



June 23, 2000

Mr. Duane A. Dellecker
Recycling Coordinator
Carbon County
P.O. Box 210
Jim Thorpe, PA 18229

Subject: Assessment of Public vs. Private Operation of Carbon County's Drop-off Recycling Program

Dear Duane:

This letter is to provide Carbon County with the results of R.W. Beck's evaluation of public versus private operation of the County's new VQuip (Haul-All) drop-off recycling system. The goal is to determine the system that will best serve the County and its residents at the best cost and ease of operation for the County.

AN ASSESSMENT OF PUBLIC VS. PRIVATE OPERATION OF CARBON COUNTY'S DROP-OFF PROGRAM

This evaluation considers the following:

- Issues related to public operation of the County's collection program, including:
 - Personnel and benefits
 - Insurance
 - Storage and maintenance of vehicles
 - Fuel and related costs
 - Equipment replacement
 - Contracting with markets
 - Oversight and recordkeeping
 - Public education
- Issues related to private operation of the County's collection program, including:
 - Bidding services
 - Required agreement provisions
 - Equipment replacement
 - Oversight and recordkeeping
 - Public education
- Overall cost

DESCRIPTION OF CARBON COUNTY'S CURRENT RECYCLING PROGRAMS

Carbon County has three mandated municipalities and four non-mandated municipalities that are operating curbside recycling programs. Two municipalities are operating drop-off facilities. The County operates a County-wide telephone book recycling program, but until

now has not undertaken efforts to establish further recycling programs other than the County's internal efforts (i.e. in County facilities).

The County's 1999 Plan projected that 37.5 percent, or 11,280 tons, of the County's municipal waste stream is made up of Act 101 materials that can be recycled. Documented recovery of materials was 3,435 tons, or 7 percent diversion, in 1998, the last year for which this information is available. As illustrated by these figures, there is still significantly more material available for diversion from the County's waste stream.

It is believed that there is a high level of underreporting on the part of commercial and institutional establishments because of the difficulty in enforcing reporting requirements. Even if the reporting from these sectors was high, however, it should be noted that primarily rural counties like Carbon will find meeting the state's 35 percent recycling goal more difficult than more urban counties because of the lack of mandated municipalities (only three). Even having curbside collection programs in four additional municipalities, coupled with an aggressive drop-off program, would not likely match the diversion possible through more curbside programs, and many businesses outside of the mandated municipalities may choose not to implement recycling because of cost. This is unlikely to change unless the County or individual municipalities make recycling mandatory for all or most County residents. The addition of more materials would be highly dependent on cost and the County's ability to take on additional responsibility for managing these materials.

While it is acknowledged that meeting the goal could be difficult, the County can help to boost its recycling rate by making recycling more accessible to its residents through a comprehensive drop-off program, and implementation is underway.

CARBON COUNTY'S NEW DROP-OFF PROGRAM

Carbon County will soon be installing 14 VQuip drop-off depots throughout the County to collect corrugated cardboard (OCC), newsprint (ONP), magazines (OMG), steel/bimetal cans, aluminum cans, mixed glass, and mixed plastics. They will be configured as follows:

- One 6 cubic yard container for OCC
- One 6 cubic yard container for steel/bimetal cans, aluminum cans, and mixed glass
- One 6 cubic yard container for ONP and OMG
- Two 6 cubic yard containers for mixed plastics

According to VQuip, weight to cubic yard ratios are as follows:

- OCC – 90 lbs.
- Steel/bimetal cans – 80 lbs.
- Aluminum cans – 50 lbs.
- ONP – 400 lbs.
- OMG – 500 lbs.
- Mixed glass – 500 lbs.
- Mixed plastics – 37.5 lbs.

It is this weight to volume ratio that will help to determine the number of circuits needed to collect all materials in a given year. All materials, with the exception of mixed plastics, would be picked up in an RP-235 collection vehicle. This vehicle holds up to 35 cubic yards

of materials. The mixed plastics will be collected in the AugPac compaction vehicle owned by Schuylkill County and operated by St. Jude Polymer, who will process the plastics, so there will be no cost to the County for collection of plastics. The other materials will be processed at the Towamensing Township recycling facility, and the County will be charged for the cost of processing, with the revenues from sale of materials to be returned to the County.

The County has not yet determined whether it will operate the collection program or will contract with a private hauler or processor to operate the program.

PUBLIC VS. PRIVATE OPERATION OF THE COUNTY'S DROP-OFF PROGRAM

There are a number of issues to be considered in determining whether public versus private operation is preferred. The most important issue is whether or not the County desires to "get into the business" of collection, regardless of cost or any other factors.

All counties that have installed VQuip systems to date have elected to do their own collection. This includes Blair, Cambria and Schuylkill Counties. Pike County, which plans to implement its own program, has made the decision to do its own collection. Crawford County is currently evaluating how it will manage its County-wide collection and is expected to make a decision later this year. There is reasonably good cost data from Cambria and Schuylkill Counties, but no parallel privately operated system against which this data can be compared.

County Operated Collection

Issues to be considered in making a decision concerning County operation include:

- Personnel and benefits—Because the County does not currently operate any type of collection program, it would need to hire a driver to manage collection. Operating the Haul-All RP235 requires a Commercial Drivers License (CDL).

Schuylkill County uses two drivers. The hourly rate for one driver is \$12.36, and \$9.89 for the other driver. The average rate for benefits (FICA, Workers Comp, Retirement and Health Insurance) is 45 percent, which makes the effective hourly cost per driver \$17.92 and \$14.34, for an annual cost of \$37,275 and \$29,825, respectively.

Starting in 2001, Cambria County plans to use one full-time driver at an annual salary of \$20,000. The rate for benefits, based on the 2001 proposed budget, is approximately 48 percent, making the effective annual cost for a full time driver \$29,600.

The rates for Schuylkill County, which borders on Carbon County, are probably more reliable for estimating purposes than those for Cambria County, and driver cost estimates for Carbon County should probably be based on rates similar to those in Schuylkill, plus the applicable benefit rate for Carbon County.

- Insurance—This does not appear as a separate entry for either Schuylkill or Cambria Counties. The rate to insure the vehicles will probably be nominal if the vehicles are added to an existing County policy.

- Storage and maintenance of vehicles—There will be no additional cost for storage if the County has space to store the vehicle in existing space. There may be some initial cost to develop storage space if none exists.

Actual maintenance cost will be dependent on regular required maintenance plus wear and tear on the vehicle based on road conditions and the driver(s). Cambria County's budgeted maintenance cost is presented as an example because the program has now been in operation for nearly two years, giving Cambria a better sense of the actual cost to maintain the vehicles. Schuylkill County's program has only been in operation since March 2000. Cambria has budgeted \$6,000 for 2001 for maintenance of two vehicles--the RP235 plus the AugPac compaction vehicle. Therefore, \$3,000, or half of Cambria's cost, is probably a reasonable estimate for Carbon, since Carbon will have only the RP235.

- Fuel and related costs—Beck assisted Crawford County in estimating what its fuel cost might be to operate a 12 depot program. This is somewhat comparable to Carbon's planned 14 depot program. Crawford's total land area is just over 1,000 square miles, compared to approximately 383 square miles in Carbon County, so total miles that must be traveled are estimated to be significantly less than Crawford's—only around 38 percent of Crawford's total. The estimated number of circuits required to collect an estimated 1,500 tons of material in Crawford in 2001 is 288. With 1,100 tons estimated for Carbon County, the estimated number of circuits will probably be around 229.

The cost per circuit for Crawford was estimated at approximately \$29.50 (based on actual experience in Cambria County at approximately \$20.00 per circuit, and taking into account Crawford's land area, which is nearly 50 percent greater than Cambria's). Based on that model, Carbon County's cost per circuit would be around \$20.00. However, given the significant increase in the cost of fuel in the first half of 2000, the cost is expected to be as much as 50 percent greater. To ensure that Carbon budgets sufficiently for fuel, the cost per circuit should probably be estimated at \$30.00. If 229 circuits are required, the cost would be approximately \$6,850 in 2001.

- Contracting with markets—Carbon County should have an opportunity to “piggyback” onto the same revenue arrangements as Schuylkill County. Schuylkill County's materials are taken directly to markets, rather than a materials recovery facility (MRF) for further processing. This eliminates any processing related costs to the program. According to Tom Boushel of VQuip, who has been working with Schuylkill County, the following per ton floor pricing is available: (1) Corrugated Cardboard (OCC) - \$40; (2) Metals - \$35; (3) Marcal Mix (residential mixed paper) - \$25; (4) #6-8 Newsprint (ONP) - \$ 45; (5) Mixed Plastics - \$100; (6) Mixed Glass - \$5. This floor price protects the seller in the event that markets bottom out as they do periodically.

These arrangements also allow for the price to increase to a set percentage of the current market price, so that if the markets are very good, the seller can benefit. The current rates are: (1) OCC - \$60; (2) Metals - \$70; (3) Marcal Mix - \$37; (4) #6-8 ONP - \$70; (5) Mixed Plastics - \$190; (6) Mixed Glass - \$5.

For budget purposes, it is probably best to use the floor price to estimate revenues.

Table 1 presents an estimate of the amounts and volumes of materials and total collection circuits required to collect materials from the 14 Carbon County depots from 2001 through

TABLE 1
10 YEAR MATERIALS GENERATION PROJECTION--CARBON COUNTY COLLECTION PROGRAM

Material	Tons									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Aluminum	12	13	14	16	18	19	21	23	26	28
Steel	82	90	99	109	120	132	145	160	176	194
Clear glass	109	119	131	145	159	175	192	212	233	256
Colored glass	62	69	76	83	91	101	111	122	134	147
Plastics	55	60	66	73	80	88	97	107	117	129
ONP	328	360	396	436	480	528	580	638	702	772
OMG	163	180	198	217	239	263	289	318	350	385
OCC	289	318	350	385	423	466	512	563	620	682
Totals¹	1,100	1,210	1,331	1,464	1,611	1,772	1,949	2,144	2,358	2,594

¹ Assumes increase of 10 percent annually.

TABLE 1 - CONTINUED
10 YEAR MATERIALS GENERATION PROJECTION--CARBON COUNTY COLLECTION PROGRAM

Material ²	Cubic Yards									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Aluminum	479	527	580	638	701	771	849	933	1,027	1,129
Steel	2,053	2,258	2,484	2,732	3,006	3,306	3,637	4,000	4,401	4,841
Clear glass	435	478	526	578	636	700	770	847	931	1,025
Colored glass	250	275	302	332	366	402	442	487	535	589
ONP	1,638	1,802	1,982	2,180	2,398	2,638	2,902	3,192	3,511	3,862
OMG	653	719	791	870	957	1,052	1,158	1,273	1,401	1,541
	5,508	6,058	6,664	7,331	8,064	8,870	9,757	10,733	11,806	12,987
Collections	157	173	190	209	230	253	279	307	337	371
Plastics	2,920	3,212	3,533	3,886	4,275	4,702	5,172	5,690	6,259	6,884
Collections	15	16	18	19	21	24	26	28	31	34
OCC	6,425	7,067	7,774	8,551	9,406	10,347	11,382	12,520	13,772	15,149
Collections	71	79	86	95	105	115	126	139	153	168
Total Collections ³	229	252	277	304	335	368	405	446	490	539

² Assumes the following weight to volume ratios (lbs. per cubic yard): Aluminum-50; Steel/Bimetal-80; Glass-500; ONP-400; OMG-500; Plastics 37.5; OCC-90.

³ Does not include estimated collections of plastics, which will be managed by St. Jude Polymer using Schuylkill County's AugPac compaction vehicle.

2010. Table 2 provides basic estimates of the annual cost for the County to operate the collection system from 2001 to 2010.

Table 2 indicates that expenses will outpace revenues in all years, though it should be noted that both expense and revenue estimates are conservative. All expenses are estimated at the high end, and revenue for materials is estimated using the floor prices for each material. Estimated collection circuits are based on materials dropped off increasing at 10 percent annually, and it is assumed that only one circuit per driver would be run per day. If two circuits could be run in a day, this would mean that a second driver would not be needed until perhaps 2009 or 2010, unless the drop-off rate is much greater than estimated.

Also, it is understood that some revenue from the County's Administrative Fee (the charge per ton levied at disposal facilities for all municipal waste generated in Carbon County) will be available, and that the amount of revenue from this fee is greater than the expenses indicated in the final line of Table 2.

Privately Operated Collection

- Required agreement provisions—As noted earlier, no other counties that are operating or plan to operate VQuip systems have contracted with the private sector for collection services, so there is no basis for cost comparison. Without actually issuing a Request for Bids (RFB) with specifications for operating the collection program, it is nearly impossible to know what the cost would be. It may be that the preference for public collection is driven by a collection system requiring a specialized vehicle that would be owned by the County, and the difficulty in developing an agreement that would adequately protect the County's investment at a reasonable cost.

If Carbon County decides to investigate private collection, in order to ensure that the system is managed efficiently and to the benefit of the County and the users of the drop-off depots, it should address the following provisions in its RFB:

- **Equipment maintenance**—The equipment will be owned by the County and used by the private sector. If the County wishes for the equipment to remain in good repair for the duration of its expected life, the RFP/contract should require a contractor to maintain the equipment according to the schedule suggested by the manufacturer. In order to ensure this is done, the County should provide the maintenance schedule and require that the contractor provide a regular (monthly or quarterly) report to the County describing the maintenance completed with dates and odometer readings.
- **Collection schedule**—The County should ensure that materials are collected in a timely manner. Having depots overflowing destroys the aesthetics of the site and encourages illegal dumping. The RFP/contract should allow for flexibility/changes to ensure that the depots are serviced in such a way to prevent this problem.
- **Depot maintenance**—The County should ensure that depots are maintained in such a way that they remain attractive and in good repair. To do this, the County should specify what is expected of both the contractor and the County. If there is damage to the depots as a result of the contractor's action, the contractor should probably be responsible. If there is damage as a result of vandalism or for any other reason, or if

TABLE 2
10 YEAR PROJECTION--CARBON COUNTY COLLECTION PROGRAM

EXPENSES	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Labor										
Salaries and wages ⁴	25,709	36,714	37,449	38,198	38,961	39,741	57,905	59,063	60,244	61,449
Overtime	1,028	1,469	1,498	1,528	1,558	1,590	2,316	2,363	2,410	2,458
Payroll taxes ⁵	2,045	2,921	2,979	3,039	3,100	3,162	4,607	4,699	4,793	4,889
Other employee benefits (insurance, etc.)	9,602	13,713	13,987	14,267	14,552	14,843	21,627	22,060	22,501	22,951
Subtotal	38,385	54,817	55,913	57,031	58,172	59,335	86,455	88,184	89,948	91,747
Collection Service										
Fuel ⁶	6,862	7,926	9,155	10,574	12,213	14,106	16,292	18,817	21,734	25,103
Maintenance	3,000	3,150	3,308	3,473	3,647	3,829	4,020	4,221	4,432	4,654
Equipment Replacement Fund	26,650	26,650	26,650	26,650	26,650	26,650	26,650	26,650	26,650	26,650
Insurance	2,500	2,550	2,601	2,653	2,706	2,760	2,815	2,872	2,929	2,988
Subtotal	36,512	37,726	39,112	40,697	42,509	44,584	46,962	49,688	52,816	56,407
TOTAL	74,897	92,543	95,025	97,728	100,681	103,920	133,417	137,873	142,764	148,153

This assumes just the basics. It does not include the costs related to purchase of equipment or site development, which will be funded by a 902 grant. It does not include education costs, which are assumed to be managed as part of the recycling coordinator's duties. It does not include any cost for processing of materials at the Towamensing Township recycling center. It is based on starting at 1,100 tons in 2001 and increasing to 2,600 tons in 2010. Staffing is estimated using the projected number of collection runs that must be made, which is based on estimated volume of material and collection vehicle size. If more material is dropped off, staffing may need to increase sooner, and new vehicles may be needed.

⁴ Assumes rate of \$12.36 per hour for a driver, based on Schuylkill County's current rate, and escalates at 2 percent annually. Also assumes an additional half time driver will be needed starting in 2002 (a second vehicle would be required if both drivers collect only during the day), and two full time drivers will be needed starting in 2007.

⁵ The total for payroll taxes and other benefits (next line) is based on 45 percent of salary, comparable to Schuylkill County.

⁶ Based on \$30 per collection circuit, with a 5 percent escalator. Collection circuits are estimated at 229 in 2001, increasing to 539 by 2010 based on volume collected.

TABLE 2 - CONTINUED
10 YEAR PROJECTION--CARBON COUNTY COLLECTION PROGRAM

REVENUES	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Materials										
Aluminum	419	461	507	558	614	675	743	817	898	988
Steel	2,874	3,161	3,478	3,825	4,208	4,629	5,092	5,601	6,161	6,777
Clear glass	543	597	657	723	795	875	962	1,058	1,164	1,281
Colored glass	312	343	378	416	457	503	553	608	669	736
Plastics	5,474	6,022	6,624	7,286	8,015	8,816	9,698	10,668	11,735	12,908
ONP	14,742	16,216	17,838	19,622	21,584	23,742	26,117	28,728	31,601	34,761
OMG	7,352	8,087	8,896	9,785	10,764	11,840	13,024	14,327	15,759	17,335
OCC	11,565	12,721	13,993	15,392	16,932	18,625	20,487	22,536	24,790	27,269
Subtotal	\$43,281	\$47,610	\$52,371	\$57,608	\$63,368	\$69,705	\$76,676	\$84,343	\$92,778	\$102,055
Performance Grants	\$8,234	\$9,344	\$10,622	\$12,100	\$13,809	\$15,793	\$18,097	\$20,566	\$23,913	\$27,574
TOTAL	\$51,516	\$56,953	\$62,993	\$69,707	\$77,178	\$85,498	\$94,773	\$104,910	\$116,691	\$129,630
SURPLUS/(DEFICIT)	-\$23,381	-\$35,589	-\$32,032	-\$28,021	-\$23,503	-\$18,422	-\$38,644	-\$32,963	-\$26,073	-\$18,524

there is a need to perform any type of maintenance or repair that is not the fault of the contractor, this should probably be the responsibility of the County, though the contract should require that the contractor notify the County when such service is warranted.

- **Cost/revenue**—The County should specify that the proposed cost on an annual basis may not be increased unless the County takes some action that would increase the cost for the contractor to perform the service. This could include addition of new materials, special service requests by the County, or similar actions. The County may wish to negotiate with markets to get the best price it can for the sale of materials, and direct the materials to these markets, or it may allow proposers to bid based on other scenarios/options if they can demonstrate that the proposed option will result in lower cost/greater revenue for the County.

Issues that Apply for Both Public and Private Operation

- Equipment replacement—It is recommended that Carbon County establish an equipment replacement fund. The purpose of this fund is to purchase additional equipment and replace old and broken down equipment as needed. Given the uncertain future of the Act 101 Recycling Fund (and its grant programs), it would be prudent to include such a fund to ensure that sufficient financial resources are available to continue the County's current programs.

Cambria County provides an example. Cambria budgeted \$20,000 in 2000, and the fund is budgeted to increase to approximately \$73,500 by 2004. Part of the reason for this phase in of funding is that Cambria is also phasing in new equipment over the next few years. Carbon's fund should be a factor of the actual equipment owned.

- Oversight and recordkeeping—If existing staff can absorb these activities, there will be no additional cost to the County for personnel. There may be some cost to purchase appropriate software or to set up a recordkeeping system using existing software.
- Public education—Carbon County already has an extensive public education program. However, if the drop-off program is to be successful, a comprehensive, sustained public education program is needed to ensure that County residents are (1) aware of the new system, and (2) understand the system how the system works so that the materials delivered to the sites are clean and free of contaminants. The cost will be significantly greater up front, but the efforts will need to be sustained to encourage residents to continue bringing materials to the sites.

CONCLUSIONS

- All counties in Pennsylvania with the VQuip system have opted to collect their own materials from drop-off locations. Therefore, without issuing a Request for Bids (RFB), it cannot be determined whether County or contracted collection would be more cost effective for Carbon County.

Duane A. Dellecker

06/23/00

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- The estimated costs for County collection are greater than the estimated revenues for each year in the period studied, though estimates are conservative, with expenses estimated high and revenues estimated low.
 - Contracting for collection services will require strong agreements that protect the County's investment by ensuring appropriate maintenance.
 - Regardless of whether materials are collected by the County or a contractor, the County will need to be responsible for equipment replacement, oversight and recordkeeping, and public education.

RECOMMENDATIONS

- County collection of materials allows the County to better control equipment maintenance (both vehicle and depots), collection schedules, and revenues from materials than would contracted collection. Given that all other Pennsylvania counties with this system have opted to manage their own collection, unless there are compelling reasons not to do so, the County should probably consider County collection the preferred option.
- If the County still wishes to consider contracted collection, it should:
 - Contact other counties to discuss why they made the decision to do their own collection.
 - Issue a Request for Bids, carefully addressing maintenance and revenue issues, to obtain costs for comparison purposes. Levels of service that would be provided by the County vs. what a contractor would provide should be considered as well.
- Regardless of whether the County manages its own collection or contracts for services, it should:
 - Establish an equipment replacement fund to assist in purchasing new and replacing existing equipment.
 - Establish a good oversight and recordkeeping system to track data and ensure quality of service.
 - Develop a comprehensive and sustained public education program.

This system has already developed a good track record among the counties that have chosen to implement it. As long as the County manages the system to maintain a high service level, Carbon County's experience with the system should be very good.

Sincerely,
R.W. BECK, INC.

Sandra L. Strauss
Environmental Analyst

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