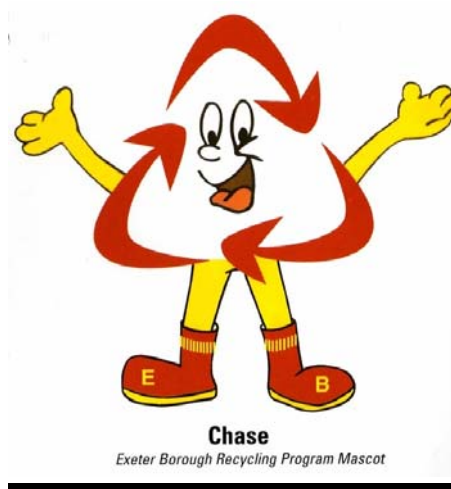


EXETER BOROUGH

MULTI-MUNICIPAL RECYCLING PROGRAM



Environmental Resources Associates

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STROUDSBURG, PENNSYLVANIA 18360

CONSULTANTS IN ENVIRONMENTAL RESOURCE MANAGEMENT



Printed on Recycled Paper

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1.0 Background

The Borough of Exeter (Borough) is located in Luzerne County. The Borough's population is approximately 5,955 persons; the number of households is 2,641 (2000 Census).

The Borough is an Act 101 mandated community and has operated a residential curbside recycling program since 1989. Traditionally commingled recyclables, (i.e. glass, plastic containers and aluminum and steel cans) segregated newspapers and corrugated cardboard are collected by Borough employees once each week. The Borough also provides collection for thirty of its commercial establishments. Commercial establishments place their recyclables curbside or in other areas of their choice for collection by the Borough.

Leaf, yard waste, grass clippings and tree trimmings are also collected on a once a week basis, April through November. Leaves, yard waste and grass clippings are to be placed in open containers. Tree and shrubbery trimmings are not to exceed three-feet in length or one-half-inch in diameter. Tree and shrubbery trimmings are required to be bundled, and tied with string and placed at the curb. There is no limit on the quantity of leaf and yard waste residents may set out for collection; however, the residents are required to limit each bundle/container to no more than thirty-pounds.

The Borough also acts as lead agency for a multi-municipal recycling program, providing various recycling services to eight neighboring municipalities; Wyoming Borough, West Wyoming Borough, Exeter Township, Avoca, Courtdale, Swoyersville, Jackson Township and Harveys Lake. The multi-municipal recycling program has evolved over several years and currently provides recycling services to approximately 30,706 residents and collects in excess of 3,500 tons of recyclables annually.

The Borough operates a consolidation center for recyclables collected through the multi-municipal recycling program and provides for the marketing of the recyclables collected. Recyclables are marshaled at the consolidation facility and marketed when sufficient quantities are available to transport economically to market. This system eliminates the need and associated cost for each member-municipality to handle and transport small loads of recyclables to market.

The multi-municipal recycling program services a total of approximately 30,706 persons and 13,189 households. The Borough of Exeter services to participating municipalities include,

- a) Providing Wyoming Borough (1,580-households) with the same weekly curbside collection services for recyclables and leaf and yard waste as the Borough.
- b) Providing once a week collection of recyclables from drop-off recycling sites located in and operated by West Wyoming Borough, Exeter Township, Courtdale and Avoca.

c) Consolidation, limited processing and marketing of recyclable materials for all participating municipalities.

- Swoyersville, using their own collection equipment, performs weekly residential curbside collection of commingled recyclables and newspaper. The recyclables are delivered to the Borough's consolidation facility for marketing.
- Harveys Lake collects commingled recyclables and newspaper at its drop off site and delivers the recyclables to the Borough's consolidation facility for marketing.
- Jackson Township provides a monthly drop off collection to its residents for commingled recyclables and newspaper and delivers the recyclables to the Borough's consolidation facility for marketing.

The Borough receives monetary support from the member municipalities in the form of service fees to help cover the costs of services it provides. Service fees are assessed to each participating municipality based on an agreement with the municipality and the type of services provided. The Borough also receives Act 101 Section 904 Performance Grant credits for the total amount of recyclables collected through the multi-municipal program to further help defray the operations costs of the Borough's program.

2.0 Purpose

The Borough of Exeter has requested technical assistance to conduct a review of the multi-municipal recycling program and to provide conclusions and recommendations for improving program operations and economics. The primary goal of this study is to conduct an assessment of curbside recycling services provided by the Borough.

Collection of leaf and yard waste, although not included in the scope of work, has been included in this study to provide a more accurate economic and operational perspective.

3.0 Program Operations Costs Analysis

The Borough requested that a cost assessment/analysis be conducted to determine the cost for operating the curbside collection programs (Exeter and Wyoming Borough) and the costs for providing other recycling services to participants in the multi-municipal program. The analysis does not include capital cost for construction of the recycling consolidation facility or collection equipment (funded primarily by Act 101 Section 902 Grants).

The following cost analysis is based on 2004 cost data and information provided by the Borough for the recycling program described above.

The analysis includes:

- ↗ Cost of recycling services (total and by individual municipality).
- ↗ Total annual program cost (recycling and leaf and yard waste).
- ↗ Program benefits (avoided costs of disposal and product value)

3.1 Labor Costs

Labor is the primary cost associated with the services the Borough provides to the multi-municipal (recycling and leaf and yard waste) program. Labor for the Borough's recycling and leaf and yard waste programs and its participation in the multi-municipal program are provided by the Borough's Street Department (Department). The Department consists of six employees: a foreman, an assistant foreman and four crewmembers. All Department employees are involved in the operation of the Borough's recycling and leaf and yard waste programs and provide services to the multi-municipal program. A breakdown of the Department's total annual labor costs (2004) is presented in Table 1.

**Table 1
Exeter Borough Public Works Department Total Annual Labor Costs**

Staff	Salary	Workmen's Compensation	Unemployment Tax	BC/BS Medical	FICA	Total
Foreman	\$25,500.00	\$2,037.45	\$296.00	\$9,666.36	\$1,950.75	\$39,450.56
Assistant	\$25,500.00	\$1,997.50	\$296.00	\$8,493.72	\$1,912.50	\$37,699.72
Crewman	\$20,904.00	\$1,670.23	\$296.00	\$3,529.68	\$1,599.16	\$27,999.07
Crewman	\$20,800.00	\$1,661.92	\$296.00	\$9,666.36	\$1,591.20	\$34,015.48
Crewman	\$20,800.00	\$1,661.92	\$296.00	\$5,856.00	\$1,591.20	\$30,205.12
Crewman	\$20,800.00	\$1,661.92	\$296.00	\$3,520.68	\$1,591.20	\$27,869.80
TOTAL	\$133,804.00	\$10,690.94	\$1,776.00	\$40,732.80	\$10,236.01	\$197,239.75

Notes:

- (1) Available hours: 2080 hours per person per year.
- (2) Total annual man-hours: 12,480 hours per year.
- (3) Average cost per man-hour: (12,480 hours / \$197,239.75 = \$15.80 per hour).
- (4) Hours dedicated to program: 8,120 hours per year recorded by Department.

3.2 Dedicated Labor Costs

The Borough reported that 8,120 man-hours were recorded by Department staff as dedicated to the operation of the multi-municipal program. Because all Department staff members actively participate in the operation of the recycling program, the average hourly cost is used to determine the approximate labor cost.

- ✓ Hours dedicated to the program 8,120 man hours
- ✓ Average hourly cost of labor \$15.80 per hour

8,120 hours X \$15.80 per hour = \$128,296.00 Annual Dedicated Labor Costs

3.3 Expenses

Expenses include; uniforms, communications (cell phones and radios), vehicle insurance, vehicle fuel, insurance bond, vehicle maintenance, and administration (Recycling Coordinator's salary). The program expenses are presented in Table 2.

**Table 2
Program Expenses**

Category	Cost
Uniforms	\$ 1,599.00
Communications	\$ 2,340.00
Vehicle Insurance	\$11,956.00
Vehicle Fuel	\$ 9,021.89
Recycling Bond	\$ 100.00
Vehicle Maintenance	\$ 5,222.80
Administration	\$ 9,500.00
Total Expenses	\$39,739.69

3.4 Multi-municipal Program Income

Income consists of annual service fees paid by municipalities participating in the recycling program (to help defray the Borough's cost for services provided), sale/marketing of recyclable materials and Act 101 Section 902 performance award monies.

3.5 Municipal Fees

Table 3 lists the fee paid by each municipality participating in the program:

**Table 3
Municipal Fees**

Municipality	<i>Annual Fee</i>
Wyoming (1)	\$25,000
Exeter Twp.	\$ 1,800
W. Wyoming	\$ 1,800
Avoca	\$ 1,800
Courtdale	\$ 1,800
Swoyersville	\$ 1,800
Jackson Twp.	\$ 1,800
Harveys Lk.	\$ 1,800
TOTAL	\$ 37,600

Note:

(1) Wyoming Boroughs fees are calculated below, based on percentage of man-hours applied to each program.

Recycling (55%) - \$13,750.00

Leaf/Yard Waste - (45%) - \$11,250.0

3.6 Total Program Income

Table 4 provides the income derived from municipal fees, the sale of recyclables (corrugated cardboard) and Section 904 performance monies.

**Table 4
Recycling Income**

Source	Amount
Municipal Fees	\$37,600.00
Marketing (1)	6,860.91
Sect. 904	56,000.00
TOTAL	\$100,460.91

Note:

(1) Corrugated cardboard and newsprint.

3.7 Multi-municipal Program Costs

For the purpose of this analysis total costs for the multi-municipal program equals labor costs plus expenses minus income.

Labor/Expenses

Labor Costs - \$128,296.00
 Expenses - 39,739.69
 \$168,035.69

Income

Municipal Fees - \$37,600.00
 Marketing - 6,860.91
 Section 904 grant - 56,402.00
 \$100,862.91

Total Program Costs - \$67,172.78

Total Average Costs Per Hour- \$8.27

4.0 Cost Breakdown for Recycling / Leaf and Yard Waste Programs

Discussed below are the costs associated with the individual components of the curbside collection program. Although not included in the scope of work for this study it is deemed necessary to include the leaf/yard waste collection program in the economic assessment as it represents a significant portion of the Borough's collection efforts and costs.

4.1 Dedicated Man-hours Recycling and Leaf and Yard Waste

The estimated annual hours for Exeter Borough, Wyoming Borough and the other participating municipalities are listed below in Table 5. The estimates are based on information provided by the Borough.

**Table 5
Dedicated Man-hours**

Program	Exeter Borough	Wyoming Borough	Other Municipalities	Total
Recycling (1)	2,496	1,700	1,264	5,460
Leaf and Yard Waste (2)	1,260	1,400	-0-	2,660
Total Hours	3,756	3,100	1,264	8,120

Notes:

(1) Recycling – Fifty- two weeks.

(2) Leaf and yard waste – Thirty-five weeks (April to November).

4.2 Recycling Costs

For the purpose of this analysis total program costs for recycling services equals labor costs plus expenses minus income.

Labor/Expenses

Labor Costs -\$86,268.00 (1)
Expenses - + 26,721.51(2)
\$112, 989.51

Income

Municipal Fees- \$ 26,350.00 (3)
Marketing - 6,860.91
Section 904 grant - + 56,402.00 (4)
\$ 89,612.91

Notes:

(1) Based on man-hours dedicated to recycling (5,460 hours).

(2) Percentage of total expenses dedicated to recycling, based on applied man-hours.

(3) Percentage of Wyoming service fee, based on man-hours dedicated to recycling (55% - \$13,750) and the total annual municipal service fees of other participating municipalities (\$12,600).

(4) Section 904 Performance Grant (monies are used for program).

4.3 Municipal Recycling Costs

A breakdown of the Borough's costs (based on \$4.28 average hourly cost) associated with the recycling services it provides is contained in Table 6.

**Table 6
Municipal Recycling Costs Allocations**

Municipality	Total hours	Total cost
Exeter	2,496	\$10,686.44
Wyoming	1,700	7,278.43
W. Wyoming	139	595.12
Exeter Twp.	130	556.59
Courtdale	70	299.70
Avoca	104	445.27
Swoyersville	50	214.07
Jackson Twp.	25	107.04
Harveys Lake	36	154.13
Transfer / Misc.	710	3,039.81
Total	5,460	\$23,376.60

Total Recycling Program Costs - \$23,376.60

Total Average Costs Per Hour- \$4.28

4.4 Avoided Disposal Costs

An additional benefit of the multi-municipal recycling program is the direct or indirect savings that avoided disposal costs may provide to the participating municipalities. By diverting recyclables from the waste stream the costs of disposing of these materials has been avoided. These disposal cost savings generally provide the greatest benefits to municipalities who provide municipal waste collection services or contract for municipal waste collection services.

Table 7 reflects the avoided cost of disposal savings resulting from the tons of recyclables diverted from the waste stream.

**Table 7
Avoided Disposal Costs Recycling**

Sector	Avoided Cost
Commercial (1)	\$124,800.00 (2)
Residential (1)	83,380.00 (2)
TOTAL	\$204,180.00

Notes:

(1) Disposal fee estimated at \$60.00 per ton.

(2) Based on 1,373 tons of the residential waste and 2,080 tons commercial waste recycled.

4.5 Leaf and Yard Waste Costs

For the purpose of this analysis total program costs for leaf and yard waste services equals labor costs plus expenses minus income.

Labor/Expenses

Income

Labor Costs (1) \$42,028.00
 Expenses (2) + 13,018.18
 \$55,046.18

Municipal Fee (3) \$11,250.00

Notes:

(1) Based on man-hours dedicated to leaf and yard waste (2,660 hours).

(2) Percentage of total expenses dedicated to leaf and yard waste collection, based on applied man-hours

(3) Percentage of annual fee for Wyoming Borough based on man-hours dedicated to leaf and yard waste (45% - \$11,250).

4.6 Municipal Leaf And Yard Waste Costs

A breakdown of the Borough's costs (based on \$16.47 average hourly cost) associated with leaf and yard waste collection services are contained in Table 8. The cost breakdown does not include processing costs for leaves, yard waste and grass clippings, in that the Borough has not, to date, initiated operation of its composting facility.

**Table 8
Municipal Leaf/Yard Waste Costs Allocations**

Municipality	Total Hours	Total Cost
Exeter	1,260	\$20,749.35
Wyoming	1,400	\$23,054.83
Total	2,660	\$43,804.18

Total Costs - \$43,804.18

Total Average Costs Per Hour- \$16.47

Considering the relative number of households serviced by the leaf and yard waste collection programs within each of the boroughs (2,641 households in Exeter and 1,580 households in Wyoming) the applied man-hours and resulting costs per-household (\$7.86 per household in Exeter and \$14.59 per households in Wyoming) appears to be greatly disproportionate.

4.7 Cost Benefits

Table 9 reflects the avoided cost of disposal/savings resulting from the estimated eight hundred-tons of leaf and yard waste diverted from the waste stream. The table also reflects the estimated market value of the products that can be derived from the processing of leaf and yard waste (i.e.; mulch and compost).

**Table 9
Leaf/Yard Waste**

Benefits	Value
Avoided Cost (1)	\$48,000.00
Products (2)	\$16,000.00
TOTAL	\$64,000.00

Notes:

(1) Disposal fee estimated at \$60.00 per ton.

(2) Based on estimated 1,600-yards of compost/mulch at a market value of \$10.00 per ton.

5.0 Recycling Program Modifications

Recently the Borough modified its curbside recycling program. The Borough continues to collect commingled recyclables, (i.e. glass, plastic containers and aluminum and steel cans) and segregated newspapers once each week. Corrugated cardboard is no longer collected curbside within the Borough of Exeter.

Collection of corrugated presented a problem, many participants were not preparing corrugated properly (i.e. flatten corrugated and tie in bundles not to exceed three foot square). While monitoring collection practices, prior to program modifications, ERA observed that a substantial number of residents either failed to prepare corrugated cardboard properly. Although the corrugated cardboard was not properly prepared, collection crew members too time to flatten the boxes or ripped large pieces of corrugated into manageable sizes and placed them in their collection vehicles. Corrugated often quickly filled the collection trucks, requiring them to prematurely return to the consolidation center to unload.

Corrugated has not been eliminated from the Borough's recycling program, it is currently being collected at a drop-off site located at the Borough's recyclables consolidation center. The drop-off site accepts corrugated between the hours of 8:00 AM and 12:00 Noon the last Saturday of each month.

The Borough has added junk mail, magazines, catalogues and office paper (mixed paper) to its curbside collection program. These materials are collected commingled in plastic shopping bags (plastic bags). The preparation of newspaper has also been changed. Newspaper had previously been collected in brown paper bags or bundled and tied with twine. Newspaper is now collected separately in plastic bags.

The above noted changes are also in effect for the Wyoming Borough, with the exception of corrugated which continues to be collected curbside (once a month) as per an inter-municipal agreement. The Borough has also negotiated a \$25,000 increase in the service fee paid by Wyoming Borough (current fee now \$50,000). Increasing the service fee was deemed necessary to cover escalating costs for curbside collection, program administration and materials handling.

The above noted modifications to the curbside collection program were made in an attempt to increase the volume and types of recyclables collected, improve program economics and improve collection efficiency.

6.0 Observations

ERA made several visits to the Borough consolidation center to observe materials handling processes. ERA also accompanied the crews during curbside collections, on three occasions, to observe collection practices and equipment efficiency. Interviews and discussions were held with several of the recycling crew members to gain insight regarding collection and materials handling practices and equipment efficiency.

6.1 Participation

A windshield/drive-by survey was conducted to estimate household setout rates. Two sets of 100 households were included in the survey. The setout rate for the first set was 79 of 100 households or 79%; set number two was 77%, yielding an average setout rate of 78%. The percentage of setouts is not necessarily indicative of a curbside collection program's true participation rate. Some participants (e.g. singles and couples) do not generate sufficient quantities of recyclables to warrant placing them at the curb on a weekly basis. Participation rates can be assumed to be slightly higher than the setout rates.

A second survey was conducted to estimate the types of materials set out for collection (commingled, newspaper and/or mixed paper). This survey included 100 households, which set out recyclables for collection. The results of the survey are contained in Table 10.

**Table 10
Recyclables Setouts**

Recyclables	Setouts
Commingled & Paper	42
Commingled Only	38
Paper Only	20
Total	100

Based on observations during the surveys the estimated ratio of newspaper to mixed paper setouts was approximately six to one. Marketing records confirm the approximate ratio of newspaper to mixed paper collected was six to one.

6.2 Curbside Collection

As previously discussed the Borough uses a six-man crew for curbside collection of recyclables. The collection vehicles used by the Borough include three dump trucks (two with tow behind collection trailers) and one uni-body compartmentalized recycling collection truck, with three compartments. During collections commingled recyclables are placed in a separate container than plastic bags containing newspaper and mixed paper. Newspaper and mixed paper are placed in the same collection container.

It is noteworthy that the collection fleet has been purchased (with assistance from Act 101 Section 902 Grants) over the past ten-years to meet the diversified needs of the evolving multi-municipal recycling program. In addition to curbside collection fleet vehicles are also used to deliver empty recyclables collection trailers and pick up full collection trailers from various municipal drop-off sites.

Although ERA observed collection practices on three separate occasions a full crew was not available on any of these occasions. On each occasion crewmembers were absent as a result of sickness or injury. The following are observations made by ERA during curbside collection of recyclables from the Borough's residential and commercial properties.

Residential

- Collection equipment does not have sufficient capacity to efficiently accommodate the volume of newspaper and mixed paper being collected. Crewmembers currently load newspaper into the cabs of the collection trucks to increase collection capacity and improve collection efficiency.
- As a result of the large volume of newspaper and mixed paper collected, crewmembers are required to load a considerable number of bags of these recyclables over their head. This is a result of the height of the dump trucks and the height of the sides of the trailers (when compartments are close to full). This situation increases the level of effort required to load materials and could result in injuries to crewmembers.
- Improperly prepared and/or contaminated recyclables (e.g. mixed paper and newspaper commingled in one plastic bag, newspaper and/or mixed paper placed in paper rather than plastic bags and commingled materials that contained unacceptable materials) were readily collected.
- No warning or violation notices were left to inform residents of the aforementioned improper preparation of recyclables.
- More than seventy five percent (75%) of the households observed set out recyclables.

- Collection vehicles are not well suited to navigate the narrow and/or dead-end streets and alleys, in the older sections of the Borough. Due to their size (particularly vehicles with trailers) the current collection vehicles lack the maneuverability required to efficiently collect in these areas. Collection vehicles back down some of the dead end streets to collect recyclables. ERA has discussed the aforementioned situation with the Borough and concurs with their plans to purchase a heavy-duty pick-up truck with a dump body for use in collecting narrow streets.
- Although safety orange colored sweatshirts are provided to crewmembers, during cold weather conditions blue uniform jackets cover the sweatshirts. This situation could be dangerous, as visibility of the crewmembers (by approach traffic) during curbside collections is important to their safety.

Commercial

- Collection services provided by the Borough are equal to or better than those normally provided by the private sector.
- Recyclables were collected at the curbside and at several other locations (e.g. in back sections of parking lots, adjacent to dumpsters).
- All of the commercial establishments observed had placed recyclables setout for collection.
- Several of the restaurants and taverns serviced set out large volumes of recyclables, in particular glass and metal beverage containers. Setouts ranging from five to eight (thirty to forty-gallon) collection containers and numerous corrugated boxes and or beverage cases filled with beverage containers were not uncommon. Collection of the commercial establishments was time consuming and labor intensive.
- Beverage containers (bottles and cans) collected from some of the restaurants and taverns were not emptied of their contents. This situation resulted in notable amounts of liquid leaking out of the collection trailer.

6.3 Materials Handling / Processing

Materials processing is accomplished at the Borough's consolidation center and primarily consists of manual sorting and de-bagging of newspaper and mixed paper, removal of any unacceptable material, and consolidation of the recyclables collected. Corrugated cardboard is placed into one of two subsurface concrete wells. The second well is used for consolidation of commingled recyclables (i.e. glass, plastic containers and aluminum and steel cans).

The wells are ramped to house thirty-cubic yard roll-off containers. When the roll-off containers are filled the Borough transports them to markets.

Note: The Borough has applied for Act 101 Section 902 funding assistance to purchase a horizontal compactor and two forty-cubic yard containers. The addition of the compactor and storage containers will greatly increase processing and storage capabilities and reduce market transport cost for corrugated and potentially other recyclables.

Newspaper and mixed paper are off-loaded/tipped onto the floor of the maintenance building. The newspaper and mixed paper are first separated. Mixed paper is de-bagged and placed into a thirty-cubic yard roll-off container. Newspaper is similarly de-bagged, transported (via a front-end loader) to the adjacent recycling building and placed into a thirty-cubic yard roll-off container. When the roll-off containers are filled they are transported to markets. The plastic bags previously used for collection of newspaper and mixed paper are placed in a container for disposal.

7.0 Marketing

The Borough markets commingled recyclables at the Lackawanna County Recycling Center. The Lackawanna County Recycling Center has proven to be a dependable, competitively priced and conveniently located outlet (approximately forty (40) miles roundtrip) for commingled materials. Currently the commingled recyclables are marketed at \$0.00 per ton delivered.

The Borough has recently entered into a marketing agreement (for marketing corrugated, newspaper and mixed paper) with Monroe County Municipal Waste Management Authority (MCMWMA). The MCMWMA operates several recycling drop-off depots and a recyclables consolidation center in Monroe County. The MCMWMA accepts recyclables from several counties and municipalities within the region and provides them marketing services.

The MCMWMA has been able to establish some very favorable arrangements with various market outlets for the purchase of recyclables. This situation results from economy of scale, the large volume and consistent quality of recyclables the MCMWMA has to offer the market place. By marketing their recyclables through the MCMWMA the Borough is afforded some of the benefits of economy of scale.

The agreement that the Borough has entered into with the MCMWMA provides it with the best of all worlds. The agreement stipulates that the Borough will receive 85% of current market value for materials delivered to the MCMWMA and 46% of current market value if collected at the Borough's consolidation center.

The agreement also provides for guaranteed floor (minimum) prices for recyclables and the option to market recyclables (at any time) with other markets of the Borough's choosing.

Corrugated cardboard is currently marketed at Solomon, Inc. (Solomon) located in nearby Wilkes Barre. Given that the market price offered by Solomon is higher than that offered by the MCMWMA and the closer proximity (approximately twenty-mile roundtrip to Solomon vs. eight-mile roundtrip to MCMWMA) this market is the most practical from both an economic and operations standpoint.

Currently the corrugated is transported loose in thirty-cubic yard roll-off containers. The roll-off containers hold less than three-ton of loose corrugated when full

The Borough has applied for Act 101 Section 902 funding assistance to purchase a compactor and two forty-cubic yard containers. ERA concurs with the Borough's intent to purchase a compactor. The addition of the compactor and storage containers will greatly increase processing and storage capabilities and reduce market transport cost for corrugated and potentially other recyclables.

8.0 Conclusions and Recommendations

The following conclusions and recommendations are offered for the Borough's consideration. The conclusions and recommendations are based on ERA's observations of recyclables collection and handling/processing practices and its review and assessment of the Borough's recycling program.

Conclusions

- The Borough has operated a successful multi-municipal recycling program, which has provided economical recycling services to the cooperating municipalities. Recent changes in recyclables collection practices have created some new challenges and opportunities relative to collection, processing and marketing of recyclables.
- The current method of collection and handling/processing of recyclables is inefficient and labor intensive.
- High visibility cold weather gear (jackets or vests) are needed to improve visibility /safety of the crewmembers during collections.
- Collection of large volumes of recyclables at commercial establishments is time consuming and labor intensive.
- Improvements in recyclables collection, handling/processing practices and associated equipment would positively impact program efficiency and economics.

Recommendations

- The planned purchase of a compactor and two storage containers will greatly increase processing and storage capabilities and reduce market transport cost for corrugated and potentially other recyclables.

- To improve collection efficiency it is recommended that the Borough consider the following.
 - ✓ Collection equipment does not have sufficient capacity to efficiently accommodate the volume of newspaper and mixed paper being collected (simultaneously) within the Borough under the current curbside collection program. Given that the recorded ratio of newspaper to mixed paper collected is respectively six to one, collection efficiency could be improved if newspapers were collected three times a month and mixed paper once per month.

 - ✓ Improve enforcement efforts relative to preparation of recyclables (residential and commercial). Instruct collection crews not to collect improperly prepared or contaminated recyclables and to attach a warning notice identifying the problem(s) and required corrective actions. The notice should also state that there are penalties for failure to comply with recycling regulations.

The Borough will undoubtedly receive calls regarding recyclables that were not collected as a result of improper preparation; however, Borough officials must support the recycling collection crew's actions in order for this endeavor to be effective.

- ✓ Increase recycling education efforts (e.g. press releases, discussion at public meetings and/or public notices). Emphasize the many benefits that recycling affords the need for everyone's participation and cooperation in the proper preparation of recyclables and that it is the law.

- ✓ Monitor and evaluate collection practices (for recyclables and leaf and yard waste). Review evaluations, manpower and equipment needs routinely with the Street Department, particularly prior to any planned program changes or modifications.

- ✓ Purchase a heavy-duty pick-up truck with a dump body for curbside collection along narrow streets.

- ✓ The Borough should charge a nominal fee to commercial entities to help cover the costs of recyclables collection services.

- To improve processing efficiency it is recommended that the Borough consider the following.
 - ✓ Provide/schedule separate days for collection of newspapers and mixed paper. Separate collection will greatly reduce the time and effort required to separate and process these recyclables.
 - ✓ Eliminating plastic bags for collection of newspapers and mixed paper. Purchase residential recycling containers with lids to replace plastic bags. Rectangular plastic containers (eighteen to twenty-gallon capacity) with lids should provide more than ample capacity and weather protection. The elimination of plastic bags, for collection of newspapers and mixed paper, will also eliminate the time consuming need to manually de-bag these recyclables and the time and cost associated with handling and disposing of the plastic bags. *Note:* The Bi-Lo chain of stores collects and recycles plastic bags. As an interim measure it is suggested that the Borough contact the Bi-Lo Store located in Wilkes Barre regarding accepting their plastic bags.
 - ✓ Purchase a horizontal compactor and two forty-cubic yard containers to increase processing and storage capabilities and reduce market transport cost for corrugated and potentially other recyclables.
- Strongly encourage the public and commercial sectors participation in the Borough's drop-off recycling program for corrugated.
- Establish a recycling advisory committee comprised of representatives of each of the member municipalities and interested members of the public and commercial sectors. The recycling advisory committee should meet regularly to review program performance, provided guidance for program improvements and assist with educating businesses and the public.
- Expand the opportunities for recycling of corrugated at the drop-off site, for both the public and commercial sectors.
- Complete the development of the Borough's compost facility and initiate operations.