



April 18, 2001

Mr. Jay Marsden
Township Supervisor
Richland Township Municipal Building
322 Schoolhouse Road
Johnstown, PA 15904

Subject: Evaluation of Richland Township's Solid Waste and Recyclables Collection System

Dear Jay:

This letter is to provide the Richland Township with the results of R.W. Beck's evaluation of the Township's current open-subscription waste and recyclables collection system.

The Township has expressed concerns that: (1) the current open-subscription system maybe more costly to Township residents than other alternatives; and (2) the grass collection program offered by the Township is a burden. The goals are to determine how the Township's system compares with that of other communities in the Commonwealth in terms of cost and efficiency with an eye toward recommending the best system for the Township and improve overall collection efficiencies.

EVALUATION OF RICHLAND'S COLLECTION SYSTEM

Residential solid waste (RSW) generated in the Richland Township is currently collected under an open subscription system. In this system, the Township has licensed four haulers with whom the residents can contract directly. The level of service and fees are negotiated between the resident and the hauler. Richland Township offers every-other week collection of recyclables through a municipally contracted hauler and seasonal weekly collection of grass clippings as a municipal service. The contracted hauler for the recycling provides this service using a truck purchased by the Township. Grass clippings collected by municipal personal requires up to three collection days per week to service the entire community.

There are approximately 5,100 residential units in the Township made up of 4,279 households, 618 doubles and 230 trailers.

Under the current system, the Township has experienced the following:

- The collection system is disjointed with three different waste streams being collected under three different arrangements.

- The recycling collection vehicle is worn out and needs to be replaced.
- Grass clippings collection requires a large amount of municipal effort and the Township wants to examine alternatives management strategies.
- The cost to Richland residents for service provided is higher than in other Townships that contract for services for their residents.
- The Township wants to determine if the system can be made more efficient and cost effective by configuring a program that provides all the services by a single contractor.
- Richland is a growing community, both residential and businesses.
- No formal bulky waste collection program in place for residents as part of current system.

CURRENT SYSTEM COSTS

RSW is collected by any one of the four licensed haulers for an average cost of approximately \$125 per household per year. Recyclable materials are collected every other week by the municipal contract hauler, for an annual cost to the Township of \$36,000. Collection includes curbside separation of commingled glass, aluminum and tin cans and plastic bottles, but does not include newspaper. Grass is collected by a municipal crew in plastic bags every week for the entire growing season, from May through September. The actual cost of this component is not segregated in the overall municipal budget. But if a two-person crew is used for three days per week at a rate of \$15.00 per worker, including benefits (inflated to factor in some vehicle operating costs), the cost is approximately \$15,000 annually. All three collection system costs combined derives an annual cost per household of approximately \$135.00, or \$11.25 per month.

COMPARISON WITH OTHER TOWNSHIPS

The \$135 per household rate paid on average by the residents of the Township is actually competitive with rate being assessed in other communities. However, the level of services can vary, and while costs are similar, services can be more extensive in other municipalities. For instance, Camp Hill Borough (Cumberland County) residents pay slightly less than \$120 per year for weekly unlimited RSW, weekly commingled curbside recycling collection that includes newspaper and one annual bulky waste or Spring Cleanup collection. So, when comparing rates, level of service must also be considered. Table 1 shows rates paid by other Pennsylvania communities and the services associated with the fees.

OPTIONS FOR WASTE COLLECTION AND RECYCLING IN THE RICHLAND TOWNSHIP

There are almost as many options for the collection of municipal waste and recyclables as there are municipalities that have waste collection and recycling programs. However, the basic options are as follows:

- Open subscription system (the current system)

TABLE 1
SUMMARY OF SERVICES/COSTS PROVIDED TO OTHER PENNSYLVANIA CITIES AND MUNICIPALITIES BY CONTRACT

	Municipality				
	York	Allentown	Wilkes-Barre	Penn Township	Whitehall Township
County	York	Lehigh	Luzerne	York	Lehigh
<i>General System Information</i>					
Annual Fee Range per Household	\$93.52 ¹	\$160	Approx. \$105	\$2.20 /bag \$87/yr (avg)	\$150
Contracted or Private RSW Collection	Contract	Contract	Contract ²	Contract	Contract
Number of Haulers	1	1	1	1	1
How are Customers Billed?	By Township	By Township	???	No Bill ³	Yearly Bill
Tipping Fee per Ton	\$56	Not Available	Not Available	\$71 ⁴	Not Available
RSW Collection Frequency	Twice Weekly	Twice Weekly	Weekly	Weekly	Weekly
Set-Out Limits	Only on bulky items—up to 5 per year	None	No more than one large item per week	None	None
<i>Recycling Collection</i>					
Method	Same Contract as RSW	Same Contract as RSW	Same Contract as RSW	Same Contract as RSW - CS	Same Contract as RSW - CS
Frequency	Weekly	Weekly	Weekly	Weekly	Weekly
Separate Fee?	Included in RSW fee	Included in RSW fee	Included in RSW fee	None	Included in RSW fee
Materials Collected Curbside ⁵	A, G, J, M, N, P, S, W	A, G, J, M, N, P, S	A, G, M, N, P, S	A, G, P, S	A,G, M,N,P,S

¹ Calculated from overall contract which included waste and recyclables collection for some small customers and collection from Township refuse containers.

² The Township is considering switching from the municipally-operated Pay-As-You-Throw system to a contracted one. The numbers indicated are from the low bid received.

³ Customers purchase special bags through 13 distributors. Cost is \$2.20 per 40-gallon bag. Contract hauler is paid based on the number of bags purchased by residents. 209,890 bags were purchased in 1997.

⁴ Transfer Station fee. Landfill fee is \$56/ton.

⁵ A: Aluminum; G: Glass (3 colors); J: Mixed Paper; M: Magazines; N: Newspaper; P: Plastics; S: Steel; W: White Goods

	Municipality				
	York	Allentown	Wilkes-Barre	Penn Township	Whitehall Township
<i>Leaf Collection</i>					
Method	Same Contract as RSW	Same Contract as RSW	???	Municipal	Same Contract as RSW
Frequency & Duration	Weekly 8 Months	Weekly April-November Christmas trees	???	2x/yr 1 month	1x/yr (leaves); Weekly collection of grass only
<i>Bulky Waste Collection</i>					
Method	Same Contract as RSW	Same Contract as RSW	Same Contract as RSW	Separate Contract	Same Contract as RSW
Frequency & Duration	N/A	N/A	N/A	1x/yr 1 Day	Appliances 1x/mo
Comments	Each HH can place up to 5 large items out per year; Township will pay for up to 325/week at \$1.74/unit	Service is unlimited—any amount of bulky items can be set out	Up to 1 item per week	Wrapping paper accepted for 1 week; student organization separates for recycling	

- Single contractor for all services
- Municipal provision of services
- Other options

Open Subscription

An open subscription system involves individual households contracting directly with haulers for waste and recyclables collection services (as is the current practice in the Township for RSW). It is a system that has been prevalent in Pennsylvania, primarily in rural areas, but it has also been used in other cities throughout Pennsylvania—Reading, Bethlehem, Altoona and Bloomsburg, for example. All have looked into contracting for services, but have been either unable to do so or have been limited in some way. In many cases, the process was political—the local haulers appealed to elected officials and residents to keep the current system, claiming that a change would put some small haulers out of business. In other cases, residents have supported keeping the open subscription system because of the opportunity to have “personalized” service.

As illustrated in the previous section, the current open subscription system appears to be more expensive than contracted collection or have lesser services. The Township has also cited a number of problems with the system as it exists, as outlined in the introduction.

Because services are provided on an individual basis, there is no means by which the Township can reduce the cost of services. Open subscription systems are inherently inefficient, because rather than one truck traveling from one residence to the next on a set route, the hauler may collect from a one or two residences on one street, a handful on the next street, and so on. And enforcement is difficult because haulers are not required to provide customer lists. Some residents may be sharing services, while others may not be using any of the services and finding alternative means of disposal.

The Township has less control over an open subscription service in setting a standard for hauler performance.

Contracted Collection

Letting a contract for municipal waste and recycling appears to be the preferred method of managing waste for many cities and larger townships. This option involves preparing specifications for the service desired, requesting bids to carry out that service, and awarding a contract to the lowest responsible bidder.

Most municipalities do not wish to maintain collection equipment and personnel to manage a collection service, and the cost has generally been lower for contracting. The reason for this is that larger private haulers can generally achieve economies of scale that small haulers in open subscription systems and even most municipal collection programs cannot—lower cost per unit for services because fixed costs are allocated over a greater pool of units. While some municipalities still pay for contracted services from general funds, many have viewed contracting as an opportunity to separate waste management costs (which are more easily separated than costs for other services) and have them charged directly to residents.

Contracting with the private sector for services could take much of the burden off of the Township in terms of enforcement. It is easier to monitor the activities of one hauler than it is to monitor many haulers providing residential collection services. The contract can also specifically stipulate the performance expected of the hauler in their service to the residents. The question of whether or not a hauler is providing all services required (i.e. recycling and yard waste as well as municipal waste collection) and whether or not all residents are participating would no longer be an issue.

A contracted collection system also affords the Township the opportunity to implement a pay-as-you throw or a variable rate fee structure dependent on the amount of material set out by individual households.

Municipal Collection

A number of larger Pennsylvania cities have municipal collection programs for municipal waste, recyclables, and yard waste. Among them are the largest—Philadelphia and Pittsburgh—but also a number of the smaller cities as well—Erie, Scranton, and Wilkes-Barre, to name a few. Most of them have been managing collection for many years, though in some cases, these cities have considered a change to contracted collection. The City of Pittsburgh has looked into this in the past, though it has decided to continue with municipal collection for the foreseeable future. The City of Wilkes-Barre is the most recent, and considered privatizing services in 2000. Rising costs, particularly for personnel, are a concern and a reason why such a change is often considered.

Implementing a municipal collection program would involve substantial investment in equipment and personnel, and would involve ongoing maintenance. While mentioned in this report, it is probably not a real option for Richland. The trend nation wide is for public collection systems to privatize. It is not common for private systems to go to public collection.

Other Options

While a number of municipalities have changed from open subscription systems to contracted collection over the last ten years—many driven in that direction when recycling became mandatory—the change has not always been an easy one. In some cases, change has been investigated and often pursued, often to be defeated when small haulers argue that they would be driven out of business because they cannot compete for larger contracts, and when residents say they would lose the “personalized” service that the smaller haulers provide. In other words, decisions are often based on politics and emotions rather than efficiency and cost effectiveness. Municipalities that have looked into contracting but have continued with open subscription systems include Reading⁶, Altoona, and Bloomsburg, among others.

Partial Contracted Collection. The City of Reading recently tried to convert from an open subscription system to a City-wide contract. After significant discussion, which included the possibility of establishing a zone system (which was opposed by the local haulers), the issue was finally offered to local voters in a referendum. It should be noted that like Richland

⁶ Reading has implemented contracted collection for some residences. Reading's system is described later in this report.

Township, Reading does contract for recycling collection services. Also like Richland, yard waste collection is a municipal function.

When offered the opportunity to move from open subscription to contracted collection of municipal waste, the voters of Reading overwhelmingly voted to keep the open subscription system. Reading solid waste/recycling coordinator Jane Meeks reported that approximately 4,000 voters actually voted on this referendum and not in the mayor's race that was on the same ballot, which sent a message concerning the importance in the voters' minds of keeping the current system.

Reading did, however, elect to contract for service for the residences that had caused the most enforcement problems—individual residences in buildings of four or less units not occupied by the property owner. There are approximately 7,500 units that fit this description. The property owners are billed quarterly for waste management services (municipal waste disposal only) at a rate of \$12.00 per unit per month, or \$36.00 per quarter. The owners may then include waste collection as a service provided as part of the rent.

It should be noted that the rate for municipal waste collection would probably be less if all units in the City were under contract. Collecting only from rental units means that collection vehicles cannot travel regular routes as they would in a City-wide collection system, so collection is not as efficient.

Recycling is contracted separately. All residences in Reading are billed \$17.00⁷ per year for weekly collection of recyclables. For the rental units described above, the annual total for waste collection and recycling is \$163, not including leaf/yard waste that is collected by City crews. The owner-occupied residences remain on an open subscription system, and the average cost per unit for open subscription service is \$200 annually. When recycling is added, the cost jumps to \$217 annually. This is, on average, \$54 more annually than the contracted service.

This example with the City of Reading is used since the system is similar to Richland Township's current system. It is also used to illustrate the types of obstacles the Township could encounter when changing the existing system. Even when the economics justify the change, residents fought to keep the right to choose their waste hauler.

Other Considerations

The Township could also consider options designed to encourage greater recycling. While generally used in smaller towns and rural areas, Pay-As-You-Throw (PAYT) is considered as an option that provides an incentive to recycle. A simple explanation of PAYT is that it is a volume/weight-based system that rewards those who reduce waste and recycle because user costs are directly attributable to the amount of waste disposed. In a classic PAYT system, residents purchase bags or tags at a set price, and the revenue from the bags/tags is used to cover the cost of the program. Elizabethtown Borough uses a classic PAYT system. Many other PAYT programs are "hybrids"—there is a set fee that covers the collection costs and bag/tag purchases cover disposal, or there is a set fee that covers disposal of a set number of containers, and bags or tags must be purchased for anything over the allowable

⁷ The range statewide runs from around \$.90/month (\$10.80/year) to \$2.00/month (\$24.00/year).

number. This is much more common than the classic system because it is difficult to anticipate what revenues will be. The hybrid system ensures coverage of fixed costs. These types of systems are easier to implement in a contracted system.

COST ANALYSIS FOR A FULLY CONTRACTED SYSTEM

The cost of a fully contracted system will include all the present services being provided by a single contractor. There is the weekly RSW collection, every other week curbside sort and collection of recyclable materials and possibly the seasonal weekly collection of grass clippings. For a single contractor to provide weekly RSW collection the following assumptions are applied in estimating a cost for this service:

COLLECTION COSTS ASSUMPTIONS

- 5,100 households served;
- 52 collection days per household per year;
- 2 person collection crews;
- Scheduled length of work day is 8 hours;
- 1.5 multiplier used to calculate overtime pay rates;
- 10 minutes spent at the vehicle yard prior to starting the route;
- 10 minutes spent traveling from the vehicle yard to the start of the route;
- 30 minutes spent on lunch and breaks during a typical day;
- 30 minutes spent traveling from the route to disposal site;
- 30 minutes spent unloading at the disposal site;
- 10 minutes spent at the vehicle yard for post-trip inspection, maintenance, etc.;
- 90 percent average set-out rate (in other words, on any given route an average of 90 percent of the households will set out one or more containers for pick up);
- Average hourly pay rate for a driver is \$12.50;
- Average hourly pay rate for a collector is \$8.50;
- Cost of annual benefits approximately equal to 30 percent of annual wage;
- 52 work weeks per year;
- Driver has 90 percent availability rate;
- 8 percent rate of interest used to finance vehicle or container purchases;
- Expected useful life of vehicle of 7 years; and
- No spare trucks (contractor will have a spare truck in inventory so not a cost factor).
- Assumptions are modified slightly for recycling, grass clipping collection programs as shown in the worksheets.

A collection efficiency worksheet was produced for the collection of refuse, recyclable materials and seasonal grass clippings collection. The worksheet outputs, detail the assumptions and costs associated with the three collection systems.

RSW COLLECTION COSTS

The total estimated annual cost to collect residential refuse generated in Richland Township is calculated to be \$133,367. This equates to approximately \$26.15 per household per year or approximately \$2.18 per household per month. This represents only the costs associated with collection and transporting refuse to the disposal facility. Assuming a disposal rate of \$35.00 per ton and the Township generating approximately 10,200 tons per year, the cost of disposal is estimated at \$357,000.00 per year. This represents an additional cost of \$70.00 per household per year, or approximately \$5.84 per household per month. Therefore, the cost of collection and disposal together for each resident of Richland Township would be approximately \$8.02 per month. Not included in this cost are the administrative costs associated with the Contractor operating a collection program for refuse.

RECYCLING COLLECTION COSTS

The total estimated annual cost to curbside collect recyclable materials generated in Richland Township every other week is calculated by the Worksheet to be \$49,410. This value is greater than what the Township currently pays an independent contractor to provide recycling services to Township residents, therefore this report will use the Township's figure of \$36,000 annual cost of recycling collection. This equates to an annual cost of approximately \$7.06 per residential unit or \$0.60 per month.

The diversion tonnage reported by the Township for materials collected by the residential recycling collection program last year was 160 tons. This translates to about 63 pounds of recyclables collected from each residential unit. The value is low compared to the rates reported by other Pennsylvania municipalities. This could be the result of several factors. One, newspaper, which can add significant weight to recycling tonnage is not collected under the current system. Also, every other week collection programs generally have lower overall diversion rates compared with weekly collection systems because of the confusion factor (individuals forgetting which week is recycling week) and over-flow of material from recycling bins ending in refuse containers.

To enhance diversion of waste through the Township's recycling program, collection could be offered on a weekly basis. This however, would about double the cost of the collection system. The annual cost then would be \$70,000 per year or \$13.73 per residential unit at \$1.15 per month.

The Township representatives also requested information relating to the impact of the Township not owning the recycling collection vehicle purchased with Act 101 – Section 902 grant funds. To determine the cost impact a second run of the worksheet was performed with the entire costs of the vehicle being amortized by the contractor. This increased the annual collection cost for recyclables to \$61,451 or a difference of approximately \$12,000 per year at an interest rate of 8 percent.

GRASS COLLECTION COST

The worksheet calculates the annual cost of grass collection to be approximately \$26,348. This cost is strictly collection related since it is assumed the material is delivered at no cost to the Township's composting site. This rate, calculated on a per household basis, is \$5.17 per year or \$0.43 per month.

BULKY WASTE COLLECTION COST

Finally, the cost associated with a bulky waste collection needs to be factored into the overall program cost. This is a more difficult cost to estimate given it is a factor of how much material is set out from year-to-year. The first year will most likely be the heaviest for set outs, since the service is currently not be offered on a formal basis. Individuals may have arrangements with the individual haulers to address bulky materials under the current system. However, to determine a cost for planning purposes, the cost paid for this service in other communities is used. For instance, the City of Hazleton, which consists of 8,000 residential units pays an average of \$54,000 per year for this once a year service. Since, tipping rates are higher in Northeastern Pennsylvania, in determining a cost for Richland half the cost to Hazleton is applied even though Richland's population is greater than half of Hazleton's. If \$27,000 is used, the annual cost per residential unit is \$5.30 or \$0.44 per month.

SUMMARY OF ALL COSTS

Table 2 below summarizes all of the different collection costs for the Township.

TABLE 2
SUMMARY OF COLLECTION COSTS

Collection System	Total Annual Cost	Annual HH Cost	Monthly HH Cost
RSW Collection/Disposal	\$490,367	\$96.15	\$8.02
Recycling Collection	\$36,000	\$7.06	\$0.60
Grass Collection	\$26,348	\$5.17	\$0.43
Bulky Waste Collection	\$27,000	\$5.30	\$0.44
Total Costs	\$579,715	\$113.68	\$9.50

As Table 2 shows, the overall annual cost of the collection system is approximately \$580,000 or \$114 per residential unit when rounded off. This represents a monthly fee of \$9.50 for collection four separate collection programs. The value is based on a single contractor performing the RSW collection. Weaving all the services into a single contract would consolidate the system and reduce the role of municipal crews in the collection process particularly for grass clippings. In fact, considering alternatives for this item was one goal of this report. Below a discussions suggests ways the material could be managed so that those

residents not utilizing the service are not paying for it as shown above in the \$9.50 HH monthly rate.

ALTERNATIVES FOR MANAGEMENT OF GRASS CLIPPINGS

Collection of grass clippings separate from RSW is less common in Pennsylvania communities. Most collect it as part of the refuse stream. Where it is not being collected as part of the RSW stream, communities have offered separate curbside or drop-off collection systems. Those offering curbside collection generally require residents to pay an additional fee for this service. For instance, the City of Allentown sells paper bags that residents must put grass clippings in for collection (grass clippings are not allowed in with the RSW). The cost of the bag reimburses the City for collection costs and offers residents and economic disincentive to collect grass when mowing lawns. Leave-it-lay is the City's preferred method of management, but residents insist on a collection program and are willing to pay for it.

Lower Paxton Township (Dauphin County) contracts with a hauler for weekly RSW, recyclables and yard waste curbside pick-up. The rate for RSW and recyclables are set at a flat monthly rate, while households electing to place yard waste out for collection pay an incrementally higher rate for collection services. The Township also offers drop-off services for yard waste at the municipal composting site. This enables residents to still manage the material off-site, while not incurring an added cost, just the inconvenience of transporting the material to the compost site.

State College Borough in Centre County offers five drop-off locations for grass clippings at the various parks throughout the Borough. At these same locations residents can also pick-up finished compost for home applications. The cost of servicing these drop-offs is paid through taxes. State College, like the City of Allentown, first promotes leave-it-lay, or waste reduction as the preferred management method for grass clippings.

Richland Township is unique in that it collects grass clippings and does not directly charge residents for this service. However, tax money pays for the collection service. To change to a system where this is a fee paid service may be met with some resistance. Even if not all residents utilize the service, they still pay. Also, there is no incentive to manage the material at home by not collecting it or home composting the grass clippings.

The options for Richland Township are:

- Discontinue collecting separately and allow residents to put material in with RSW;
- Offer a drop-off program;
- Continue to collect separate as a municipal function; or
- Require selected contracted waste hauler to collect separate and charge an incrementally higher rate to residents electing the service (cost could be approximately \$12 per year, double the calculated cost because only half the residents will pay the extra for the service).

CONCLUSIONS

- The Richland Township's current open subscription system is:
 - More expensive for residents than a contracted collection system.
 - Disjointed with three different collection systems for three different waste streams.
- Service is not charged equally to all residents, those not using the yard waste collection system pay anyway.
- Richland's overall collection system does not provide incentives for residents to divert materials from disposal or from the Township offering a time consuming additional grass clipping collection system.
- Amount of recyclable materials diverted by the Township's current residential recycling system is low compared to other Pennsylvania curbside collection programs.
- Going to once a weekly curbside collection of recyclable materials would cost each residential unit approximately \$7.00 more per year or \$0.60 per month, but could increase diversion of materials.
- Total overall cost of collection system if contracted should be no more than \$10.00 per residential unit per month under a single contract. Cost may increase slightly if separate contracts are let for each collection system.

RECOMMENDATIONS

- Richland Township should strongly consider implementing a contracted collection system to save money for residents and reduce expenditures of personnel time, energy and money for the Township due to seasonal grass collection program.
- Contracted collection system should be for all of the collection services under a single contract or separate contracts for different services.
- If the Township is concerned that contracting will be negatively received by residents because of it affecting the current haulers, the Township should involve the public in the decision making process. One potential resolution could be to bid each of the collection services separately giving the four existing licensed haulers the opportunity to retain one of the services.
- Given the calculated price differential of approximately \$12,000 per year for the contractor owning the recycling collection vehicle versus the Township purchased the vehicle with grant funds, the Township should apply for grant funds to buy a new recycling collection vehicle.
- Given that once a week curbside collection of recyclable materials will cost residents only about \$7.00 more per year, Township should consider weekly collection.
- Cost for collection of grass clippings should be assessed only to those electing to use the service. The rate should be no less than an additional \$1.00 per household per month.

While the current program is serving the citizens and the elected officials of Richland fairly well, changes as outlined above will improve collection efficiencies and reduce costs slightly. Implementing a contracted collection program could prevent most of the problems the Township has faced with regard to dumping and litter, and could save some money for both residents and the government, as well as time and energy for government personnel.

Sincerely,
R.W. BECK, INC.

Richard M. Schlauder
Director Environmental Services, Pennsylvania

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