	\$0.00/ton
Corrugated	\$0.00/ton
Aluminum	\$640.00/ton
Tin/Bimetal	\$0.00/ton
Clear Glass	\$25.00/ton
Green Glass	\$10.00/ton
Brown Glass	\$15.00/ton

Note: Material must be delivered to market.

3. Coughes Recycling Inc.

Hamburg, PA

Telephone (610) 562-8336

Coughes recycling provides collection containers 4 – 8 yard dumpster type or 40 yard roll-offs. Coughes accepts commingled materials (glass all colors, tin and bimetal cans, aluminum cans, plastics (#1 and #2), mixed paper and corrugated are accepted commingled i.e.: mixed magazines, newspapers, office paper and corrugated.

Rental of equipment, pickup and marketing of materials are on a contract basis. (Attachment B contains a copy of a standard contract).

Act 101
Section 902 and 904 Grant Funding

Section 902

Under Section 902, the Township is eligible to receive 90% funding for its recycling efforts. The following items are grant eligible:

- Planning and implementation for the program.
- Siting of a center.
- Public notices and public education/information and promotion.
- Equipment i.e.; containers for collection of recyclables at the site (dumpsters, roll-off, etc.), containers for residents to store and transport their recyclables.
- Site security including fencing, lighting and security cameras.

The Township should contact the County Recycling Coordinator, Mr. Kurt Fennstermacher (610-782-3046) to discuss opportunities to work with the County to achieve their goals, to gain a copy of a grant application and assistance in its preparation. A meeting with PADEP Regional Recycling Specialist, Mr. Chris Fritz (570- 826-2516) will also be required prior to submission of the application.

Applications for Section 902 funding will be accepted through June 26, 2003. Future Grant rounds will be announced by PADEP.

Section 904

Section 904 Grants or Performance Grants are also available to the Township. This Grant as previously noted, is based on the amount of material recycled and the percentage of materials diverted from the Township's waste stream.

The Township is eligible to receive \$5.00 for each ton of material recycled by its program. Also, for each percent of the waste stream, which is diverted, the Township will receive an additional \$1.00/ton. Funding is provided under this Grant program is discretionary and can be used to defray recycling program cost or any other need of the Township.

Conclusions and Observations

- Based on public input provided at meetings and presentations, residents are supportive of the establishment of a drop-off recycling program.

- Markets identified offer a variety of marketing options to the Township e.g.; outlets exist for segregated materials and commingled streams, material can be delivered to market or collected at the drop-off by the market, and services can be secured on a non-contracted or contracted basis.
- Location of a drop-off site at the municipal building appears to be best suited for the Township.
- A comprehensive effort must be made to inform and educate residents regarding the program prior to and on a regular basis during operation of the recycling program. An education/information program is detailed in Attachment C for the Township's consideration.

Recommendations

It is recommended that:

- The Township consider the development of a drop-off recycling program to service its residents.
- The Township meet with the County Recycling Coordinator to explore what assistance the County can provide in development of its program and what expanded recycling opportunities may be available through the County.
- The Township initiate a comprehensive public education and information program.
- A public private partnership be considered for its recycling program. That is; the Township develops the site, purchases collection containers (with grant assistance) and operates the site Collection and marketing of materials are done by the private sector market. A contract arrangement is preferred if this option is selected.
- The Township apply for a Section 902 Grant for project development, collection equipment and educational and promotion efforts.
- Detailed records of materials marketed are kept to allow the Township to apply for Section 902 funding.

ATTACHMENT A

AGENDA

ATTACHMENT A

AGENDA

DISCUSSION OF RECYCLING OPTIONS

- **Discussion of Goals and Objections**
- **Program Options**
 - Curbside (Municipal – Private)
 - Drop-off (With Attendant – Without)
 - Mandatory
 - Voluntary
- **Program Development**
 - Types of Materials
 - Processing
 - Marketing of Materials
 - Information – Education
 - Act 101 Grants
 - Consideration of County Wide Program

ATTACHMENT B
STANDARD CONTRACT

Note: Contract available upon request.

ATTACHMENT C
EDUCATION/INFORMATION PROGRAM

Public Information/Education

Implementation of a comprehensive education and information campaign will help insure the program is successful initially and over the long run. The following are suggested components for developing an education and information program that will gain public interest and increase enthusiasm and support. The components are applicable to recycling and/or leaf and yard waste composting programs.

- Place an ad in a paper of general circulation providing details of the program and its merits, suggest this be done twice per year. If a new program is to be initiated place at least one ad 30 days prior to initiation.
- Prepare and distribute news releases and public service announcements to the local media. Provide program details, program kick off date and importance of the program e.g.: waste stream reduction, saving on disposal fees, saving/reuse of valuable resource, reduction of dependence on disposal facilities and, of course, it's the law (for mandatory programs).
- Development of a slogan e.g.: send your leaves to a mulch better place; recycle today for a better tomorrow. Slogans help with program identity and purpose.
- Develop a logo representing the program that will be readily identifiable. The logo can act as a constant reminder (particularly if its placed on a refrigerator magnet or calendar).
- Prepare an instructional flier, door hanger or brochure, one that is eye catching and to the point: (i.e.: who, what, where, when and why). The flier, door hanger or brochure could be distributed by volunteers or sent with Newsletter, utility or tax bills to save on mailings. Additional brochures (and posters) could be placed in public buildings and local businesses.
- A banner or banners can help publicize the program. A banner could be used at the beginning of leaf collection, and a second banner used for grass collection (the programs first month). A banner could also be used for recycling re-enforcement (e.g.: a reminder used for earth day and other events). These banners could be used repeatedly season after season.
- Distribute promotional items that encourage participation, (e.g.: a refrigerator magnet collection calendar, pencils, pens, rulers made from recycled materials). Items that are seen or used regularly and will act as a constant reminder.
- Preparation of a recycling display outlining the programs benefits, charting participation and avoided cost of disposal, etc. The display could be placed in the Municipal Building and used at various civic events.

- Incentive programs for participation, that is: rewarding households who participate. Conduct a random drawing and if the selected household has participated (set out its recyclables on a given day) a prize is awarded or a certificate or recognition.
- Encourage and assist schools to provide for recycling/composting education programs. Youth “will” be constant reminders to adults regarding recycling and composting often our best educators of adults.