

Sadsbury Township Recycling Program Establishment

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SWANA/PADEP Technical Assistance Program

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1.0 Background

Sadsbury Township (Township) is located in Chester County. The Township has an estimated population of 2,582 persons as per the 2000 census. The estimated number of households is 946. The Township had previously operated a drop-off recycling program. The program was discontinued in 1994 due to cost of operations.

2.0 Current Situation

The Township has a contract with BFI to provide its 946 households with curbside collection of municipal waste. The Township is in year three of a five-year contract with BFI. The Township is interested in assessing its options for the development of a residential recycling program. The goal of the Township is to reduce its waste stream by diverting valuable resources via recycling. It is the Townships intent to pursue a least cost alternative to accomplish this goal.

3.0 Estimate of Recyclable Materials

The annual per capita municipal waste generation rate for the Township is estimated to be .75 tons. This generation rate is based on data provided by the Township and information provided by BFI. Assuming a population of 2,582 persons and an annual per capita waste generation rate of .75 tons, it is estimated that the Township generates approximately 1,937 tons of municipal waste annually.

Table 1 provides an estimate of the percent of recyclables available in the Township's waste stream based on DEP, EPA and in-house information. Table 1 also provides the corresponding estimated tonnage of recyclable material available, based on 1,937 tons of MSW generated annually.

Table 1
Estimated Recyclable Materials in Municipal Waste Stream

<u>Material</u>	<u>Percent of MSW</u>	<u>Tons in MSW</u>
Newsprint	8.5%	165
Corrugated Paper	9.0%	174
Office Paper	5.0%	97
Glass (Clear, Brown, Green)	7.0%	136
Plastic (PET, HDPE only)	1.8%	35
Steel & Bimetal Cans	2.0%	39
Aluminum Cans	.9%	17
TOTAL	34.2%	663

The actual amount of recyclable material captured/diverted from the Township's waste stream will depend on the various program options selected to establish its recycling program. Selection of components that will make-up a recycling program/system is somewhat like ordering a meal in an oriental restaurant. The restaurant menu affords the opportunity to select all items from column A or column B or to select two items from A and one or more from B, if so desired. A recycling program should be structured to meet the desired goals and objectives established by the sponsoring municipality.

4.0 Program Options

Discussed below are the various options available for developing and operating a recycling program.

4.1 Overview

An initial meeting was held with representatives of the Township to discuss the primary options available for collection of residential recyclables. The advantages and disadvantages to various types of collection practices were also discussed.

Table 2 outlines the comparative advantages and disadvantages of drop-off vs. curbside collection and mandatory vs. voluntary participation. The potential advantages of a multi-municipal program were also reviewed at the meeting. A multi-municipal recycling program generally avoids duplication of efforts and provides costs savings as a result of economy of scale.

The committee expressed interest in a multi-municipal approach to recycling and invited neighboring municipalities to a meeting. The meeting's purpose was to gain insight from those municipalities currently operating a recycling program and to discuss the potential for developing or the Township joining a multi-municipal recycling program. One of the municipal representatives who attended the meeting discussed the Southeastern Chester County Solid Waste Authority (SECCRA) cooperative recycling program. SECCRA provides recycling collection trailers and marketing services to a number of its member municipalities. SECCRA also services ten drop-off recycling sites within its service area. Sadsbury Township is not located in the SECCRA service area and therefore could not participate in its recycling program. Neighboring communities, which were not in the SECCRA service area, expressed no interest in a multi-municipal recycling program.

Table 2 Primary Options

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

ADVANTAGES	DISADVANTAGES
Ease of Implementation	Low Participation Rates (Requires Additional Effort by Public)
Lower Overall Cost (Small Operating and Maintenance Costs)	Lack of Quality Control (If not Staffed and Gated)
Can Be Available 24 Hours Per Day, 7 Days Per Week	Capital Costs (Site, Equipment and Personnel)
Availability Even in Remote Regions	Vulnerable to Vandalism and Theft
Not Labor Intensive	Increased Handling of Material
Easy to Collect More Categories of Materials	Requires Intense Education and Reinforcement

CURBSIDE COLLECTION

ADVANTAGES	DISADVANTAGES
High Participation Rates (Easy for Residents)	Program Costs: a) Collection Costs b) Large Capital Investment (Special Collection Vehicles, Residential Containers) c) Equipment Maintenance
Increased Quality Control of Recyclables	Economic Deficiencies in Low Population Density Areas
Steady Flow of Recyclables	Labor Intensive

4.2 Discussion of Options

Recycling programs are as unique as the municipalities that establish them. No template exists for the perfect recycling program. A variety of recycling program options is available to the Township. Understanding the various options available and program development and implementation issues will allow the Township to make an informed decision as to what type of a program will best serve its residents.

The following is a listing of program options and development considerations.

4.2.1 Commingle vs. Source Separated

Selection of source separated (single stream) or commingled collection of materials (drop-off or curbside) is dependent on several factors. From an economic perspective source separated materials generally maintain a higher market value. However, with the exception of aluminum cans, historically recyclable materials have experienced great fluctuations in market value. Newspaper has over the past ten years seen market highs of greater than \$60.00 per ton and lows in excess of negative -\$20.00 per ton.

Source separated material requires a greater level of effort on behalf of program participants. The recyclable materials must be either stored in separate containers by the residents, taking up time and space, or commingled in one container and separated at the curb by the collector or at the drop-offsite by residents, municipal personnel or volunteers.

Additional efforts required by residents to prepare, store, handle and/or transport materials will negatively affect participation resulting in less material being collected.

Materials that are commingled (mixed in one container) are convenient for the participating residents and less storage area is required. Less educational efforts are required relative to material preparation. Due to the relative ease of preparation and delivery to the curb or the drop-off site, commingled programs generally enjoy higher participation rates resulting in greater diversion of recyclables from the waste stream.

4.3 Drop-off Programs

Drop-off programs have been implemented in many municipalities as the primary method of recovering residential recyclables. Drop-off programs are also frequently used to supplement curbside programs. The greatest advantage of drop-off recycling programs is that the overall cost is usually substantially less than for curbside collection programs. Drop-off programs also offer the advantage of providing for collection of a greater variety of materials, particularly those not readily included in curbside programs (e.g.: batteries, waste oil,

clothing). A major disadvantage to drop off programs is the inconvenience imposed on residents. Recovery rates for drop off programs are generally substantially lower than curbside programs due to the inconvenience.

4.3.1 Drop-off Program Parameters

The following describes the parameters for development and operation of a drop-off recycling program.

Manned vs. Unmanned

Drop-off recycling sites can operate in one of two modes: manned or unmanned.

Manned

Manned drop-off sites offer the advantage of having personnel available, to monitor the site. These personnel assist residents, inspect incoming materials and help educate participants to insure necessary quality control is maintained. Site monitors have the opportunity to reinforce the importance of the program to participants.

Small municipalities that have limited personnel and/or budgets often find it difficult or impossible to assign existing or hire additional personnel to monitor or service a drop-off site.

To reduce manpower cost, volunteers can act as monitors or operate a drop-off site. However, many municipalities have found that volunteers often lose enthusiasm over time and are not as reliable as paid personnel. Reliability is a very important factor in maintaining program consistency. That is, if the site is scheduled to be open on Monday 1:00 PM to 5:00 PM it must be open. If a site is closed and the gate is locked residents may leave their recyclables at the gate. Potentially this situation could cause a litter problem or the elements (snow or rain) could render paper products unmarketable. This situation, if repeated, will negatively impact participation. Additionally, volunteer organizations normally operate a drop-off recycling site to raise funds for their organization or cause. During unfavorable market conditions volunteers have been known to suddenly abandon the operation.

Unmanned

Unmanned drop-off sites offer the advantage of minimal overhead for personnel costs and/or coordination of volunteer efforts. The drop-off site can be available to residents on a seven day, twenty-four-hour basis. Unmanned sites provide little opportunity for quality assurance/control and there is no assistance available for residents. This type of operation can result in lower participation rates, increased vandalism and misuse of the site.

Site Development

This section describes the various aspects involved with the location, design and development.

Location

One of the most important aspects to consider in developing a drop-off site is location. The drop-off site must be conveniently located, and easily accessible. Such facilities are normally located at a shopping mall, supermarket, church, or municipal building. Busy, high traffic areas are also well suited to a drop-off site. A site's location will have an effect on participation.

Access

Access is extremely important and should not be overlooked when siting and designing a drop-off site. For example, if forty-yard roll-off containers are used for collection of recyclables an ample area for truck maneuverability is required. Ease of access to the site is essential. Convenient parking spaces (at a minimum five or six) will be needed.

Weather Protection

Newspaper, mixed paper and corrugated cardboard must be protected from the wind, rain and snow. Containers maintained under roof, with lids will prevent paper products from getting wet. Wet newspaper, cardboard or other paper products will diminish in value or worse case, require costly disposal. Properly designed collection containers will prevent light materials (e.g. paper, plastics) from blowing around or off-site causing litter problems. Covered drive thru designs places the collection containers and participants under roof and protected from the elements.

Size

The area designated for materials collection should be large enough to easily accommodate collection containers for recyclables. Collection containers are available in a variety of shapes and sizes. Collection containers range from those that are specially designed for segregated materials to six to eight yard dumpster type, to forty yard roll-off containers. The site's configuration, access, collection practices, along with a variety of other factors will impact size requirements. The average area required for a drop-off site, to service small populations; ranges from approximately 3,000 to 4,000 square feet.

Appearance

Site ascetics and cleanliness are important; residents will be more likely to use a site if it is attractive and clean. If the site appears to be a municipal waste transfer station it will receive waste. Containers should be clearly marked e.g.: aluminum cans only, newspapers only or commingled material. The collection containers should be easily distinguishable as recycling collection containers and to the extent practical, attractive.

Security

As previously discussed vandalism and illegal dumping occurs most often at unmanned sites that are open twenty-four hours per day. Steps can be taken to mitigate these potential problems. Fencing the site, a locking access gate, and good lighting will discourage misuse of the drop-off site. Metal bins for newspaper can reduce or at least limit damage from fires. Security cameras are a major deterrent to misuse of a site. Manned sites opened on a scheduled basis generally experience little, if any, vandalism or illegal dumping.

Drop –Off Site Operation

The Township has choices with regards to drop-off site operations, operate the site with its personnel or have a private contractor operate the site. Operation of the site can be done entirely by the Township or by a private contractor. Few municipalities opt for private contractors to operate and maintain the site due to cost. Many municipalities favor a public/private sector partnership arrangement.

Usually under a public/private sector arrangement the municipality provides the containers for collection of recyclables, and conducts the education program. The private contractor provides transport and marketing services for the recyclables collected. Collection containers, when full, are removed and transported to market (pull or pulled). A charge is assessed per pull and/or per mile transported. A credit or debit is usually assessed based on the market value of the recyclable materials.

Services provided by a private contractor can be on a contract basis. The Township should consider a contract if it determines it is in its best interest to engage the services of a contractor. A contract will define the responsibilities of both parties and provide certain guarantees regarding services rendered. Often a contract can be negotiated with lower service rates than those quoted.

4.4 Curbside Programs

Curbside programs originated with separate collection of MSW and recyclables, with source-separation of recyclables at the curb and collection by multi-compartment recycling trucks. Curbside sorting allowed for a high level of visual

inspection, providing for a high quality of recovered materials. However, curbside collection of source-separated recyclables was generally a high-cost, low-efficiency program.

The collection of commingled recyclables separately from MSW is the most common collection method for recyclables. Typical programs include collection of commingled recyclables (tin cans, aluminum cans, glass containers and plastic) mixed in one container.

Separate collection requires homeowners to separate recyclables from MSW, with paper typically segregated at the curb from commingled containers. Recyclables are commonly placed at the curb in a recycling container and collected in a dual-compartment recycling truck (e.g., separate compartments for commingled materials and paper).

This collection method generally achieves a balance between convenience for the homeowner and collection efficiency. When implemented with manual collection vehicles, visual inspection at the curb can assist in providing a high quality of recovered materials. Materials collected generally undergo processing to enhance market value or are delivered to an intermediate or final market.

Program Operation Curbside Collection

(a) Municipal Collection

The Township will purchase collection equipment and maintain the equipment. It will also be responsible for administration, labor, public education, and marketing of materials. Traditionally, large municipalities and smaller densely populated ones have provided this type of public collection services. These municipalities most often provide public collection of residential MSW also. These programs are well established and have for the most part operated for numerous years. In recent years, however, increasing numbers of municipalities have opted to procure private sector services for collection of MSW and/or recyclables. The primary reason for this shift to private sector operation or contracted services is cost savings.

(b) Private Sector Collection

This process usually entails preparation of a procurement document commonly known as a Request for Proposal (RFP). The document provides a detailed description of the services being requested, background information, requirements for responses, bid requirements and general contract terms. Upon review of the responses, the municipality will negotiate a contract for curbside collection and marketing of recyclables with the lowest qualified bidder. A number of recent comparative analyses have shown that lower cost can be achieved under a contact system vs. municipal collection.

5.0 Education/Outreach Program Outline And Schedule

The following is a detailed outline for developing and instituting a public education/outreach program to initiate the planned recycling program.

Getting Started

Start out with educational material that creates a positive (get involved) attitude by portraying individual participation as the key to a successful recycling program. The message should briefly and concisely answer the following questions:

1. Why recycle?

By recycling, you:

- Reduce dependence on waste disposal facilities.
- Reduce the waste stream.
- Close the loop on recycling (post consumer materials are reprocessed into new items).
- Save valuable natural resources (which happen to belong to future generations).
- Save energy.
- Reduce air and water pollution.

2. Who will be recycling?

All conscientious residents, good citizens, and decent individuals.

3. What is going to be recycled?

List materials to be recycled.

4. How are recyclables prepared?

- Commingled or single stream or a combination.
- Rinse bottles and containers.
- Bundle newspapers or place in paper bags.

5. When?

Dates and times a drop-off site will be open or curbside collection will take place.

Delivery of Containers Along With An Instructional Brochure Collection Container

Residential recyclables collection containers are suggested. These containers should be distributed to all participating households well in advance of program start-up usually two or three weeks. The containers will generate much enthusiasm as well as many questions. Containers should be imprinted with the Township's name, and recycling logo. The containers assist in demonstrating commitment on the part of Township.'

Brochure

The following is a list of items suggested to be included in an instructional brochure:

- An introduction explaining the intent of the program.
- The goals of the program.
- Why you, the individual are important to the success of the program.
- The environmental and practical reasons for recycling.
- Required preparation of materials.
- Questions usually asked and answers.
- A schedule or calendar marked to indicate when the recycling drop-off site would be open and it's hours of operation or when curbside collection will occur.
- The name and telephone number of a person to contact if questions or problems arise.

Media Contact

Media should be contacted well in advance of program kick-off (six to eight weeks).

Newspaper

Newspaper coverage should begin prior to the initiation of the program six to eight weeks. The Township providing well-written news releases covering the start-up and progress of the recycling program should assist local papers. Start with a theme "recycling is coming", then "kick-off celebration planned" then coverage of the kick-off.

The first step in establishing rapport with the local newspaper(s) is to make personal contact with the Editor. This should be done before making an official announcement at a public meeting. The newspaper should be supplied with a fact sheet and press release prior to the planned public meeting clearly outlining the essentials of the program.

Press releases should follow a specific format. News releases should be double-spaced with generous margins (even though we wish to conserve). Short paragraphs are recommended to avoid losing the reader's interest. All facts should be placed in order of descending importance, since an editor is likely to cut from the bottom up.

The release should be written in an enthusiastic, informative style with all the facts (who, what, where, why, when and how) communicated in the first paragraph. Photographs showing the recycling drop-off site or the people involved with the recycling program should be included, if possible.

Periodically inform the newspaper of the progress of the recycling program, including personal calls about the amount of material collected and the percentage of participation or diversion achieved. The newspaper should be requested to include an item in the issue just before collection days reminding people to prepare and/or deliver their recyclables.

Television

Local television stations have requirements for Public Service Announcements (PSA's) as well as the possibility of having a recycling representative on a discussion program should be investigated. Many stations managers will work along with a group in designing inexpensive PSA's.

Radio

Radio stations are also required to air PSA's and public interest talk shows. The Townships should contact radio station managers or news editors to see if the stations will air ten to thirty second PSA's about the recycling program. It is effective to have local personalities, such as the County Recycling Coordinator, tape the PSA's.

Newsletter

Community newsletters or bulletins are often read by an organization's members and can reach residents who are most likely to participate in a recycling program. Church bulletins and civic clubs can help promote recycling. Recycling information could include special events achievements and/or student activities (a poster contest prior to program initiation).

Program Kick-Off

Do a ribbon cutting, have noted speakers from environmental groups, or clergy, have children play a roll in the celebration, perhaps award a prize for a winning recycling poster. Get people enthused.

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6.0 Grant Funding Available !

There are two grant programs under Act 101 that are available to recycling projects: these are the Section 902 Recycling Program and Section 904 Performance grant programs.

Section 902 Recycling Grant

Under Section 902, a municipality is eligible to receive up to 90% funding for eligible costs. The following items are grant eligible:

Planning and implementation efforts required to establish a collection program.

Development of a drop-off site.

Public education/outreach campaign and promotional items (brochures, calendars, banners, displays, etc.).

Containers and equipment required for operation of a drop-off site or curbside collection system.

The Township should contact the Chester County Recycling Coordinator to discuss the application process and to assist them in preparation of an application. A pre-submission meeting with the PADEP Region Recycling Specialist is required prior to submission of an application.

Section 904 Grant

A Section 904 Performance Grant is also available to the Township. The grant is based on the annual amount of material recycled and the percentage of materials diverted from the Township MSW stream.

The Township is eligible to receive \$5.00 for each ton of material recycled by its program. Also, for each percent of the MSW stream diverted the Township will receive an additional \$1.00 per ton. Funding provided under this program is discretionary and can be used to defray recycling program cost or any other needs of the Township. Detailed information regarding preparation and

submission of a Section 902 and/or 904 application is available online at www.dep.state.pa.us.

7.0 Conclusions !

The following observations and conclusions are provided for the Township's consideration.

The Township has many viable options available to it for the establishment of an economical recycling program.

A drop-off recycling program is considered to be the least cost option for the Township.

Curbside collection of recyclables will provide higher program participation resulting in a greater percentage of recyclable material being captured.

A comprehensive education/outreach program will be needed regardless of the recycling program selected.

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8.0 Recommendations !

If the Township decides to pursue the least cost option, establishment of a drop-off recycling program, it is recommended that ,at a minimum:

the drop-off site be fenced and gated;

and the site is manned, at least, during the first few months of operation.

It is recommended that the Township entertain the possibility of contracting for residential curbside collection of recyclables with its current MSW collector. Considering that the Township has two remaining years on its MSW Collection contract with BFI, it could be advantageous to negotiate a price for curbside collection of recyclables. BFI provided an estimated range of costs of \$3.50 to \$4.50 per household for a weekly (once a week) collection of recyclables. If collection is provided once every other week, monthly cost for services will be less. Negotiations may provide a lower cost than those quoted. !

Prior to deciding on a course of action, it is recommended that the Township seek public input by conducting a survey of its residents to determine the type of recyclable collection program preferred, curbside or drop-off. It is suggested that

