

June 15, 1999

Mr. John Marquart  
Manager  
Edgewood Borough  
2 Race Street  
Pittsburgh, PA 15218

**Subject:** Evaluation of Recycling Options for Edgewood

Dear John:

This letter is to provide Edgewood Borough with the results of R.W. Beck's evaluation of recycling options for Edgewood Borough.

Edgewood Borough reported that the cost to keep its curbside recycling program—a program that is not mandated by Act 101—had become prohibitive when USA Waste notified the Borough of a more than 50 percent increase from 1998 to 1999. Given the layout of Edgewood Borough—compact, with easily navigable streets lined with single family dwellings—there is no reason that the cost to have/keep curbside recycling should be prohibitive.

At the time, however, the Borough chose to eliminate the curbside program and implement a voluntary drop-off program until it had an opportunity to review options. The need to move forward with consideration of the Borough's options became increasingly apparent as residents began to voice their dissatisfaction with the change.

R.W. Beck has looked at options for both curbside and drop-off collection for Edgewood Borough, noting that the Borough would prefer not to get into the business of collection.

The Borough also requested that R.W. Beck review its composting program with an eye toward improving operations.

## **EVALUATING RECYCLING OPTIONS FOR EDGEWOOD BOROUGH**

Edgewood Borough's population is only around 3,700, so the Borough is not required to operate a curbside recycling program for its residents. It chose to do so several years ago as a service to its residents, and it appears that the service was very popular and participation was high, based on citizen response when the program was discontinued at the beginning of 1999. A survey conducted earlier this year, included as Attachment 1, confirmed the popularity of this program. Having curbside recycling available makes recycling convenient for Borough residents, and once tonnage figures begin coming in for 1999, it will probably be obvious that curbside recycling also diverts more recyclables from the waste stream than a drop-off program.

The Borough is small enough that drop-off recycling should be fairly convenient as well. Edgewood Borough is only three fifths of a square mile, so delivering recyclables to drop-off containers would not require excessive travel. If the drop-off program had been implemented as a new program, and not a replacement for the curbside program, this service might have been considered as satisfactory by the residents. It is difficult to eliminate a popular service without some amount of backlash.

This evaluation considers the following: 1) options for reinstating curbside recycling using the private sector; 2) implementing municipal collection of recyclables; 3) options for restructuring the drop-off program.

### **CURBSIDE RECYCLING USING THE PRIVATE SECTOR**

Prior to discontinuing the curbside recycling program, USA Waste was providing weekly curbside collection of municipal waste, and biweekly commingled collection of recyclables. Residents pay a \$75 annual refuse fee to the Borough for municipal waste collection and disposal, and the Borough pays USA Waste for the service. In 1998, the Borough paid approximately \$15,000 out of general funds to USA Waste for the curbside recycling program. USA Waste proposed a more than 50 percent increase for 1999, however, with curbside collection estimated at \$23,000.

Table 1 presents the approximate cost per household for municipal waste collection and recycling services based on the figures cited above.

**TABLE 1  
COSTS FOR MUNICIPAL WASTE AND RECYCLING SERVICES**

<b>Service</b>	<b>Individual Service Annual Cost</b>	<b>Individual Service Total/HH**</b>	<b>Waste/Recycling Services Total/HH**</b>
Municipal Waste Collection	127,500**	75.00	75.00
Curbside Recycling—1998	15,000	8.82	83.82
Curbside Recycling—1999	23,000	13.53	88.53

\*Based on 1,700 households

\*\*Based on 1,700 households @ \$75/each

The estimated total per household cost for municipal waste and recycling collection for 1999 is \$88.53. This total compares very favorably with the experience of other municipalities in southwestern Pennsylvania, as evidenced in Table 2.

Because of this and indications of Borough residents' willingness to pay something to recycle (addressed in "Promoting/Funding the Program" below), it may even make sense to explore the possibility and cost of adding newspaper, and perhaps

magazines, to a renewed curbside program. This is something that residents would probably appreciate, and adding paper would boost the diversion rate considerably. Alternatively, if adding paper seems too costly, it may be worth investigating collecting paper through a voluntary drop-off program.

**TABLE 2**  
**RECYCLING/WASTE MANAGEMENT PROGRAM COSTS**  
**(SOUTHWESTERN PENNSYLVANIA MUNICIPALITIES)**

<b>Municipality</b>	<b>County</b>	<b>Materials Collected</b>	<b>Collection Frequency</b>	<b>Commingled / Separate</b>	<b>Municipal / Contracted/ Individual</b>	<b>Revenue Sharing</b>	<b>Who Pays</b>	<b>Cost/HH Total</b>	<b>Cost/HH Recycling</b>
Freedom Boro	Beaver	Al G1 G2 P1 P2 S	Biweekly	Commingled	Contracted	Set % to municipality	Residents	\$99.96/yr.	Not known
North Sewickley Twp.	Beaver	Al G1 G2 Mag N P1 P2 S	Variable	Commingled	Individual	N/A	Residents	Variable	\$16.00/yr. *
Pine Twp.**	Allegheny	Al G1 G2 Mag N P1 P2 S	Weekly	Commingled	Contracted	N/A	Residents	\$92.40/yr.	Not known
Reserve Twp.	Allegheny	Al G1 G2 P1 P2 S	Biweekly	Commingled	Contracted	5% to municipality	Residents	Approx. \$96.00/yr.	\$1.45/mo.
Sewickley Boro	Allegheny	Al G1 G2 N P1 P2 S	Biweekly	Commingled	Contracted	N/A	Residents	\$94.56/yr.	Not known

\*Rate one hauler charges for annual recycling sticker

\*\*Pine is part of a multi-municipal contract with Marshall, McCandless and Hampton

Edgewood Borough should also consider the possibility of some type of cooperative arrangement with a neighboring municipality to manage municipal waste and recyclables. As illustrated in Table 2, the lowest cost per household belongs to Pine Township (Allegheny County). Pine Township is a non-mandated municipality that participates in a multi-municipal contract for the collection of municipal waste and recyclables, and the Township's Assistant Manager reported that the Township entered into this arrangement as a means of keeping costs under control. It is unlikely that Pine Township would have gotten this price without the cooperative arrangement, since the price covers weekly recyclables collection and includes collection of newsprint and magazines in addition to commingled containers. By comparison, Edgewood Borough's estimated per household cost for 1999 covered biweekly collection of recyclables and did not include newsprint and magazines.

## **MUNICIPAL COLLECTION OF RECYCLABLES**

While not the preferred method of managing collection of recyclables in Edgewood Borough, the Borough has expressed interest in determining what would be required and the cost of implementing a municipally operated curbside collection program. An estimate of the cost for the Borough to implement a collection program was calculated using R.W. Beck's Collection Efficiency Model, a computer program developed to estimate collection costs based on various data points including number of households, estimated annual tonnages of recyclables, number and wages of employees, proximity to a materials recovery facility, and vehicle and maintenance costs. In order to arrive at this estimate, R.W. Beck used actual employee data from Edgewood Borough, along with estimates for the other data points based on the experience of other municipalities in Pennsylvania. Table 3 illustrates inputs used for four different scenarios: Scenario 1--Biweekly collection, commingled materials; Scenario 2--Biweekly collection, commingled materials and paper; Scenario 3--Weekly collection, commingled materials; Scenario 4--Weekly collection, alternating commingled materials and paper.

### **Results of Analysis**

Based on calculations from the collection efficiency model, the annual collection cost for the Borough to operate a municipal collection program ranges from \$8.55 to \$12.80 per household per year. The results are summarized in Table 4. The model includes direct costs of labor up to the first level of supervision and vehicle capital and O&M. It does not, however, include costs associated with such things as tipping fees at a materials recovery facility (MRF), administration, legal matters, or contracting for a backup collection vehicle in the event of the breakdown of the regularly scheduled vehicle (this model assumes operation of only one vehicle).

In order to calculate an overall cost for municipal management of recyclables, any costs associated with processing recyclables would need to be included. For the purpose of this study, it is assumed that recyclables collected from Edgewood Borough would be delivered to Pittsburgh Recycling at a cost of \$10 to \$15 per ton

for commingled materials, and there would be no charge for newsprint and magazines. The average amount, \$12.50 per ton for

**TABLE 3  
DATA USED IN COLLECTION EFFICIENCY MODEL**

<b>Inputs for Automated Worksheet</b>	<b>Scenario 1*</b>	<b>Scenario 2*</b>	<b>Scenario 3*</b>	<b>Scenario 4*</b>
Number of HHs served	1,700	1,700	1,700	1,700
Recyclables collected per yr. (tons est.)	100	220	100	220
Avg. collection days/HH/yr.	26	52	26	52
Avg. days/week collection crews work	1	2	1	2
Average set out rate	75%	75%	75%	75%
Average seconds per stop	26.4	26.4	26.4	26.4
Time at yard prior to start of route	5	5	5	5
Time to deliver/unload materials at MRF	90	90	90	90
Time at yard for post-trip inspection, etc.	10	10	10	10
Avg. hourly pay for driver	10.00	10.00	10.00	10.00
Avg. hourly pay for laborer	6.50	6.50	6.50	6.50
Multiplier for overtime pay rates	1.5	1.5	1.5	1.5
% of hourly rate to pay for benefits	40%	40%	40%	40%
Weeks worked per year	52	52	52	52
Capital cost of collection vehicle	\$35,000	\$35,000	\$35,000	\$35,000
Average truck capacity (tons)	6	6	6	6
Estimated scrap value at end of life	\$3,500	\$3,500	\$3,500	\$3,500
Est. annual vehicle operation/maintenance	\$3,500	\$3,500	\$3,500	\$3,500
Interest to finance vehicle purchase	6%	6%	6%	6%
Expected years of useful life of vehicle	7	7	7	7

**TABLE 4  
COST PER HOUSEHOLD – MUNICIPAL COLLECTION**

<b>Collection Option</b>	<b>Annual Cost per HH</b>	<b>Monthly Cost per HH</b>
Scenario 1	8.55	0.71
Scenario 2	9.62	0.80
Scenario 3	12.80	1.07
Scenario 4	12.80	1.07

commingled materials, is used for estimating total cost. When the tipping fee at the MRF is added to the estimated cost of collection, the estimated annual cost per household would range from \$9.29 to \$13.54 per household annually, or \$.77 to \$1.13 per household per month. These costs are summarized in Table 5.

**TABLE 5**  
**COST PER HOUSEHOLD – MUNICIPAL COLLECTION AND MRF TIPPING FEE**

<b>Collection Option</b>	<b>Annual Cost per HH</b>	<b>Monthly Cost per HH</b>
Scenario 1	9.29	0.77
Scenario 2	10.36	0.86
Scenario 3	13.54	1.13
Scenario 4	13.54	1.13

The estimated cost for the Borough to provide municipal collection of recyclables is expected to be close to or greater than what has been offered by the private sector once the cost of administration and any other costs that might be incurred by the Borough are added. Given that the Borough is not able to provide this service at a cost that is significantly less than the private sector, and the Borough’s desire to avoid providing municipal collection services, it appears that implementing municipal collection is not the best option for the Borough.

### **DROP-OFF RECYCLING**

As noted earlier, a significant number of Borough residents have expressed dissatisfaction with the Borough’s decision to discontinue the curbside recycling program and place drop-off containers for the collection of recyclables in the Borough. Because of the Borough’s small size, taking materials to a drop-off point in the Borough should not present a hardship for most residents, but a drop-off program seems more cumbersome after residents have had the convenience of a curbside program.

A drop-off program could work very well for Edgewood, however, if the Borough were to consider some changes that would make the program more convenient and more aesthetically pleasing. Currently, the Borough is using rolloff containers provided and serviced by USA Waste which are placed in a maintenance area behind the municipal building and at Dickson Park. The containers at the park are not available 24 hours a day, as they are located in an area that is closed off by gate during certain hours. The containers at the municipal building are located in an area where mud is a problem when it rains, and this makes dropping materials off at this location an unpleasant experience. The rolloff containers are also not specifically designed for recycling, and therefore are not very easy to use.

If the Borough decides that it wishes to continue with providing recycling services through a drop-off program, rather than curbside collection, it should explore the use of different collection containers and better placement to make the containers

more convenient for residents. Preferably, the containers should be easier to use, aesthetically pleasing, designed to prevent contamination (to the extent possible), and placed where they are highly visible to the public. Currently, the cost cited for the drop-off program is \$85 per pull to service the containers, or approximately \$850 to \$1,020 per year, based on data provided by Waste Management. To date, only 15.02 tons have been recycled in 1999. At this rate, the annual tonnage is expected to be around 36 tons, compared to around 100 tons of commingled materials in previous years.

If the Borough decides to reinstitute a curbside program similar to or the same as the previous program, however, it may wish to consider providing a drop-off option for newsprint and magazines, which are not collected at the curb. Diverting paper from Borough residents would help to boost the Borough's diversion rate, and it is easier for residents to separate and deliver paper to a drop-off site than most other materials.

## **PROMOTING/FUNDING THE PROGRAM**

### **Promoting the Program**

Edgewood Borough's diversion rate for commingled materials only will tend to be lower than other programs in Pennsylvania that include newsprint, so the Borough needs to maximize the amount of commingled materials collected from residents and promote commercial and institutional recycling as a means of keeping this rate as high as possible. Therefore, regardless of whether or not the Borough decides to return to curbside collection of recyclables or continue with a drop-off program, public education will be a key component in ensuring success.

The most important issue in establishing an effective public education program is to set goals in advance. The Borough should determine in advance what it wants to accomplish through its public education efforts. The goals should be to:

- Make the public aware of the program, whether it is curbside or drop-off;
- Define requirements for users;
- Encourage waste reduction; and
- Ensure the public understands the value of recycling.

The Borough should also communicate clearly the requirements for preparation of recyclables accepted in the Borough's program. There are a variety of mechanisms for delivering this and other information to the public. Preparation and printing of these types of materials is eligible for Section 902 recycling program grant funding, but may also present opportunities for partnerships with local businesses that have an interest in recycling. Some ideas for consideration include:

- Utility or tax bill inserts with program information;
- development of articles for local newsletters concerning Edgewood Borough's program and recycling issues in general;
- Entering into cooperative efforts with the following to distribute information to:
  - Local businesses;

- Schools;
  - Garden clubs;
  - League of Women Voters;
  - Libraries;
  - Other environmental organizations; and
- Developing a logo and/or slogan that gives the program an identity that is recognizable by the public. This could involve public participation by making it a contest for either students or for all Borough residents.

Any materials developed for the program should probably be tested for quality purposes. The Borough could ask for review by Council or committee members, or by citizens that simply have an interest in recycling.

To determine which public education vehicles have been most successful in reaching Borough residents, the Borough may wish to consider polling residents who call about the program or surveying a random sample of residents to learn what has been effective. This could be done for a set period of time, and the data could then be used to refine the public education program. The Borough should also use feedback from residents to refine the materials if it is found that any of the information is difficult to comprehend or misleading.

### **Funding the Program**

Based on the figures shown in Table 1, reinstating curbside recycling would cost approximately \$13.53 per household per year based on the most recent quote from USA Waste. This appears to be a reasonable price and in line with what other municipalities are paying for a similar service. Until now, the Borough has been paying the cost of recycling out of general funds. However, a recent survey of residents has indicated that 78 percent of residents who responded would be willing to pay an additional \$20 per year for curbside recycling. Given that result, the Borough should consider increasing its annual refuse fee to include recycling, along with any associated costs that must be borne by the Borough.

Table 6 provides estimates for funds that may be returned to the Borough through the Section 904 Performance Grant program under a curbside scenario. Estimates are based on past experience and projected increases. The expected revenue from this grant program, based on past diversion, would be around \$2,400. While this certainly does not cover the cost of the recycling portion of the program, it would help to offset the cost if the Borough were to continue to pay for this service from general funds. If it is determined that residents will pay for recycling as part of their refuse fee, any return from the Section 904 grants can be used to offset any other costs to the Borough associated with recycling.

The expected revenue from the Performance Grant program would only be around \$535 if the Borough continues with its drop-off program. This is based on the estimated diversion of 36 tons annually, plus 36 tons of commercial materials. The diversion rate, based on a total tonnage of 72 tons, would be around 2.4 percent, compared to around 7 percent based on past diversion, as indicated in Table 6.

The cost of public education efforts can be funded at a 90 percent level through Section 902 Municipal Recycling Program grants.

## COMPOSTING

The limitations of this technical assistance grant prevented a thorough review of Edgewood’s composting program. However, based on information reported by the

**TABLE 6**  
**ESTIMATED PERFORMANCE GRANT AWARD**

Tonnage Collected		Waste Generation*	Diversion Rate	Expected Grant Award**
Residential	Commercial			
100	100	2,960	7%	2,400
150	150	2,960	10%	4,500
220	220	2,960	15%	8,800

\*Assumes waste generation at .8 lbs./person/year, based on population of 3,700

\*\*Based on 1:1 ratio of residential to commercial recyclables only. Under new formula,

every additional ton of commercial material is eligible for \$10 per ton.

Borough in its program application and at a meeting in March, the program appears to operate efficiently and produce good quality material.

The large number of trees in the Borough, with a significant percentage of sycamores, necessitates almost constant collection of leaves. It would be difficult to reduce collection without—as with the elimination of curbside recycling—eliciting a negative response from residents.

The Borough may wish to explore adding brush and grass to its collection program, both of which could be beneficial to the composting process. This could probably be accomplished by adding a trailer to the existing vacuum system. DEP’s composting guidelines state that grass would need to be incorporated in the windrows within 24 hours of delivery to the site, at a rate of no more than one part grass to three parts leaves. Adding grass would boost the nitrogen content of the compost and hasten the composting process, but could result in odor problems if not managed properly. Brush and woody materials would need to be chipped and could be added as a bulking agent, thus improving aeration of the windrows.

A chipper would be needed to manage the brush and woody material. Chipper purchases are eligible under the Section 902 Recycling Program grant, but DEP usually tries to encourage sharing of existing chippers prior to approving purchases. If there is an interest in adding brush to the program, the Borough should meet with a representative from the DEP regional office to determine whether or not an application for a chipper would be funded, or if a neighbor has one that could be shared.

Adding these services would add cost to the program. Assuming there is enough space on site, the Borough could accept materials from other municipalities or from nurseries, landscapers and similar businesses for a fee. The fee could help to offset some of the costs of operating the site. This is an option that should be considered regardless of whether or not the Borough decides to collect grass and brush, because there are probably landscapers and similar service operators that would be interested in delivering materials to the site.

## CONCLUSIONS

- Edgewood Borough discontinued its curbside recycling program and implemented a drop-off program in response to a significant increase in cost presented by the contractor. Borough residents voiced their dissatisfaction with the decision, prompting the Borough to review its options.
- The per household cost proposed by the contractor for curbside recycling services is very close to what other municipalities with similar programs are paying.
- Entering into a cooperative arrangement with other municipalities could possibly result in lower costs for waste and recycling services for all participants.
- The estimated cost for municipal collection of recyclables is not significantly different from the cost proposed by the private sector.
- Delivering materials to the Borough's drop-off sites should not present a hardship for most residents, though it is less convenient than curbside recycling.
- The drop-off program would benefit from changes that make it more convenient, visible and aesthetically pleasing.
- The Borough's diversion rate is expected to be less than half of its previous diversion rate with the drop-off program rather than curbside recycling.
- Adding newspaper to a renewed curbside program or to the existing drop-off program, collected at the curb or as a new drop-off item, while more costly, could significantly boost the Borough's diversion rate, which would also boost the return from the Section 904 Performance Grant program.
- Public education needs to be boosted whether the Borough returns to curbside recycling or continues with a drop-off program. Clear goals are needed to implement a program that boosts diversion and reduces contamination.
- A Borough survey has indicated that a majority of residents are willing to pay for recycling services. If residents are willing to pay, the Borough could incorporate the cost into the fee currently charged to residents for waste services. This would eliminate the need to budget additional funds to pay for recycling. Section 904 Performance Grant funds can help to offset any costs incurred by the Borough for managing the recycling program.
- The Borough's composting program seems to be operating efficiently and producing a good quality product.

## RECOMMENDATIONS

- Edgewood Borough should consider reinstating its curbside recycling program at the earliest feasible date (assuming similar cost quotes for the service at this

point), and include the cost as part of a refuse/recycling fee charged to residents.

- The Borough should investigate the possibility of a cooperative contract with neighboring municipalities for municipal waste/recycling services as a means of reducing cost.
- The Borough should investigate adding newsprint and magazines to its program to boost its diversion rate, either at the curb or as drop-off materials supplementing the commingled materials collected at the curb.
- The Borough should review its public education efforts, establish clear goals, and design and implement an education campaign aimed at boosting diversion and reducing contamination, regardless of whether it continues to operate a drop-off program or reestablish a curbside program.
- The Borough should consider adding grass and brush to its composting program and obtaining the equipment needed to manage this material.
- The Borough should look into methods of generating revenues to support the composting program, particularly opening the site to landscapers, nurseries, and similar operations for delivery of materials for a fee.

Edgewood Borough, as a nonmandated municipality, is already doing far more than required through its drop-off recycling and composting programs. However, with a sophisticated population that demands services that meet higher than average expectations and that is willing to pay for services that meet these expectations, the Borough should certainly consider taking actions that are in line with these expectations. The recommendations provided above should help the Borough to make changes that are in line with the desires of its residents.

Sincerely,

Sandra L. Strauss  
Environmental Analyst

cc: Kathleen Kilbane, SWANA  
Carl Hursh, DEP  
Debbie Miller, R.W. Beck