



January 23, 2000

Ms. Patricia Snyder
Township Secretary
120 Stable Road
Lehighton, Pennsylvania 18235

Subject: **Recycling Program Redesign**

Dear Patricia:

The purpose of this letter is to provide Towamensing Township with the results of the effort of R.W. Beck in evaluating and redesigning a drop-off recycling program that would allow the operation to more effectively store, process, market and otherwise handle materials currently accepted with the expectation of expanding materials collected. The present operation requires excessive handling of materials for storage and loading purposes and the bales produced by the current baler are generally unacceptable to more favorable markets. This analysis evaluates and recommends measures to improve the handling and processing of materials with the expectation that the operation could potentially accept and handle material from a County wide drop-off collection program.

The current program has served the recycling needs of Towamensing, Lower Towamensing and Franklin Township since 1992 at no cost to the residents. With a growing interest throughout the County for recycling services, the Township needs to determine how this operation could fit in a larger County wide recycling scheme.

ANALYSIS OF CURRENT SYSTEM

The current drop-off program accepts aluminum cans, tin/bi-metal cans, clear, brown and green glass and white goods and expects to eventually accept newsprint. Residents from the participating communities sort the materials into the appropriate portals in the side of the building used to collect and process the materials delivered. When enough of a specific material (tin/bi-metal cans, aluminum cans and plastics) that is baled has accumulated, Township staff process the material through a small portable vertical down-stroke baler. Glass is loaded directly into transport vehicles for shipment to markets with no further processing.

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The bales produced by the portable baler are smaller than those commonly generated by other recycling operations making the marketing of the processed materials difficult for the Township. Markets have indicated that the smaller bales are undesirable, therefore, the Township is considering requesting grant assistance from the State to purchase a new baler that will produce bales desirable to more favorable markets.

The new proposed baler would be installed in the existing structure used by the Township as a recycling center. This building is open on two sides with a center wall dividing the building into two areas, one for recycling, the other for equipment storage. To accommodate the installation of a new larger, permanently placed baler, the Township has to have three-phase electrical service brought to the facility off lines on a main through fare, several hundred yards away from the operation.

These are some of the measures anticipated by the Township to upgrade the operation. There is also interest at the County level to potentially use this facility as a delivery point for recyclable materials that will eventually be collected through a proposed County wide recycling drop-off program. This will require the facility to be able to handle a significantly larger quantity of material than what is expected if the program continued to service a limited geographic area around Towamensing Township. To accommodate handling a larger quantity of materials, the upgrades to the facility could be significantly greater. Below is a discussion of what would be potentially required to handle materials under the current circumstances and from a County wide collection program.

PROPOSED PROGRAM

Changes made to the Township recycling drop-off program will be directed at improving the following program elements:

- Reduce handling of materials;
- Reduce number of trips required to transport materials to a market;
- Improve bale quality to entice better market prices; and
- Enable facility to handle addition materials potentially at two levels, more items for current program or more items and larger quantities from a County wide collection program system.

To accommodate developing a system that meets these proposed improvements, the Township is considering the following measures discussed below.

PROGRAM UPGRADES TO SERVE CONTINUED MULTI MUNICIPAL SYSTEM

If the program is continued for the purposes of serving the current municipalities, but improve the items noted above, then the existing structure could continue housing the operation with minimal changes. Since storage area for baled materials is limited in the portion of the building delegated

for recycling, the Township could utilize the entire structure for recycling. This will require other accommodations be made for storage of other Township equipment, but will allow for the accumulation of a sufficient amount of each material to justify shipping larger loads of baled materials at one time. Also, if the Township upgrades the baler and has it installed in a permanent location, then the additional area would enable the placement of the baler in a manner that minimizes material handling and shelters it as much as possible since the building is not fully enclosed.

With the exception of perhaps removing the center partitioning wall and placing an outer layer of cover for walls where vehicle and material flow would not be effected, little modifications to the existing structure would be required. The bigger investment for the Township would be in adding three-phased electrical service to the building and purchasing equipment to more effectively process materials received.

To accommodate making the necessary changes for the multi-municipal system, the Township has estimated the costs as follows:

- Install three-phase to building.....\$10,000 to \$20,000
- Purchase and install baler.....\$90,000
- Purchase sorting line.....\$40,000

Total project cost is estimated at \$150,000

For the program to be converted to serve a County wide drop-off collection system the changes required are much more significant.

The building would have to be sized to accommodate tipping materials from a collection vehicle used to services containers that have been strategically located in municipalities through out the County. A building with a minimum eave height of 28 feet would be required to allow for the vehicle to be tipped inside the building. Having the ability to tip inside the building is advantageous to reducing the blowing of materials that will occur outside and the littering of the area. Indiana County Solid Waste Authority operates a Recycling Center that recently began accepting drop-off recyclable materials collected by Cambria County using equipment similar to the type proposed for the Carbon County drop-off collection program. Material at the Indiana County Recycling Center is tipped outside and is blown around causing a nuisance to the operation. The facility was a preexisting structure and cannot accommodate material being tipped inside due to height constraints. While the existing structure in Towamensing Township could be used for some functions of the operation, it has a number of limiting factors including, not being fully enclosed and not having a the height necessary for tipping materials inside a building.

However, the equipment required to process materials would not have to be much different than what is required for the existing operation, though a horizontal baler would more effectively handle the larger quantities of materials. Also, the Township would need to purchase some rolling stock to effectively move materials around. For instance, a forklift would be required to move,

stack and load larger bales of processed materials produced by the horizontal baler. Additionally, a small loader could be used to load material onto sorting conveyors, push material around and load the baler system.

Additionally, to accommodate a larger building, the Township would have to acquire additional property, as the present area owned by the Township does not have sufficient space for the structure and supporting drive areas. The farm field bordering the Township's property to the south could be a potential area for the operation to expand into.

Costs associated with construction of the building and acquiring necessary equipment are below:

- Facility (80' wide x 150' length x 28' height) poll barn structure with corrugated steel walls and roof. Cost estimate based on 12,000 sqft @ \$70/sqft.....\$840,000
- Site development (clearing, grubbing and excavation) – Land related costs
Cost estimate based on 10% building and road related costs.....\$84,000
- Engineering and administration – Project Development
Cost estimate based on 15% of total project cost (\$924,000).....\$138,600
- Processing Equipment(same as above with rolling stock).....\$190,000
- Project total estimated cost (Project Development, Building and Land Related Costs)...\$1,252,600

The development costs projected above are based on costs figures recently incurred by two northeast Counties that have constructed new facilities to receive and process recyclable materials for marketing. Wyoming County is projecting to spend up to \$1.2 million to replace an existing structure that was destroyed by a recent road expansion project, while Susquehanna County has spent up to \$1.5 to replace a structure that was lost to a collapsed roof.

PUBLIC EDUCATION

The Township will prepare a brochure for distribution to residents that explains the process at the new facility and reinforces the importance of recycling. To prepare and produce enough copies for each resident the estimated cost is \$10,000.

TOTAL EXPECTED PROJECT COSTS

A summary of the total estimated project costs are shown below:

- Project Development.....\$138,600
- Public Education.....\$10,000

- Processing
 Equipment.....\$190,000
- Building.....\$840,000
- Land Associated Costs.....\$84,000
- **Total.....\$1,262,600**

The estimated cost for the entire project is calculated to be \$1,262,600. If the Township applies for and is awarded Act 101 – Section 902 grant money for the project, then up to ninety percent of the total project cost could be reimbursed to the Township. In this instance the actual cost of the project to the Township would be the ten percent match or \$126,260. Alternatively, this match could be made up with the lease value of equipment or property currently being utilized in the existing program.

ESTIMATED ANNUAL OPERATING COSTS

The annual operating costs associated with the proposed expanded program are projected out for the next five years in the table below. The assumptions used to generate these cost estimates are as follows:

- Labor force includes a General Manager, Account Clerk, one equipment operator and four sorters initially. The labor force will increase as the tons diverted by the program increase.
- Initial tonnage received at the facility is expected to be in the range of 2,000 to 5,000 tons per year.
- Operating costs are based on percentages derived from evaluating the costs experienced by other recycling operations in Pennsylvania.

5 - YEAR PROJECTIONS—Towamensing Township Regional Material Recovery Facility

EXPENSES	2001	2002	2003	2004	2005
Labor					
Salaries and wages	159,000	184,620	211,201	257,874	286,845
Overtime	6,360	7,385	8,448	10,315	11,474
Payroll taxes	12,650	14,688	16,803	20,516	22,821
Other employee benefits (insurance, etc.)	35,537	41,263	47,203	57,635	64,110
Subtotal	213,547	247,956	283,656	346,340	385,249

Utilities

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Electric	12,000	16,615	21,231	25,846	30,462
Telephone	1,800	1,836	1,873	1,910	1,948
Water & Sewer	500	525	551	579	608
Gas/Heating	10,000	10,250	10,506	10,769	11,038
Subtotal	24,300	29,226	34,161	39,104	44,056
Insurance	6,000	6,120	6,242	6,367	6,495
Professional Services					
Engineering	5,000	5,025	5,050	5,075	5,101
Legal	2,500	2,513	2,525	2,538	2,550
Accounting	5,000	5,025	5,050	5,075	5,101
Miscellaneous	2,500	2,513	2,525	2,538	2,550
Subtotal	15,000	15,075	15,150	15,226	15,302

EXPENSES—continued

Maintenance	2001	2002	2003	2004	2005
Vehicles	500	550	605	666	732
Forklift, Bobcat, Loader	2,500	2,750	3,025	3,328	3,660
Scale	500	550	605	666	732
Oil, fuel, grease	7,500	8,250	9,075	9,983	10,981
Repair & maintenance	6,000	6,600	7,260	7,986	8,785
Tires	2,000	2,200	2,420	2,662	2,928
Vehicle parts	5,000	5,500	6,050	6,655	7,321
Tools/Safety equipment	1,000	1,100	1,210	1,331	1,464
Subtotal	25,000	27,500	30,250	33,275	36,603
Office/Administration					
Postage	2,000	2,040	2,081	2,122	2,165
Printing	2,500	2,550	2,601	2,653	2,706
Office Supplies	2,500	2,550	2,601	2,653	2,706
Legal Advertising	250	255	260	265	271
Computer Expense	3,000	3,060	3,121	3,184	3,247
Copying	1,500	1,530	1,561	1,592	1,624
Travel	2,000	2,040	2,081	2,122	2,165
Seminars/dues	1,500	1,600	1,700	1,800	1,900
Publications, subscriptions	500	510	520	531	541
Subtotal	15,750	16,135	16,526	16,922	17,325
Operations					
Operating supplies	7,500	7,650	7,803	7,959	8,118
Reserve for capital stock replacement/ Improvements (8% of bldg./eqmt. cost)	86,640	86,640	86,640	86,640	86,640
Disposal of recycling residue (based on 5% of total tonnage)	4,000	6,663	9,456	12,384	15,453
Subtotal	98,140	100,953	103,899	106,983	110,212
TOTAL	379,437	419,858	461,965	531,481	577,680

ESTIMATED ANNUAL REVENUE

- Revenue from sale of materials is based on current market value for each commodity proposed for recovery by the program. These revenues are subject to major fluctuations due to market conditions. Therefore, they could be better or worse than what is projected for this analysis.
- Grant revenues are shown at zero for the year 2005 and beyond, since the State's Recycling Fee is due to sunset in 2003.

REVENUES	2001	2002	2003	2004	2005
Sale of recyclables	103,240	167,764	232,289	296,814	361,338
County support	0	0	0	0	0
Grants (education)	4,000	6,500	9,000	11,500	
Grants (improvements, equipment)	78,000	78,000	78,000	78,000	
Interest	0	0	0	0	0
TOTAL	185,240	252,264	319,289	386,314	361,338
REVENUE LESS COSTS	-194,197	-167,594	-142,676	-145,167	-216,342

ESTIMATED ANNUAL REVENUE LESS ESTIMATED COSTS

As the final values of the projection show, the operation will cost a significant amount of money annually above the value of material revenues and grant reimbursements. To ensure the program is self-sustaining, an additional revenue source will be required. For instance, Lackawanna County has contributed approximately one million dollars on average, annually to sustain the operation of the County Recycling Center that accepts and processes about 20,000 tons of recyclable materials each year. Likewise, Susquehanna, Wayne and Wyoming Counties have contributed money out their general funds to augment the costs associated with each of the Counties’ recycling programs.

CONCLUSION

- Township needs to upgrade baler to produce a baler more acceptable to market specifications.
- Some building upgrade will be required to accommodate installation of a larger permanent baler such as, a poured concrete slab for anchoring the baler and sifting equipment out of the a portion of the building to accommodate storage of baled materials.
- The costs associated with modifying the operation to continue to serve the present multi-municipal area would be approximately \$150,000.
- For the Township to upgrade the operation to serve a County wide collection program, the expected capital cost will be in the range of \$1.3 million.
- The operating costs are projected to exceed the anticipated revenues for the program on an annual basis, unless the market value of recycled commodities becomes more favorable than what has historically be experienced.

RECOMMENDATIONS

- With either scenario, the Township should apply for and request Act 101 – Section 902 grant assistance with the development of the selected project.

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- If the Township elects to develop the project to serves the County wide collection program, then the Township should secure a revenue source to ensure availability of funds to cover annual operating costs associated with the project.
- Counties with recycling facilities have used administrative fees assessed on all tons of County generated municipal waste delivered to County designated disposal facilities as a means to acquire the necessary funds to make the program self-sustaining.
- Given that the County is proposing to implement a recycling collection program, the Township should consider serving as a location for containers proposed for the County collection system. This would simplify the process for the Township.

If you have any questions relating to the materials presented, please do not hesitate to call me at (717) 730-0404.

Sincerely,

R. W. BECK, INC.

Richard Schlauder

Director of Environmental Services

cc: Kathleen Kilbane, SWANA
Carl Hursh, PA DEP
Duane Dellicker, Carbon County Recycling Coordinator
Debbie Miller, R. W. Beck