December 29, 2005

R·W·BECK

Mr. Eric Hamby
County Recycling Coordinator and Solid Waste Manager
Susquehanna County Solid Waste and Recycling
P.O. Box 218
Montrose, Pennsylvania 18801

Subject: **Promoting Commercial and Institutional Recycling in Susquehanna County**

Dear Mr. Hamby:

Susquehanna County has requested assistance in encouraging businesses and institutions in the County to increase recycling. This letter report serves to provide the County with R.W. Beck's recommendations for the implementation and education efforts necessary to support a voluntary commercial recycling program. . This effort was undertaken as part of the Recycling Technical Assistance program sponsored by the Pennsylvania Department of Environmental Protection (DEP) and the Solid Waste Association of North America (SWANA). The report is divided into the following sections, which follow the tasks in the scope of work:

■   Description of County's existing commercial solid waste/recycling infrastructure;

■   Identification of major businesses and types of businesses in the County;

■   Development of Commercial Recycling "Toolbox;" including:

- ■   Commercial recycling survey; (Attachment A);

- ■   Commercial waste audit/recycling implementation guide (Attachment B);

- ■   Commercial recycling tri-fold brochure (Attachment C); and

- ■   Commercial/institutional recycling fact sheets (10), (Attachment D); and

■   Strategies and recommendations for promoting commercial recycling.

In addition, R.W. Beck staff conducted on-site training for Susquehanna County in conducting commercial waste audits.

Description of Susquehanna County's Existing Commercial Solid Waste and Recycling Infrastructure

Private Haulers

The forty-one (41) municipalities within Susquehanna County do not meet the requirements set out in the Municipal Waste Planning, Recycling and Waste Reduction Act of 1988 (Act 101). Therefore, the County and its municipalities are not required to include mandatory recycling for all commercial and institutional establishments. Businesses and institutions hire their own haulers for the collection of trash and recyclables. Typically haulers charge a per-pull fee each

time they empty a dumpster or remove a compactor, as well as a per-ton fee for the disposal of the refuse being collected. Generally haulers have different routes for businesses than they do for residential customers, as collection equipment is geared for dumpsters and/or compactors. Some haulers serve residential and commercial customers, whereas others focus on one type of customer, such as business, residential, or in some cases strictly roll-off containers, which are commonly used for construction and demolition projects. In Susquehanna County some haulers are known to be offering recycling services, however not all haulers do, most likely, as it is not mandatory. The County does not know the extent to which commercial/institutional entities are participating in any offered programs.   While commercial recycling may be offered to businesses through private haulers, who are licensed by the County to provide solid waste collection services, The County is unclear as to how many businesses actually participate in a recycling program. Hauler licensing requirements in the County stipulate that haulers who collect MSW must also provide recycling collection services upon request (generally haulers charge additional fees to do so). In addition, recycling collection can not be more costly than MSW collection.   Since the County does not require the licensed haulers to provide a list of businesses they service or tonnage reports on solid waste collected from those businesses, it is not currently possible to determine actual commercial sector recycling participation. Although open burning of MSW is not legal for commercial establishments in Pennsylvania, it is believed that some businesses still opt to burn a portion of their waste, rather than pay for it to be disposed or recycled, or deliver the recyclable portion to the County recycling center.

Drop-Off Recycling

Although the County does not have a mandatory recycling program, it does provide an outlet for those businesses wishing to recycle through the Susquehanna County Recycling Center – a County-wide drop-off center open to businesses and residents of the County. The following materials are accepted at the drop-off center:

- Glass containers (clear, brown and green);

- Cardboard;

- Mixed paper,

- Metal food cans;

- Aluminum cans,

- PET (#1) plastic bottles; and

- HDPE (#2) plastic bottles.

The recycling center is available for drop-off 24 hours per day, seven days each week. The recycling center office is open Monday through Friday from 8:00 am to 4:30 pm. The County provides businesses using the recycling drop-off with free recycling bins in which to collect and transport its recyclables to the center. During the work day the County asks commercial entities to have their incoming materials weighed, so that they can track the quantity of materials being

recovered. Some businesses may drop off materials after closing, however, and these materials are not weighed.

While some small businesses located in close proximity to the drop-off site may go out of their way to deliver their recyclables to a drop-off center, large businesses and commercial entities are much less likely to do so, as they likely generate more recyclables than practical to deliver. Furthermore, Susquehanna County is over 800 square miles in size, and most entities would not drive nearly that distance to deliver their recyclables.

County Cardboard Collection Program

The County also offers the commercial sector in the Montrose region a cardboard collection program, where businesses may receive curbside collection of cardboard only. County crews collect stacked (not containerized) cardboard on an agreed-upon schedule for a small fee from private entities, and for no fee from state, County, and non-profit entities. Currently the County serves seven private customers in addition to the non-profit/governmental entities. The County does not wish to promote this program aggressively, as it wishes to keep it manageable with existing resources.

School Collection Program

The County also provides a recycling program for County schools. The County provides compartmentalized roll-off containers (free of charge) where mixed paper, cardboard and commingled containers can be deposited. The schools are responsible for having a private hauler pull the container to the County Recycling Center when the container is full. These roll-offs are collected on average twice per year, with a yield of 5,000 to 6,000 pounds per pull. County staff indicates that schools could likely recover more materials, especially containers, and increase the amount of paper and cardboard recovered. Some schools have indicated that their staff do not want to be bothered handling cardboard, and therefore do not recover that material.

Current Education and Promotion of Commercial Recycling

To date, commercial and institutional establishments have received little information from the County about the benefits of implementing a business recycling program. Many businesses may not know that recycling options are available. The County has found it problematic to notify all of the businesses and institutions about waste reduction and recycling opportunities. Considerable opportunities likely exist, therefore, to enhance involvement in recycling in the commercial/institutional sector.

Potential Diversion

The County estimates that 15 percent of the total amount of disposed solid waste generated annually in the County is from businesses and industries. This accounts for approximately 2,853 tons of commercial waste disposed per year. Based on the Statewide Waste Composition Study

by R.W. Beck, it is estimated that at least 1,050 tons (37 percent of the disposed waste stream) of readily recyclable materials could be recovered from the disposed waste stream from commercial and institutional entities in Susquehanna County. Table 1 shows the results of this analysis.

Table 1
Estimated Recyclables Disposed per Year
from Businesses and Institutions in Susquehanna County

Material	% of Disposed MSW[1]	Tons Currently Disposed
Corrugated Paper	11.8%	336.7
Newspaper	2.2%	62.8
Magazines	1.1%	31.4
Office Paper	2.1%	59.9
Mixed Paper	2.5%	71.3
Plastic (PET and HDPE only)	1.3%	37.1
Steel Cans	1.6%	45.6
Aluminum Cans	0.4%	11.4
Other Steel	3.7%	105.6
Unpainted Wood	10.3%	293.9
Total	37.0%	1,055.6

[1] *Pennsylvania Statewide Waste Composition Study,* April 2003, Northeast Region MSW Composition, Table 8, "Rural" results.

As Table 1 shows, it is estimated that the portion of recyclables currently being disposed in the County by businesses and institutions is in the 1,050 ton-per-year range, including unpainted wood. When unpainted wood is excluded (leaving recyclables that are commonly processed at material recovery facilities, there are still an estimated 762 tons of "typical" recyclables that can be removed from the waste stream, representing 27 percent of the disposed waste generated by commercial and institutional generators..

Commercial and Institutional Establishments

According to the County web site, the following businesses are the top ten employers in the County:

- Barnes Kasson Hospital;

- Montrose Area School District;

- PA State Government;

- Elk Lake School District;

- Mountain View School District;

- Susquehanna County Government;

- U.S. Assemblies (electronics manufacturer);

- Hallstead Blue Ridge School District;

- Susquehanna Community School District; and

- Donald Dean & Sons (cabinet maker).

R.W. Beck also analyzed U.S. Census data which tracks number of businesses by type. This information was analyzed at the County level, by number of establishments, as well as by number of employees. This data, combined with the list of top employers, should help guide the County in terms of concentrating their efforts for recycling education and outreach. Table 2 provides the summary of these results by number of establishments.

Table 2
Top Ten Business Categories in Susquehanna County
By Number of Establishments

NAICS Code	Industry Code Description	Total Number of Establishments
44	Retail Trade	161
81	Other Services	115
23	Construction	95
72	Accommodation and Food Svcs.	77
62	Health Care and Social Assistance	61
31	Manufacturing	58
54	Professional, Scientific, Technical Svc.	50
48	Transportation and Warehouse	39
21	Mining	33
42	Wholesale Trade	31

Data Source: U.S. Census Censtats 2003, http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl

The U.S. Census data by employment level in each NAICS category is shown in Table 3.

Table 3
Top Ten Business Categories in Susquehanna County
By Number of Establishments

NAICS Code	Industry Code Description	Total Number of Employees
44	Retail Trade	1,324
62	Health Care and Social Assistance	1,102
72	Accommodation and Food Svcs.	819
31	Manufacturing	726
42	Wholesale Trade	454
81	Other Services	391
23	Construction	274
52	Finance and Insurance	216
54	Professional, Scientific, Technical Svc.	215
51	Information	147

Data Source: U.S. Census Censtats 2003, http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl

It should be noted that in the U.S. Census data, several categories list "20-99" as the number of employees in the industry category, including education. It appears that this data may not be completely accurate, and therefore should be used in conjunction with data that the County has.

Examining all of the abode data indicates that the following industries (in no particular order) are likely good candidates for a targeted approach to education and outreach efforts:

- Retail establishments;
- Schools;
- Hospitals and health centers; and
- County and state offices.

More about how to target these sectors is described below.

Strategies for Enhancing Education and Outreach

R.W. Beck recommends that an education and outreach strategy to enhance participation in commercial recycling have several components. They include:

- General information about recycling and waste reduction programs and strategies suitable for all businesses, potentially including:

- Waste audits for interested businesses/institutions interested in developing a recycling program, as resources allow;

- Industry-specific information for targeted industry or institutional sectors, such as those identified above.

These education/outreach components are discussed more specifically below.

Approaches for All Businesses and Institutions

It is important for the County to have some basic information available for all businesses and institutions. Information that is important to convey to all businesses and entities includes:

Basic programmatic information, such as:

- What can be recycled;

- Types of recycling programs available;

- Who to contact to set up a program;

- Environmental and potential economic benefits to recycling;

- Waste minimization strategies; and

- Who to contact if more questions exist, or assistance is needed.

- Specific types of outreach activities that are often used with success to promote recycling and waste minimization are described below.

Brochures — The County should use a basic recycling brochure or similar publication that explains how the program works, including when and where, materials collected, preparation of materials, and why the program is important. The distribution is probably best accomplished by mail. However, it may also be possible to work with a local business association or Chamber of Commerce to distribute the materials as an insert or to print the information prominently in the publications. Mailing the brochures would ensure that they are received, though there is still no guarantee that they will be kept. As part of this project, R.W. Beck developed a tri-fold brochure about commercial recycling options in Susquehanna County, and their benefits. This brochure could be mailed to all businesses in the County, and also be made available on the County's web site. This brochure is provided in Attachment C.

Reminders — Sometimes businesses forget or do not completely understand which materials are acceptable or how to prepare materials. Many businesses are faced with high turnover rates, as well. Friendly reminders may help keep businesses mindful of waste minimization and recycling opportunities that exist in the County. The County could consider making available promotional items made from recycled materials — preferably something that would be used by business employees so it remains in view as a reminder—to serve as a constant reminder about the County's commercial recycling program. The County could provide these items to all businesses that request assistance in conducting a waste audit, or who request bins if they are

bringing materials to the County Recycling Center. Promotional items could include a range of products, from inexpensive pens, pencils, rulers, and refrigerator magnets to note pads or even tote bags.

Susquehanna County Recycling Website — The County should include a commercial/-institutional recycling information link to a recycling page on its website. Interested businesses could go to the site to find information about recycling options, special collection efforts, and related information. The County could even offer an option for businesses to sign up for a list serve that provides information about upcoming recycling events sponsored by the County, or the state. This would provide a very inexpensive means of educating and informing the businesses in the County about the recycling program. This information should be made available on both the County and the Authority web sites.

Fact Sheets – R. W. Beck has developed a set of 10 Fact Sheets (provided in Attachment D), which are designed to assist businesses and institutions implement a recycling program, and understanding the benefits of such a program. The general Fact Sheets that are suitable for all businesses and institutions include:

- Fact Sheet #1– Helping to Solve Solid Waste Problems in Your Business or Institution (one page);

- Fact Sheet #2 – Opportunities for Recycling at Work (two pages);

- Fact Sheet #3 – Developing a Recycling Program at Work; and (four pages); and

- Fact Sheet #4 – Conducting a Waste Assessment (two pages).

Spotlights on the Program — The County could also engage in other activities that are fun, inexpensive, and bring attention to the commercial recycling program. Some potential activities for consideration might include:

- Creating a recognizable slogan, logo or mascot associated specifically with the commercial recycling program. Having one or more of these things that identify the program would help to increase program visibility.

- Instituting an incentive program, such as a "Recycling Business of the Month" program, with selected businesses featured in a local paper or similar publication, perhaps a County newsletter, or on the County's website. Specific criteria would need to be developed to determine which businesses might be selected for this recognition, and businesses could be nominated from within the community (self or by other businesses) or selected through a procedure established by the County. Criteria should include measures that indicate that a given business is doing more than just collecting recyclables, and could potentially include: composting; buying recycled; recycling or reuse of materials other than those accepted through the County program; use of less hazardous products; and creative uses of materials or activity in the community. Awards could be solicited through the Chamber of Commerce or other business association. This strategy may be especially helpful in Susquehanna County, where recycling is voluntary, not mandatory.

■ "Piggy-backing" national seasonal events such as Clean Your Files Day (sponsored by the U.S. Conference of Mayors annually in Spring) or America Recycles Day (held annually in November). These national events are an easy way to get businesses involved in recycling, and provide the County with an additional opportunity to recognize outstanding business participation in the recycling program. For example, the County could sponsor a contest between businesses on Clean Your Files Day. The top three business that recycle the most office paper (either by weight or by volume) would be recognized at a Chamber of Commerce meeting, or the County could host a special award ceremony in conjunction with another business association activity. These businesses could be recognized in local newspapers and other publications.

■ Developing and using a display during community events, and rotated among businesses. This display could be used as part of any presentations made by County officials or a recycling committee.

Waste Audits/Technical Assistance – The County is interested in conducting waste audits in order to help businesses and institutions recognize opportunities for decreasing waste generation and increasing recycling opportunities. The County might consider partnering with other organizations to train others interested in environmental issues to also conduct waste audits. To assist in this effort, R.W. Beck has developed the following:

■ Fact Sheet #4 – Conducting a Waste Assessment (found in Attachment D); and

■ Business Waste Reduction Audit Guide (Attachment B).

Also as part of technical assistance, it can be helpful to understand barriers to recycling that businesses and institutions face. Often these barriers are simply misperception, and can be alleviated through education. Other barriers may be overcome with some thought and effort. The recycling community is generally very willing to share solutions to barriers, and there are several list serves that serve this need. In addition, R.W. Beck developed a survey that the County can administer to businesses in order to understand their level of recycling activity, and barriers. This is found in Attachment A.

Identify Existing Programs, and Implement/Promote in Susquehanna County — In some cases an infrastructure has been developed for handling certain types of recyclable materials, such as through producer take back programs One example of such a program is the RBRC (Rechargeable Battery Recycling Corporation) program (See www.rbrc.org). The RBRC is a non-profit organization developed to help consumers recycle rechargeable batteries. RBRC recycles the following battery chemistries: Nickel Cadmium (Ni-Cd), Nickel Metal Hydride (Ni-MH), Lithium Ion (Li-ion) and Small Sealed Lead (Pb). The Susquehanna County Recycling Center participates in this program, however has done little to advertise its existence. Similar programs often exist at retail outlets. Some office stores, for example, accept ink or toner cartridges, and in some cases even provide an incentive to do so (one retailer provides a free ream of recycled paper, for example, in exchange for empty ink cartridges). The County should identify and promote these types of programs.

Develop a Waste Exchange – Businesses and industry often dispose of "special materials" that are not commonly collected as part of the County's recycling program. For example, latex paint, building materials, wood pallets, and less popular grades of plastic. These materials often make up a large component of business and industry waste. Some communities sponsor a waste exchange, whereby businesses or institutions can "post" on a web site what materials they have available for reuse. Schools and non-profit entities can often use these materials for craft projects or to refurbish their facilities (such as in the case of paint and building materials). Usually these items are donated, however such an exchange need not be limited to "free" items.

Start at Home – The County should consider starting a waste minimization/recycling program with a focus on County offices. The County should be able to garner cooperation in terms of "before and after" data and can serve as a model program. The County's experiences, including barriers and strategies to overcome barriers, should be written up as a case study, and publicized in press releases. It is important to stress the financial, as well as environmental impacts of the program.

Developing a Commercial/Institutional Sector Recycling Task Force – In a County like Susquehanna, where lack of a recycling mandate, forty-one municipalities of different sizes and populations, and staff limitations that restrict the availability of personnel to work one-on-one with businesses to conduct waste audits or time that existing personnel can dedicate to getting business recycling programs started, it may be useful to form a recycling task force or advisory committee to assist with educating entities about the benefits of recycling, and conducting waste audits. A recycling task force or advisory committee, consisting of personnel who have a stake in recycling in the community may provide the best option to assist the County in implementing a commercial recycling program. This group should contain a cross-section of people representing a wide range of interests in order to address recycling issues in a manner that considers and meets the needs of all businesses involved. Representatives should have an interest in recycling, and should be, to the extent possible, known and respected in the business community. The following is a list of the organizations that should be considered for representation on a task force or advisory committee:

- Susquehanna County administration;
- Waste/recycling hauler;
- Recyclables processor;
- End user of recycled materials;
- Business organizations such as:
  - Chamber of Commerce; and
  - Business associations.
- Environmental organizations;

- School district (potentially in conjunction with PTA's and in-school environmental organizations);

- Media;

- Major businesses that recycle or are able to contribute time/funds to program;

- Property management companies (that manage complexes with multiple businesses);

- Banks;

- Hospitals;

- Respected professionals such as lawyers, doctors, etc.; and

- Citizens/volunteers.

There may be other organizations or individuals that the County is able to identify who could make valuable contributions to this type of effort as well. Having representation from all sectors can help in: (1) identifying the issues that need to be addressed; (2) identifying businesses and institutions that should be recycling or may require assistance; (3) identifying types of materials generated and projecting the tons/volume of materials that might be expected; (4) developing and disseminating public education; and (5) monitoring program performance.

As strides are made in waste reduction/recycling, representatives from businesses that are doing well could be paired with similar businesses in a sort of "peer match" approach to help those that are struggling. This kind of group may also want to consider cooperative efforts among businesses that would improve collection efficiency and achieve cost savings for businesses that participate.

Finally, a task force or advisory committee spreads the workload over a larger group, and a group where members are affected directly by the decisions of the group. This approach should help to reduce burnout and boost commitment.

Approaches for Specific Sectors

Often there are efficiencies to be gained by focusing on specific sectors of commercial or institutional waste generators. This allows for more focused discussion, and often the County can take advantage of a meeting (such as a trade association meeting or county office meeting) in order to reach a "captured audience." This approach allows the discussion to identify barriers and solutions that may be specific to a particular sector. Some approaches for sector-specific guidance include:

Fact Sheets – R. W. Beck has developed the following Fact Sheets (provided in Attachment D), which are designed to assist specific sectors with implementing a recycling program, and understanding the benefits of such a program. These Fact Sheets include:

- Fact Sheet #5 – Recycling in Offices;

- Fact Sheet #6 – Recycling in Restaurants and Taverns;

- Fact Sheet #7 – Recycling in Warehouse and Manufacturing Operations;
- Fact Sheet #8 – Recycling in Retail Operations;
- Fact Sheet #9 – Recycling in Hospitals;
- Fact Sheet #10 – Recycling in Schools;

Work with Sector-Specific Associations – It may benefit the County to identify local or regional trade associations to help promote the benefits of recycling. In some cases, such as the hotel industry, a well-established organization already exists to help with waste reduction and recycling information and tips. (See, for example, www.greenhotels.com). Other sectors may not have an established waste reduction/recycling program, but may provide networking opportunities through scheduled conferences and/or meetings, and may be willing to work jointly to reach members.

Develop and Share Case Studies – It is important for businesses and institutions to understand that recycling and waste reduction can be successful, and can have a positive economic benefit to the company. The County should work with businesses that have successfully implemented such strategies, and describe the positive impacts on the business or entity in, as much as possible, measurable terms. Examples within the same sector will be more "real" to commercial and institutional entities. They will be more likely to relate to their specific programs, learn how barriers to the particular sector's recycling efforts were overcome, and see the successes as attainable.

Strategies Especially Suited for Small Businesses

Often larger businesses have ample space for recycling containers, and realize direct cost savings by setting up recycling programs, as they can reduce the number of refuse "pulls" per week and/or the size of their containers, thus saving money. Sometimes smaller businesses do not see as large of a cost savings, or claim that limited space makes recycling too challenging. The following strategies address some of these potential barriers:

Cooperative Efforts — Several businesses located within a given area could act cooperatively to bid for recycling collection and processing services. This would require some coordination concerning internal efforts and materials to be recycled. In this scenario, several businesses could deposit their recyclables into a common container or containers for collection, and the cost of service would be prorated among the participants.

Non-Profit Services — In some areas, non-profit agencies like Goodwill Industries have developed collection programs for recyclables. Because their costs are much lower, the cost to customers is usually much lower. Such organizations are also broadening the range of materials they are involved in recycling, to include materials such as ink and toner cartridges.

Joint Bidding by an Umbrella Organization — Some businesses and professional groups, such as chambers of commerce or downtown districts, have acted on behalf of members to bid for services, often at a reduced price for the group. This often results in the added benefit that

service can be provided to businesses in the district on the same day(s), thus minimizing traffic disturbances and maximizing the amount of time that waste is cleared from the curb. Also, downtown districts can often negotiate haulers to serve establishments at a particular time of day that is less likely to disrupt business.

Drop-Off Recycling — Susquehanna County provides for the drop-off of recyclables from businesses. While this requires some initiative by the business to deliver materials to the drop-off site, it can provide a nearly no cost option for recycling. This type of program does not result in additional incremental costs to the County, however is likely to be used only by businesses in close proximity to the Recycling Center. By publicizing the existence of the Recycling Center to establishments in close proximity, the County can likely boost recycling among some nearby institutions and businesses for a relatively low cost.

Tracking Progress

To determine if a commercial recycling program is effective in Susquehanna County, the County may want to request basic recycling tonnage information from businesses that are currently recycling. The County can use the survey in Attachment 1 and request that businesses currently recycling provide their recycling tonnage information. As an ongoing part of promoting the commercial recycling program, the County can request that participating businesses report their recycling tonnage annually to the County (although not mandatory). The County can use this tonnage information to gauge the success of the recycling program.

CONCLUSIONS

- Susquehanna County currently does not have strong business participation in a commercial recycling program.

- The County does not know how many businesses, if any, currently participate in a recycling program.

- It appears there have been no comprehensive education efforts to assist the commercial and institutional sectors in either implementing or improving their recycling programs.

- Recycling is not mandatory for businesses and institutions in Susquehanna County, so the County needs to provide incentive for businesses to voluntary participate in the program.

RECOMMENDATIONS

- The County should notify businesses and industries of the commercial recycling options available in the County.

- The County should use the survey provided in Attachment A to collect information from commercial and institutional facilities as a means of determining the status of recycling among commercial and institutional entities in the County.

- The County should use the list of commercial establishments and institutions provided by the Northern Tier Regional Planning and Development Commission to target certain businesses and industries.

- The County should implement a comprehensive education program for commercial establishments and institutions, beginning with the use of materials provided in the Attachments. Ideally, the County should promote and support a commercial recycling program by offering to assist interested businesses and industries in conducting waste audits.

- To further support commercial recycling efforts, the County should provide ongoing program education to the businesses by mailing brochures, fact sheets, etc. on a regular basis.

- The County should consider establishing a Recycling Task Force, perhaps with the aid of the County's Chamber of Commerce, in order to obtain support, interest, and assistance.

- The County should also consider partnering with local environmental groups to promote recycling and waste minimization.

- The County should consider strengthening recycling and waste minimization efforts within County offices, being sure to measure success to the extent possible, and tout the County's successes. The County will be more credible to businesses and institutions if they have undertaken similar efforts in their own offices.

- The County should identify programs in place for the recycling of non-traditional materials through participation in special collection programs (such as producer take back programs or retail-sponsored programs).

- The County could request that businesses participating in the commercial recycling program voluntarily provide recycling tonnage information, so the County can collect annual recycling data and to obtain more complete information from commercial establishments in the County. A competition to "recycle the most tons per employee" or a simple raffle among all participating establishments could provide an incentive for the sharing of information.

- The Borough should implement special seasonal recycling events, such as Clean Your Files Day and America Recycles Day, which are geared toward commercial/institutional recycling.

- The County should consider establishing a Task Force or Advisory Committee consisting of key persons from all sectors of the County to assist the County in expanding and improving its commercial recycling program.
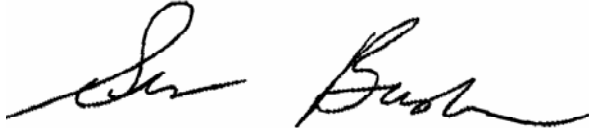
Businesses and industries in Susquehanna County are not mandated to recycle. Yet recycling opportunities do exist for the commercial sector in the County. With recycling options in place, and with the amount of commercial waste the County stands to divert from the waste stream by encouraging businesses and industries to recycle, the County could benefit from an improved commercial recycling program. For those reasons, the County should strongly consider implementing the recommendations listed above.

Mr. Eric Hamby
Susquehanna County
December 29, 2005
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Please contact me if you have any questions regarding this report. I can be reached at (401) 782-6710.

Sincerely,

R.W. BECK, INC.

Susan Bush
Project Manager

SB:ls

Attachment A
Commercial Recycling Survey

SUSQUEHANNA COUNTY
SOLID WASTE AND RECYCLING DEPARTMENT
COMMERCIAL/INSTITUTIONAL RECYCLING SURVEY
Month 2006

The Commonwealth of Pennsylvania set a goal to recycle 35 percent of its waste by 2003. Your establishment has been selected to provide Susquehanna County with information designed to assist in developing a commercial recycling program to improve the County's recycling program and recycling rate in an effort to meet this goal.

Please complete this survey and return it no later than DATE to:
>Susquehanna County
>Solid Waste and Recycling Department
>P.O. Box 218 Montrose, PA 18801
>ATTN: Recycling Survey

If you have not returned your survey by this date, a representative from the County may contact you between DATES to obtain your responses.

Questions can be directed to: Eric Hamby at (570) 278-3509

1. Are you aware of the recycling provisions of the Municipal Waste Planning, Recycling and Waste Reduction Act of 1988 (Act 101)?

    ☐ Yes   ☐ No

    If your response is "No," please skip to question #3.

2. How did you become aware of these provisions?

    _____

    _____

3. Although recycling is not mandatory in Susquehanna County, is your establishment recycling?
    ☐ Yes   ☐ No

    If you are not recycling now, please skip to question #10.

4. What items does your business recycle?

High grade office paper	☐ Yes	☐ No
Corrugated cardboard	☐ Yes	☐ No
Aluminum cans	☐ Yes	☐ No

    Are you recycling any other materials?   ☐ Yes   ☐ No

    Please specify _____

    _____

    Are there materials generated in your establishment that you would like to have recycled but are not currently being collected?   ☐ Yes   ☐ No

    Please specify _____

5. How is your recycling collected? Please check all that apply.

    From the business by a contracted hauler   ☐

Business delivers recycling to County drop-off center ☐
County picks up cardboard from business ☐
Business "backhauls" recyclables to a distribution center or warehouse ☐

6. If you use a contracted service, can you estimate the annual cost for recycling? (NOTE: Your response is appreciated, but not required.)

$_____

7. Which contracted service do you use?

_____

8. Can you provide an actual or estimated total of material (by weight) recycled by this establishment in the last calendar year?

_____ pounds/year

_____ tons/year

☐ No idea

9. Can you provide actual data or estimates of which materials comprise the largest percentage of recyclables collected from your establishment?

Material

_____ _____%

_____ _____%

_____ _____%

☐ No idea

10. What do you think is the greatest obstacle to recycling at this establishment (regardless of whether or not your establishment is currently recycling)?

_____

_____

_____

_____

11. How do you feel this obstacle might be overcome (check all that apply)?

☐ Action by owner/manager   ☐ Action by contracted hauler/broker
☐ Assistance by Susquehanna County ☐ Mandatory Commercial Recycling Program
☐ Education and/or technical assistance
☐ Other (please specify) _____

_____

If you are not recycling now, please skip to question #13.

12. Could the obstacle(s) you cited cause your establishment to discontinue recycling in the future?

☐ Yes   ☐ No

13. What specific resources and/or assistance would be required to help your establishment overcome these obstacles?

_____

_____

_____

_____

14. How could Susquehanna County Solid Waste and Recycling Department or the PA Department of Environmental Protection help you with recycling?

_____

_____

_____

15. Has the Susquehanna Solid Waste and Recycling Department or the PA Department of Environmental Protection provided any assistance to date?

☐ Yes (please elaborate) _____

_____

☐ No

16. Does your establishment make an effort to purchase products or packaging with recycled content?

☐ Yes   ☐ No

If yes, please cite products purchased _____

_____

17. Would you like a copy of this survey report and/or completed survey results?

☐ Yes, survey report
☐ Yes, summary of survey results
☐ No

18. Comments _____

_____

_____

_____

19. Name of Establishment _____

Contact _____ Telephone (_____) _____

Address _____

City _____ State _____ Zip Code _____

Email Address:_____

Attachment B

Susquehanna County
Commercial Waste Audit/Recycling Program
Implementation Guide

Introduction

This Waste Audit Guide is designed to help those conducting waste audits, whether employed by a business or institution, or the County, to identify ways to reduce waste – by recycling and generating less waste in the first place. This Guide contains the following:

Information regarding how to assess the waste stream;

- Tips regarding how to develop an effective recycling/waste reduction program;

- How to develop an effective program;

- How to promote successes; and

- Worksheets to further guide the process.

Assessing the Waste Stream

A waste assessment is an organized study of a business's waste stream. The waste assessment will provide baseline information about a business's purchasing, waste generation and waste management practices. This data will be useful in developing a strategy for waste reduction and identifying problem wastes to be targeted for reduction and recycling. Knowing the volume and type of recyclable material generated is also important when contacting recycled material buyers.

An effective waste assessment includes one or more of the following tasks:

Analyze Facility Records

A thorough examination of certain records can reveal sources of waste that may not be apparent. Specific records to analyze include:

- **Purchasing and inventory records:** look for duplicity in purchasing and over-ordering of dated material; look for over-packaging and opportunities to buy non-dated material in bulk.

- **Equipment service contracts and repair invoices:** identify equipment that is not operating efficiently and possibly generating excess waste.

- **Waste hauling and disposal records and contracts**: these records will show the amount of waste disposed and disposal charges. Examine twelve month's worth of records to

identify any fluctuations in the amount of waste generated over a year. Worksheet A will aid in calculating disposal costs.

- **Contracts with recycling facilities and records of recycling revenues and expenditures:** take note of the amount and types of material recycled and any changes in charges or revenues.

Characterizing Waste Flows

The County should assist businesses in conducting a "walk through" of each area of the business and take notes of the following:

- The types and amounts of waste being produced;

- Waste-producing activities and equipment;

- The flow of waste through the facility;

- The layout and operation of departments;

- Existing space and equipment that may be used for storage, processing recyclables, and other activities associated with the waste reduction program;

- Any current waste reduction efforts;

- Additional information gathered through discussions with supervisors and employees. Make a special point to talk with housekeeping or cleaning crews, as these employees often have an accurate picture of the waste generation situation; and,

- Status of dumpsters and compactors. Specifically, are these being hauled away full or partially empty?

A process flow diagram is particularly useful in identifying areas for waste reduction. In theory, the weight of all material entering a process should equal the weight of material leaving the process. Document the material entering the organization by using purchasing and inventory records. Identify all outputs, including products, by-products, materials recycled and waste disposed. The process flow diagram can identify the areas of the operation which need the most attention when starting the waste reduction and recycling programs.

Performing a Waste Sort

A waste sort is the physical collection, sorting and weighing of a representative sample of a business's waste. A waste sort gives a more precise picture of the types and amounts of waste being generated by an organization. The waste sort can be as simple as the County or business obtaining a sample of the mixed waste stream (i.e. several bags from each department) and sorting it into categories (e.g. office paper, cardboard, glass, metal, etc.). Each category is then weighed to obtain percentages of the waste stream. The County may also target one specific department or material. For example, all office paper waste could be separated for a week and the County could extrapolate the volume to estimate how much is discarded in a month or year. Materials are often further grouped within each category. In the case of a paper sort, materials may be subdivided into high-grade, low-grade, newsprint, magazines and others. See Worksheet B for more information on performing a limited waste sort.

A crucial factor in conducting an effective waste sort is assuring that the sample is representative. The County should assess all variables affecting waste generation. Waste generation may vary with seasonal, operational or environmental factors. If the potential exists for a high degree of inaccuracy, a multi-day sampling may be necessary. Daily, weekly and seasonal operational variations that affect waste generation must also be considered. The data gathered through the waste sort will be used as a basis for decision making and program evaluation. An inaccurate sample can result in skewed calculations of waste generation, waste composition and waste removal costs.

Developing an Effective Program

There are steps the County should take when designing a waste reduction program for businesses. These objectives include: set realistic goals, generate strategies, evaluate options, motivate and train employees, and monitor results. Each of these elements is important to successful waste reduction programs, but the relative importance of each will vary based on the business's size, personnel, flexibility, and other underlying factors.

Step 1: Set Program Goals

Goals set by the County and/or the business waste reduction team will provide a framework for program evaluation and specific waste reduction efforts to follow. Preliminary goals should be flexible and subject to reexamination and adjustment as needed. Some suggestions for developing goals are:

- Set waste reduction goals for both the business as a whole and for individual departments, if applicable;

- Make sure goals are compatible with the overall goals of the business;

- Ensure that goals are measurable; and,

- Ensure that goals can be achieved with available resources, personnel and time.

Step 2: Generate Strategies

Using the information gathered through the waste assessment results, the County and the business waste reduction team should hold a brainstorming meeting to generate ideas to reach waste reduction and recycling goals. Ideas should also be solicited from other managers and employees.

Step 3: Evaluate and Choose Options

After all the potential waste reduction and recycling options have been identified, the County and the business waste reduction team should evaluate the options based on the business's reduction and recycling goals. Some other areas to consider when reviewing reduction or recycling possibilities include:

Technical Considerations

- Effect on product or service quality and product marketing;

- Operation and maintenance requirements;

- Compatibility with existing operations;

- Equipment requirements; and

- Space or storage requirements.

Economical Considerations

- Potential to reduce waste removal (hauling) costs;

- Reductions in purchasing costs;

- Implementation or start-up costs; and,

- Revenue from sale of recyclables.

Effectiveness and Impact on Business Environment

- Potential to reduce waste generation;

- Potential to increase recycling;

- Effect on community relations, employee morale and environmental awareness; and,

- Implementation feasibility and timeframe.

The relative importance of various evaluation criteria for reduction and recycling ideas will change according to the goals of the waste reduction program. Immediate cost effectiveness may not always be the key factor in selecting waste reduction strategies. For example, the County should examine and identify the long-term economic effects of reduction strategies while weighing start-up costs. The measure may result in impressive cost savings or improved productivity over several years. Impacts on other factors such as employee morale and community relations may be equally important and must also be examined along with financial considerations. Worksheets C and D will aid in evaluating the cost effectiveness of each option.

Tips for Implementing A Successful Program

Containers and Container Locations

Bins for collecting recyclable materials should be placed in accessible locations (small bins at each workstation are ideal for an office environment). The waste assessment or informal evaluation will identify areas in the business that generate large and small amounts of material. This will dictate the size of collection bins or containers needed in those areas. Many of the recyclers or haulers will provide containers as part of their services.

Employees can be asked to empty their small workstation containers into large, centrally located collection bins, or cleaning staff may be required to empty recycling containers when trash receptacles are emptied. The waste reduction team should brainstorm ideas for effective recyclable collection methods.

Contamination of Material

A common pitfall of newly implemented reduction and recycling programs is contamination of recyclable materials with non-recyclable waste. Continuing education and awareness campaigns are the best solutions to the problem. Recognizing contamination as a potential problem during training and program development can minimize the problem

Step 4: Educate Employees

The County can assist the waste reduction team build employee enthusiasm for the waste reduction and recycling programs by distributing or posting an announcement from the top management stating their full support of the effort. This statement will impress upon employees that waste reduction and recycling is a high priority for the company. The management announcement should:

■   Introduce employees to waste reduction;

■   Explain how waste reduction and recycling can benefit the employee, the company and the environment;

■   Outline the design and implementation stages of the program; and,

■   Provide the team leader's name and encourage employee suggestions.

Seeking employee input from as many sources as possible can also build program support. Memos, updates and announcements should be posted regularly and in a centralized location(s). At the same time, employees should have various opportunities for involvement. Monthly or other regular meetings, suggestion boxes, e-mail communication, and informal surveys are some possibilities. If action is taken as a result of employee input, recognize the source and encourage others to participate.

The waste reduction or recycling programs will almost certainly require the efforts of numerous employees outside of the waste reduction team. At the least, employees will need to change some daily habits. Employees most affected by the program will need to be trained and kept informed of changes.

Step 5: Monitor Results

The County should encourage the business to monitor the program results to eliminate problems and to quantify successes. Mechanisms to track a recycling program include:

■   Comparing waste hauling records from prior to the program to hauling records after implementation of the program to demonstrate waste reduction and cost savings;

■   Asking recycling companies to provide monthly weight reports of material recycled, and the County should compare these reports month to month to monitor changes in the amount of material recycled;

■   Checking dumpsters for accidental disposal of materials that should have been sent to recyclers; and,

■   Tracking of statistics such as decreases in landfill material, avoided hauling costs, recyclable revenue, and employee participation.
.

Promoting Success

Internal Communications

The employees that make waste reduction programs work should hear about the successes. The County should encourage businesses to announce program accomplishments to build enthusiasm for the program and boost employee morale.

When giving numbers and statistics, help employees understand the environmental and business significance by relating numbers to tangible materials. For example:

> Tons of paper reduced x 17 = Number of trees saved
> ---
> Tons of paper reduced x   7,000 = Number of gallons of water saved
> ---
> Tons of waste reduced x 3.3 = Number of cubic yards of landfill
>   space saved

Award Programs

The County may also want to work with the businesses to recognize individual employees and departments. Perhaps departments exceeding targeted participation or recycling rates receive a catered lunch or some other small token of appreciation. Individual awards could include a certificate, plaque, a "We Recycle" t-shirt, a pass to a local entertainment event or restaurant, a half day off, or any other small recognition. It is important to make the awards program a secondary motivation for participation. Employees should be motivated to participate primarily because it is good for the company, the environment, and themselves as employees and citizens.

Table 2 lists 478 businesses and industries located in Susquehanna County according to data obtained from the Northern Tier Regional Planning and Development Commission. This information can be used to direct-mail recycling program information to the targeted businesses and industries.

1.1   Worksheets

The worksheets contained in this guide are designed to help businesses and institutions think about their current waste disposal practices, costs associated with those practices, and potential to divert some of the disposed waste via waste reduction or recycling efforts. The worksheets included below are:

- Worksheet A: Calculation of Disposal Costs;

- Worksheet B: Conducting a Waste Analysis;

- Worksheet C: Evaluating the Costs of a Waste Reduction/Recycling Program; and

- Worksheet D: Calculating Avoided Disposal Costs.

1.2   Worksheet A: Estimating Disposal Costs

Off-Site Waste Removal

A. Name of waste removal company _____

   Telephone number _____ Date contract expires_____

B.   Removal Schedule

   Number of times _____   Per (day/week/month/other) _____
   Days of week _____   Time(s) of day _____

Choose one of the following equations (C1, C2 or C3):

C1. Waste removal charge (If charged as flat fee or part of rent)

   _____ X _____ = _____
   Waste removal fee   Number of Times per Year   TOTAL WASTE DISPOSAL

C2. Waste removal charge (If charged by weight or volume)

   _____ X _____ = _____
   Waste removal charge   Number of units of waste   Annual waste removal charge
     per unit of weight   removed of waste (from
     or volume   receipts or call haulers)

   If applicable, add:

   _____ X _____ = _____
   Hauling container(s)   Number of time periods   Annual container cost
   rental fee per   per year
   time periods

   _____ + _____ = _____
   Annual Waste Removal   Annual Container Cost   **Total Waste Disposal Cost**
   Cost

C3. Waste removal charge (If charged per pull)

   _____ X _____ = _____
   Charge per pull   Pulls per year   Annual waste pulling charge

   If applicable, add:

   _____ X _____ = _____
   Hauling containers(s)   Number of time   Annual Waste container rental cost
   rental fee per time   periods per year
   period

   _____ X _____ = _____
   Annual waste   Annual waste   **Total Waste Disposal Cost**
   pulling charge   container rental cost

1.3   WORKSHEET B: CONDUCTING A WASTE ANALYSIS

The following are two options for estimating the types and quantities of materials in a company's waste stream. This knowledge will aid you in targeting materials for recycling and reduction and in contacting recyclers.

1.4   Method I

This Method involves visually monitoring the dumpster each day and keeping track of the following:

- What materials are visible in the dumpster?

- What materials take up the largest volume in the dumpster?

- How full is the dumpster?

If the majority of a company's waste is placed in garbage bags before disposal, have cleaning staff use different colored bags for each area. For example, put the waste from the offices in clear bags, the cafeteria waste in white bags, the restrooms' in blue bags, the production waste in black bags, etc. This will help to identify the areas which are generating the most material. Then, walk through those areas to see what is being thrown away. In the above example, we could assume that the clear bags contained primarily office paper.

1.4.1 Waste Analysis Estimation – Method 1

Day observed _____

How full _____

Materials Visible   Estimated percentage of waste stream

_____   _____

_____   _____

_____   _____

_____   _____

Color of bag   # in dumpster   Type of waste generated in the designated area

_____   _____   _____

_____   _____   _____

_____   _____   _____

_____   _____   _____

_____   _____   _____

1.5   Method 2

This method provides a more accurate estimation of the quantity of material in the waste stream. Place a container near the dumpster or in a central location and designate it for your targeted material. Notify all employees that, for a specified period of time, all of the targeted material will be placed in this container rather than the dumpster. With certain materials, such as OCC, it may be possible to have one employee or the cleaning staff segregate the material. For other materials, such as office paper, all employees will need to be involved. Note that the container must be under shelter.

Continue the sort for at least two weeks. At the end of the specified time period, record the quantity of material accumulated. Contact the local recyclers listed in the back of this guide to find one that will pick up or allow you to drop-off the sorted material for recycling.

1.5.1 Waste Analysis Estimation – Method 2

Material sorted _____   Time period sorted _____

_____cubic yards X   _____ =   _____cubic yards
Size of containers   Number of containers   Amount sorted

(_____pounds _ _____pounds)   X _____ =   _____pounds_
Weight of full   Weight of empty   Number of   Amount sorted
Container   container   containers

Extrapolate this amount to a month or year. This information will be extremely useful when contacting recyclers and determining the cost-effectiveness of your recycling program.

(_____pounds_ ÷ _____)   X   52 weeks/year =   _____pounds_
Amount sorted   Number of weeks   Targeted material
                                       Of sort   discarded
                                                                                       per year

1.6 WORKSHEET C: EVALUATING THE COSTS OF A WASTE REDUCTION OR RECYCLING PROGRAM

1.7 Monthly Program Costs

Additional labor (cleaning/maintenance staff) --------------------------------------$ _____

Additional energy requirements --$ _____

Transportation ---$ _____

Additional space requirements ---$ _____

Education/promotion ---$ _____

Record keeping ---$ _____

1.7.1.1 START-UP COSTS (AMORTIZED MONTHLY)
Containers ---$ _____

Equipment (if any) ---$ _____

Other --$ _____

Total Program Costs --**$** _____

1.8 Monthly Program Savings and Revenues

Avoided collection/disposal costs (See Worksheet D) ----------------------------$ _____

Decrease in new material costs --$ _____

Revenues from sale of recyclables ---$ _____

Avoided purchases --$ _____

Avoided labor (cleaning/maintenance staff) --------------------------------------$ _____

Total Program Savings/Revenues --**$** _____

(Total Program Savings/Revenues – Total Program Costs) ------------------- $ _____

1.9 WORKSHEET D: CALCULATING AVOIDED COLLECTION/DISPOSAL COSTS

Material targeted for recycling or waste reduction_____

Approximate percentage of waste stream_____

1.10 By Volume

Use this formula if you used a visual estimate of the waste stream of if you calculated volumes in the waste sort.

_____	X	_____	=	_____
% of material		Total cubic yards disposed		Targeted for
(by visual estimation		(ex.: 4 cubic yard dumpster emptied		diversion
or sort)		3 times per week = 12 cubic yards		
		or 48 cubic yards per month.)		

_____ cubic yards	X	70%**	=	_____ cubic
yards				
Targeted for diversion				Expected diversion

_____ cubic yards	÷	_____	=	_____ cubic
yards				
Expected diversion		Total volume of all waste disposed		Percent of Waste Stream Diverted

---

1.11 By Weight

Use this formula if you calculated weight in the waste sort and if your hauler will provide weight slips for your dumpster.

_____ pounds	X	70%**	=	_____ pounds
Pounds of material				Expected diversion
Discarded per year				
(Worksheet B)				

_____ pounds	÷	_____	=	_____
Expected diversion		Total volume of waste disposed		**Percent of Waste Stream**
		(provided by hauler)		**to be Diverted**

**To be conservative, assume that you will divert 70% of the target material.

Depending upon the amount of material diverted from the waste stream, a business may be able to save money by reducing the frequency of pulls or by reducing the size of the dumpster. The County should encourage entities to ask their waste hauler how much disposal costs can be reduced if the waste stream is reduced by the percent estimated above.

Attachment C
Commercial Recycling Tri-Fold Brochure

Recycling Information

If your office or business is interested in Recycling, you have the option to select any county licensed private hauler that provides recycling collection to collect your recyclables.

Alternatively, you can deliver your business' recyclables to the **Susquehanna County Recycling Center** at no charge.

Accepted Recyclable Items

Aluminum Cans: Aluminum beverage or food cans.

Tin Cans: no need to remove paper; please rinse.

Separated Glass: Clear, green and brown jars and bottles ONLY.

Plastic Bottles Only: We take only plastic bottles and jugs: i.e., water, soda, and juice bottles, laundry detergent and milk jugs.

Rigid Plastics: Most other plastics that are not food containers (no rubber products): buckets, kids toys, furniture, etc. Please call for detailed list.

Mixed Paper: Magazines, books, catalogues, white paper, newspaper and chipboard (no waxy containers).

Corrugated Cardboard: Please flatten to increase storage room.

For more information contact the Susquehanna County Department of Solid Waste Management and Recycling at:
(570) 278-3509.

SUSQUEHANNA COUNTY
Department of Solid Waste Management and Recycling
5 Ellsworth Drive
South Montrose, PA 18801
Email: ehamby@susqco.com
www.susquehannarecycle.com

Recycling
at your place of business

Recycling
at your place of business

Making cent$ of it all...

Susquehanna County Recycling Center

The Susquehanna County Department of Solid Waste Management and Recycling

The Business Benefits of Recycling — Making a Cent$...able Decision

Can your business afford to recycle? Maybe a better question to ask yourself is: Can your business afford **NOT** to recycle? Whether implementing a recycling program at your business would cost or save you money depends on several factors. The Susquehanna County Department of Solid Waste Management and Recycling would like to help you perform a cost / benefit analysis to help you decide

for yourself if a recycling program would be cost-effective for your business.

Recycling provides businesses with the ability to control the cost of garbage disposal. By removing recyclable materials from your office or business waste stream, you may be able to use a smaller dumpster or container or you may be able to decrease the number of garbage pick-ups per month. Having less garbage to collect, and/or having your garbage collected less frequently, results in lower garbage hauling and disposal fees.

For free consultation or more information, please contact the **Susquehanna County Department of Solid Waste Management and Recycling** at: **(570) 278-3589 / 3509** or e-mail us at **ehamby@susqco.com.**

Before beginning a recycling program at your workplace, ask yourself:

- Is your staff willing and able to dedicate themselves to a recycling program at work?

- Is there room on site to place recycling containers that will not get in the way of your office or your business' daily operations? (Remember, recycling may allow you to reduce the size of your garbage dumpster)

- Do you use a janitorial service? If so, are you willing to work with them to ensure that they properly place the recyclables in a central collection site and separate recyclables from garbage?