

Feasibility of Working Partnerships
With Neighboring Municipalities for Recycling
And Recommendations for Recycling Center Expansion

Leechburg Borough
Armstrong County



Leechburg Borough Recycling Center Entrance Sign, 2001

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BACKGROUND

The Pennsylvania Department of Environmental Protection (PaDEP), the Governor's Center for Local Government Services, the Pennsylvania State Association of Township Supervisors (PSATS) and the Solid Waste Association of North America (SWANA) formed a training partnership for Pennsylvania local governments interested in achieving higher recycling rates. Through this partnership, Leechburg Borough was awarded \$5,000 in technical assistance services from Gannett Fleming, Inc.

INTRODUCTION

Leechburg Borough in Armstrong County, with a population of 2,386, provides curbside recycling services to its residents, and encourages non-residential establishments to recycle, as well. Non-residential is a term used to refer to commercial, municipal, educational, and institutional establishments. Two Borough workers use a modified flatbed truck to collect curbside recyclables twice a month from each household. Curbside collection is for aluminum and bi-metallic (tin) cans, type 1 and 2 plastics, and clear, brown, and green glass. In addition to curbside materials, the Leechburg Borough Recycling Center accepts newspapers, magazines, catalogs, envelopes, and cardboard through a drop-off program.

The Leechburg Borough Recycling Center was constructed in 1991 with assistance from PaDEP grants. Through 902-grants from the PaDEP, the Borough has also purchased a skid loader, a forklift, a glass bottle crusher, an aluminum can compactor, a newspaper baler, and a multi-purpose baler for plastics, cardboard, and tin cans. Sorted materials are baled and crushed prior to transport by a broker.

The recent purchase of balers has significantly decreased hauling costs on an annual basis, but has also created a need for additional material storage space. The Borough must accumulate a volume of material sufficient to fill a tractor-trailer before a broker will haul it. With a plan for facility expansion, the Borough would like to consider forming a working partnership with neighboring municipalities to coordinate recycling efforts. Should neighboring municipalities

have an interest in using the Borough recycling facility, expansion plans will need to account for the additional material volume.

SCOPE OF WORK

In a meeting between Keith Knepshild and Nancy Bono of Leechburg Borough and Ray Regan of Gannett Fleming, Inc on April 26, 2001, the following tasks were outlined:

- Task 1:** Assist the Borough in determining the feasibility of a working partnership with neighboring municipalities for recycling.

- Task 2:** Recommend material storage planning volumes, equipment storage locations for ease of access, and the location of signs

CURRENT STATUS AND OPERATION OF THE RECYCLING PROGRAM

As shown in **Figure 1**, the Recycling Center is located on the north edge of town at the end of Locust Street. **Figure 2** shows the facility layout. Sorting occurs at the south end of the building with tables that are available for glass and plastic bottles, and storage bins that are available for the remaining materials prior to compaction and baling. Most of the compaction, crushing, and baling equipment is located at the south end of the building. Long-term storage is available along the north, east, and west walls. Due to spatial limitations within the facility, plastic bales are stored outside under a tarp.

At the current recycling rate, approximately three months of storage time are required for newspaper and cardboard bales. For baled plastic, long-term storage is a problem because 50 bales per truckload are required for hauling; it takes the Borough almost a year to accumulate this volume of material. Office paper and glossies are picked up every two weeks by the same vendor who delivers new Gaylord storage boxes.

One of the recycling brokers that the Borough frequently contracts has agreed to leave a trailer on location for cardboard storage. The Borough, however, is not under contract with any specific broker. When the Borough has accumulated enough material for hauling, Mr. Knepshield solicits bids from several brokers and selects the one with the best offer. The Borough weighs its own materials to assure that the payment received for materials is appropriate.

As shown in **Table 1**, the Borough collected a total of 254 tons of recyclable material from residential establishments, and 37 tons from non-residential establishments in 1999. A portion of the tonnage that was credited to the residential program could be from non-residential establishments. Materials are often dropped off at the recycling center, which makes it difficult to track the source. **Figure 3** shows the weight distribution of recyclable materials collected in 1999.

Table 1: Leechburg Borough 1999 Recycling Performance

Material	Residential (tons)	Non-Residential (tons)	No. of Bales Boxes, or Pallets¹	Volume² (cubic yards)	Conversion³ Weight to Volume
Cardboard	52	37	178 bales	434	1000 lbs/bale
Newspaper	72		103 bales	251	1400 lbs/bale
Office paper	38		127 boxes	127	600 lbs/box
High-gloss paper	3		10 boxes	10	600 lbs/box
Aluminum	6	0.1	5 pallets	5	2500 lbs/pal
Bi-metallic cans	19		54 bales	132	700 lbs/bale
Clear glass	27		23 boxes	23	2400 lbs/box
Green glass	8 ½		7 boxes	7	2400 lbs/box
Brown glass	9		8 boxes	8	2400 lbs/box
PET & HDPE plastic	19 ½		56 bales	136	700 lbs/bale
TOTALS	254 tons	37 tons		1,132 CY	

Notes: 1) Market size bales are 2.44 cubic yards (CY) and Gaylord boxes are 1 CY

2) Volume is calculated from the tonnage and weight to volume conversion factor

3) The conversion factors are from the Leechburg Borough scale

Recycling rates compare the amount of material recycled to the total amount of municipal solid waste generated. Without an estimated value from the Borough's solid waste hauler, the PaDEP value of 0.80 tons per person per year can be used to determine an approximate recycling rate. The Borough had 2,504 residents in 1990 according to US Census data. On the basis of this

Census count, the 1999 recycling rate was 14.5%. This estimated rate was the Borough's credit for the purpose of 904- grant performance rather than the actual recycling rate.

The Borough is pleased with the recycling rate that it has achieved over the last 10 years, but realizes that it can be improved. Additional storage space within the existing recycling center is necessary prior to any public education campaigns to increase the recycling rate. The Borough would also like to coordinate recycling efforts with neighboring municipalities, which could, in turn, affect the recycling center expansion plans.

The greater challenge to the Borough is finding an adequate number of volunteers to sort materials. Ten retired citizens have volunteered their weekday mornings to sort materials at the recycling center. Mr. Knepshield commented that on average four assist the Borough on a daily basis, which is barely sufficient for handling the workload within the given time commitment. From his perspective, facility expansion is important, but increasing the volunteer base is of greater importance.

Task 1: Assist the Borough in determining the feasibility of a working partnership with neighboring municipalities for recycling.

Leechburg Borough requested assistance with assessing the feasibility of a working partnership with neighboring municipalities for recycling. Neighboring boroughs are more likely to provide a feasible working partnership than townships due to tighter population densities. **Table 2** presents contact information and notes from telephone conversations with Apollo, North Apollo, Freeport, Vandergrift and West Leechburg boroughs. **Appendix A** contains the proposal letters that were sent to each Borough.

For nearby townships, curbside recycling programs are not recommended due to the lack of population density. It is more feasible to serve local township residents with a drop-off program. Through coordination with township managers, recycling signs can be posted along township roads to direct nearby residents to the recycling center.

Table 2: Contacts for Working Partnerships on Recycling

Borough/County	Contact	Phone	Current Recycling Program
Freeport Armstrong Co.	John Seagriff; Borough President	295-2251	None
Apollo Armstrong Co.	Linda Benninger; Borough President	478-4201	Drop-off program with a vendor
North Apollo Armstrong Co.	Eugene Burns; Borough President	478-4802	None
Vandergrift Westmoreland Co.	Steve Delledonne; Borough Secretary	567-7818	Curbside services provided by Borough workers
West Leechburg Westmoreland Co.	Tim Grantz; Borough President	845-6488	Considering a drop-off program with PA Greenways in Westmoreland Co.

The local municipalities in **Table 2** will contact Leechburg Borough for more information on a working partnership. All of the municipalities that are listed in **Table 2** have discussed or plan to discuss this possibility at Borough meetings. To date, Freeport and Apollo Boroughs have declined on the invitation to form a working partnership for recycling. North Apollo Borough has expressed an interest. Vandergrift and West Leechburg Boroughs have yet to meet.

Vandergrift is the only neighboring municipality with a curbside recycling program. Borough workers collect aluminum and tin cans, and three colors of glass through the curbside program, and haul the loose materials to a processing facility in a Borough-owned truck. It might be more economical for Vandergrift to haul materials to the Leechburg recycling center for baling prior to vendor processing. For a partnership to be of interest to Vandergrift, Steve Delledonne, the Borough Secretary and Recycling Coordinator, commented that the Borough would need to retain its performance grant money to cover hauling costs and program administration.

Type of Service: There are many issues to discuss for a working partnership to be effective, such as responsibility for hauling, the allocation of performance grant money, and the purchase of equipment. This section focuses on recommendations for equipment since these decisions are technical.

There are three levels of service that can be discussed as part of a working partnership for recycling:

- **Level 1:** Drop-off program only
- **Level 2:** Curbside program only
- **Level 3:** Curbside and drop-off program

Level 1 Residents in neighboring municipalities currently have the opportunity to drop-off materials at the Leechburg recycling center. To increase the volume of material generated through a drop-off program, 15 to 20 cubic yard recycling bins can be placed within neighboring municipalities. If this alternative is of interest, then the Borough will need to provide specifications to the municipality regarding the size and type of drop-off bin to purchase.

Several communities in Allegheny County use recycling trailers to serve as drop-off bins rather than roll-off or recycling dumpsters. Some examples of recycling trailers are provided in Appendix B. The advantages of recycling trailers over other types of bins and dumpsters are the following:

- Less of chance of refuse contamination due to compartmentalization and appearance.
- Easy to relocate if site becomes problematic.
- Can be hauled to a recycling center with either a pick-up or one-ton truck.

Recycling trailers can be designed with several compartments, which would help to reduce sorting time at the recycling center. If additional information on recycling trailers is desired, Peter Previte, the Allegheny County Recycling Coordinator, can be contacted at 412-578-8390 or the SWANA Technical Assistance report for Cheswick Borough can be viewed on the DEP website at <http://www.dep.state.pa.us/dep/deputate/airwaste/wm/RECYCLE/Recycle.htm>. Click on the Technical Assistance link in the Recycling Coordinator's Corner.

Level 2: Curbside services involve the purchase of collection bins and could possibly involve the purchase of recycling trucks. Collection equipment contracts for recycling are available through the Pennsylvania Department of General Services (DGS). The advantage of procuring equipment through DGS is that the bidding requirement is waived because contracts have already been developed through the Commonwealth's competitive bidding system. For

additional information, the DGS can be contacted at 717-787-1105 or visited at www.dgs.state.pa.us. The number of curbside bins to purchase can be estimated from the number of housing units within a municipality. This information is available from 2000 US Census data.

Level 3: This level of service combines the first two levels. The recommendations for equipment purchases are the same as those described in levels one and two.

Planning for Working Partnerships: The reality of working partnerships for recycling, as Leechburg Borough has expressed, is contingent upon procuring 902 grant funds for recycling center expansion. Assuming that the Borough submits an application for expansion in October 2001, it might be a year to two years before expansion is complete. In the meantime, the Borough can establish some preliminary plans with neighboring municipalities to coordinate recycling efforts. Council members and supervisors of neighboring municipalities should be made aware of the timeline and contingencies of program expansion. The advantage of discussing partnerships before expansion planning is that it can improve the chances of a successful grant application.

There are several other important issues to discuss in planning a coordinated recycling effort. Responsibility for the purchase of curbside bins, drop-off containers, and other equipment is important to discuss as well as program administration, education, advertisements, and solicitation of additional volunteer help for the recycling center. The expertise of State Regional Recycling Coordinators, such as Sharon Svitek and Bob Emmert, and your County Recycling Coordinator Sally Gauker can greatly facilitate the planning process.

Task 2: Recommend material storage planning volumes, equipment storage locations for ease of access, and the location of signs

Leechburg Borough is in the preliminary stages of planning for recycling center expansion. At this point, the Borough has not retained an architect, and has not yet submitted a 902-grant application for expansion. Space is available on the current property for expansion. For planning purposes, the Borough requested technical assistance for estimating the amount of space that will be needed as well as suggestions for equipment storage and sign locations.

Equipment Storage Locations: The Leechburg Borough Recycling Center is a well-planned operation, which appears to run efficiently. A great deal of time went into planning flow patterns and material storage locations for equipment. Unless the volunteers feel otherwise, expansion of the facility should simply involve providing additional storage space for baled material and new equipment as well as access doors.

Mr. Kneppshield expressed an interest in a horizontal baler to replace the vertical baler for newspaper. A horizontal baler requires more floor space than a vertical baler, but, with facility expansion, several locations toward the south end of the building should become available.

Garage space for Borough equipment can be considered as part of the recycling center expansion. However, the Borough should note that 902-grant reimbursement for facility expansion is prorated if equipment, which is not used for recycling, is included in the design plan. Garage space for the recycling truck is also not reimbursable.

Recycling Signs: The recycling center receives a great deal of drop-off material. Borough residents drop off newspaper, magazines, catalogs, envelopes, and cardboard at the recycling center. As the Borough is aware, many visitors travel to Leechburg to drop-off materials, as well. To assist new Borough residents and visitors, we recommend that directional street signs to the recycling center be posted along Routes 56 and 66 and other key roads within the Borough. The Pennsylvania Department of Transportation (PennDOT) will provide and post these signs along State roads at no cost to the Borough.

The Borough should also consider directional signs to the recycling center for local roads and an entrance sign at the facility. Reimbursement for these signs can be requested through a 902-grant. The entrance sign should recognize the Pennsylvania Department of Environmental Protection as the major source of funding for the recycling center. The directional signs for local roads should be consistent in design with the ones that PennDOT will place on State roads. For more information on signs, Steve Young, the Recycling Coordinator for the Apex Environmental, Inc. of the Bureau of Environmental Quality, can be contacted at 717-783-3616.

Planning Volumes: It is difficult to estimate the space required for storage on the basis of potential working partnerships. At this point, we know that some neighboring boroughs are interested, but the level of service to be provided has yet to be determined. Additionally, given a level of service, it is still difficult to predict the level of participation.

We can plan for facility expansion on the basis of the maximum amount of storage space needed with consideration for hauling frequency. In other words, there is a threshold volume for each material that must be reached before a broker will haul. The maximum amount of storage space needed occurs when all materials reach the threshold volume at the same time. If we plan for this situation, then it is not necessary to consider the possibility of working partnerships with neighboring municipalities. The additional volume of material collected through either greater recycling rate within Leechburg or program expansion to other municipalities will affect the frequency of hauling, but not the amount of storage space required.

Table 3 lists the threshold volume for each material, maximum stack heights, and floor space requirements. A Gaylord box has a footprint of nine square feet, and a market size bale requires 20.8 square feet. An additional 10% is added to the total to account for space between stacks.

Table 3: Material Spatial Requirements for the Recycling Center

Material	Hauling Threshold	Maximum Stack Height	Floor Space Requirement
Cardboard	36 bales	4	190 SF
Newspaper	32 bales	3	230 SF
Office paper and Glossies	None ¹	2	40 SF
Aluminum and Bi-metallic Cans	35 bales tin + cans	4	200 SF
Glass (all colors)	20 boxes	2	90 SF
Plastics (types 1 & 2)	50 bales	3	360 SF
FLOOR SPACE NEEDED FOR BALED MATERIAL STORAGE			1,200 SF

Note 1: The broker for office paper and glossies picks up between 8 and 10 Gaylord boxes of material every two weeks, but has not set a threshold amount.

Currently, the Recycling Center has approximately 1000 square feet of space available inside the facility for storage, and uses space outside the facility for plastic bale storage. A horizontal baler will require an additional 150 square feet (18 x 8 feet) of space. If space is included for this new equipment and additional access pathways, then the floor space requirement is at least 1500 square feet, which is 33% more than the amount currently available. Therefore, the recommendation is to add at least 500 square feet of storage space. The additional floor space requirement can increase depending on the locations available for facility expansion. Preliminary plans from an architect can provide a better sense of the floor space requirements and the cost of expansion.

THE REAL CHALLENGE OF PROGRAM EXPANSION

Mr. Knepshild recognizes the value of the Borough residents who have volunteered their time to sort materials. It is difficult to find volunteers who can work on weekdays on a consistent basis. Expansion of the program for service to neighboring municipalities will certainly add to the amount of time required for material sorting, and possibly even require an 8 AM to 5 PM Monday through Friday operating schedule. Currently, the center operates from 8 to 11 AM.

Program expansion may allow the Recycling Center to become profitable through sales and performance grant money to the point where hired help is an option. With constant changes in market prices, however, sustained profits cannot be assumed. Better alternatives include increasing the volunteer base, and purchasing new equipment that can make material processing

more efficient. To improve efficiency, the purchase of a horizontal baler, which requires only one person to operate rather than two or three, can be considered. Three suggestions for increasing the volunteer base are listed below.

1. Approach other organizations about supplying volunteer time. The Boy Scouts and Girl Scouts of America have been active in recycling projects in other communities. Some high school curriculums require students to volunteer a set amount of time in community-based organizations.
2. Approach other municipalities about supplying volunteer time. With program expansion to other communities, it may be necessary to make the working partnership contingent upon the community supplying volunteer help.
3. Establish reward programs for the volunteers and community. Depending on the Borough resources, any number of reward programs could be established, ranging from gift certificates for the theatre and local restaurants to tickets for a ball game in Pittsburgh.

The current corps of volunteers has done a tremendous job of maintaining the recycling center. The Leechburg Recycling Center is clean and well organized; and the volunteers do a great job of sorting and processing materials in a timely fashion. Such an effort is worthy of recognition. Waste Watcher awards are given annually to creative recycling and waste reduction efforts of public and private organizations throughout the Commonwealth. Such an award could bring State recognition to the Borough for its recycling efforts, and hopefully lead to greater volunteer interest.

CONCLUSIONS AND RECOMMENDATIONS

The Borough has three sets of meetings to plan for the process of developing a 902-grant application in time for the October deadline. This section is set up to provide the Borough with note cards for each meeting.

WORKING PARTNERSHIPS FOR RECYCLING

Local municipalities are interested in a working partnership for recycling with Leechburg Borough. In the near future, a meeting should be held with local representatives as well as Sally Gauker, the County Recycling Coordinator, to discuss coordination. Some issues to discuss include:

- **Type of Service:** A partnership can be arranged for three levels of service. Level 3 combines levels 1 & 2.
 - Level 1: If drop-off, then specifications for the type of bin to purchase can be discussed. We recommend the purchase of recycling trailers because they are easy to relocate, can be hauled with a pick-up or one-ton truck, and can be ordered with several compartments, which would allow for material pre-sorting.
 - Level 2: If curbside, then the number of curbside bins required can be determined from 2000 US Census data.
- **Responsibility for Service and Management:** Regardless of the type of service, responsibility for the purchase of equipment, material collection and hauling, and management of performance grant money should be addressed.
- **Ordinances:** Vandergrift is the only neighboring municipality with a recycling ordinance. Other municipalities involved should enact a recycling ordinance before applying for 902-grant reimbursement for recycling equipment.
- **Public Education:** Each municipality involved should consider publicizing its efforts as well as providing education on recycling through the local media and school districts.
- **Volunteer Help at the Recycling Center:** The Leechburg Borough Recycling Center needs more volunteers, and one way to increase volunteer numbers is to ask for help from neighboring municipalities.

RECYCLING CENTER EXPANSION

The Leechburg Borough Recycling Center has 1000 square feet of space available for bale storage, but needs at least 1500 square feet. A local architect can provide assistance with total space requirements and cost estimates. Some key points for facility expansion planning include:

- At least 500 square feet of additional storage space is needed for bale storage, a horizontal baler, and additional access pathways.
- Locations for facility expansion and the placement of new equipment need to be discussed with an architect.
- Garage space for a recycling truck and Borough-owned equipment that is not used for recycling is not reimbursable through 902-grant funds.

PADEP 902 RECYCLING GRANTS

The Borough can submit a 902-grant application starting in July. Applications will be due in the first week of October. Prior to submittal of a 902-grant application, the Borough should arrange for a pre-application meeting with either Sharon Svitek or Bob Emmert of the PaDEP. At the pre-application meeting, it will be important to discuss the following:

- Recycling center expansion plans
- Interest in new recycling equipment, such as a horizontal baler and recycling truck.
- Plans for working partnerships with neighboring municipalities on recycling.
- An entrance sign to the recycling center and directional signs on **local** roads.
- Borough ordinances as related to Act 101