

**SWANA RECYCLING
TECHNICAL ASSISTANCE STUDY**

FINAL REPORT

**SAYRE BOROUGH,
BRADFORD COUNTY PENNSYLVANIA**

**EVALUATING THE ADDITION OF MULTI-FAMILY AND
COMMERCIAL UNITS TO EXISTING MUNICIPAL
RECYCLABLES COLLECTION**



GANNETT FLEMING, INC.



HARRISBURG, PENNSYLVANIA

SEPTEMBER 2009

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SWANA RECYCLING TECHNICAL ASSISTANCE STUDY
EXECUTIVE SUMMARY

**EVALUATING THE ADDITION OF MULTI-FAMILY AND COMMERCIAL UNITS
 TO EXISTING MUNICIPAL RECYCLABLES COLLECTION**

Sayre Borough (Borough) is considering the addition of commercial establishments and multi-family dwellings to its existing municipal curbside recycling program. Gannett Fleming, Inc. (GF) has reviewed the Borough’s recycling program and summarizes findings and recommendations in this Executive Summary.

Residential Recycling

Key Findings - The Borough recovers 37 pounds per person per year of residential recyclable materials. Compared to other Pennsylvania municipalities, residential recyclables diversion rates are low. Using national averages and projections from the Environmental Protection Agency (EPA), it is estimated there are 355 tons of residential recyclables still available annually for recovery, making increased residential recycling a target area for improvement. Observed residential recycling participation rates based on curbside set-outs was 18% (Refer to **Section 3.2**).

Table 3-1 (ES)					
Sayre Borough Waste Disposal and Recycling Rate Calculation (2006 - 2008)					
Year	Curbside Recycling Tons	Drop-off Recycling Tons**	Subtotal Recycling Tons	Municipal Waste Disposal Tons	% Recycling*
2006	68	76	144	1,839	7.3
2007	65	86	151	1,791	7.8
2008	108	95	202	1,762	10.3

* Calculation based on total recycling tons/generated waste (recycling plus waste disposal)

**Note: Drop-off tons may include bottles and cans collected curbside and not taken directly to market

Collection of glass only using a separate collection vehicle is an inefficient use of labor and equipment and limits the Borough’s flexibility for using these equipment and labor resources for other purposes (e.g. expanding multi-family and commercial recycling).

Recommendations - Increase residential recyclables recovery through:

- Promotion & education
 - curbside feedback (stickers/tags with a checklist identifying the problem)
 - Consider targeting increased residential paper since paper may be the lower hanging fruit since a portion of returnable/deposit containers go to NY.
- Increased financial incentive/disincentive
 - Increase the \$1.00 fee for tags for additional waste service so the cost for “extra” trash disposal is a more effective financial incentive to recycle more.
- Increased enforcement

- Increased recycling container capacity
 - Allow customers to obtain additional recyclable containers as needed. After the existing supply of recycling bins is depleted move to larger capacity containers for commingled recyclables.

Reevaluate existing glass collection methods and costs and implement a more efficient, more cost-effective alternative.

Multi-family Housing Recycling

Key Findings - There are sixty multi-family housing units (3-4 units per structure) currently serviced by the private sector. These sixty units can be added to the existing collection system without changing material types or collection procedures. Conservatively, adding sixty multi-units will add less than 20 new recycling stops along existing routes; accounting for about 15 - 20 added minutes of collection time for the route assuming 45 - 60 seconds per stop (curb sort).

Ordinance

The Borough ordinance mandates landlords in multi-family housing to require tenants, by a clause in their lease, to recycle. Landlords must also provide suitable containers and written instructions for recycling.

Under ordinance Sections 108 and 109, Multi-family housing, is defined as "4 or more dwelling units" which has the following result for the smaller multi-family units that the Borough is targeting for collection:

- 3-unit dwellings are not defined as residential or commercial.
- 4-unit dwellings are commercial sector and are to be collected by private haulers.

Recommendation - Add the sixty units of multi-family housing to the existing residential recycling collection, with no change in service structure. The Borough should notify the landlords about service to these units, provide educational resources for distribution to tenants, and clarify collection locations. Landlords should be given 60-90 days to comply with requirements with assistance from the Borough for educational resources, bins, etc.

Update the ordinance to accurately define residential and commercial sector multi-family units: Residential up to four units; commercial five or more. Specify the Borough may collect residential multi-family units up to four units.

Commercial Recycling

Key Findings - Waste and recyclables from commercial establishments, institutions and industry are currently collected by private haulers from 222 units in the Borough. Commercial sector recycling is addressed via an ordinance mandating collection and

reporting of commercial recycling efforts. The majority of commercial establishments generate a waste stream that differs from residential wastes/recyclables, typically including higher quantities of office paper and corrugated cardboard. Industrial and institutional facilities also generate types/quantities of recyclables inconsistent with residential generation. The Borough is not equipped to handle large quantities of mixed paper, corrugated cardboard, or other recyclables not collected using current procedures, equipment and staff.

Recommendation - Gannett Fleming does not recommend adding commercial collection to the Borough’s existing efforts at this time. The recently enacted Borough ordinance mandates commercial recycling and outlines participation requirements of the establishments and private haulers. Notify commercial establishments of ordinance requirements and give them 60-90 days to comply. Notifications and public education efforts should also include private haulers. Establish procedures for yearly data collection from the commercial establishments as outlined in the Ordinance.

Compliance

Finding - Several Act 101 and Act 140 requirements are deficient as determined by the PADEP. These included:

- Twice annual commercial establishment education,
- Enforcement of the Borough’s recycling ordinance,
- Commercial Recycling Reports are not sought or obtained from businesses, and
- All multi-family housing units may not be recycling.

Recommendation - In addition to recommendations above:

- Develop/distribute recycling procedures for commercial establishments at least once per year and include commercial recycling information on the Borough website.
- Develop penalties for non-compliance and use Code Enforcement Officers and or other appointees to enforce the program.

Table 3-4 2007 Comparison of Per Capita Recycling Total Recycling (Curbside and Drop-off included)	
National Per Capita Recycling Recovered*	1.15 lbs/day
Sayre Borough Per Capita Recycling Recovered**	0.14 lbs/day

*Environmental Protection Agency (EPA) - does not include composting

**302,000 lbs (curbside and drop off)/5813 (2000 Census pop)/365 days per year

Gannett Fleming recommends that Sayre Borough use a phased approach for increasing residential recycling and/or adding multi-family housing recycling to existing efforts. Phased strategies should include:

Initial Phase(s)

- Implement and enforce the existing Ordinance, targeting commercial and private hauler reporting.
- Add the identified sixty multi-family housing (3-4 unit structures) to existing collection.
- Add a commercial recycling educational component to maintain regulatory compliance.
- Increase residential participation and recycling recovery (ongoing).
 - Increase the \$1.00 tag fee to discourage waste disposal and increase recycling.
 - Increase recyclable container capacity through additional and larger capacity recycling containers.

Future Phase(s)

- Ongoing evaluation of collection methods, equipment and staff utilization keeping in mind there should be opportunities to reduce garbage collection system costs as recyclables diversion increases.
- If commercial recycling continues to be a priority and desired, consider modification of existing collection methods and equipment (e.g. cardboard dumpsters, roll-offs, etc.) to initially address large quantities of mixed paper and corrugated cardboard.

**SWANA RECYCLING
TECHNICAL ASSISTANCE STUDY
DRAFT REPORT**

**EVALUATING THE ADDITION OF MULTI-FAMILY AND COMMERCIAL UNITS
TO EXISTING MUNICIPAL RECYCLABLES COLLECTION**

1.0 INTRODUCTION

Sayre Borough (Borough), Bradford County, Pennsylvania, is considering the addition of commercial establishments and multi-family dwellings (with three or four units) to their existing municipal curbside recycling program. Through the partnership with the Solid Waste Authority of North America (SWANA), the Pennsylvania State Association of Township Supervisors (PSATS), the Pennsylvania Department of Environmental Protection (PADEP), the Borough was awarded \$7,500 in technical assistance through Gannett Fleming, Inc. (GF). The goal of this project is to determine if adding the additional curbside collection stops can be accomplished efficiently with the existing staff, equipment and resources.

2.0 BACKGROUND

Sayre Borough is located in northcentral Bradford County, near the border of New York State. As of the 2000 census there were 5,813 residents situated in this 2.0 square mile area. The Borough is mandated under the Municipal Waste Planning, Waste Reduction and Recycling Act of 1988 (Act 101) to have an ordinance requiring recycling by residential, commercial, institutional or municipal establishments, and from community activities. The Borough crews conduct bi-weekly, residential curbside recyclables collections and private haulers currently collect recyclable materials from commercial establishments and multi-family dwellings with more than two units. The Borough also operates a drop-off for recyclable materials.

Table 2-1 Sayre Borough Snapshot of Existing Curbside Recycling Program	
# of Households Currently Serviced Curbside	2,215
# of Commercial Establishments Proposed Curbside	222
# of Units (Multi-Family with 3 or 4 units) Proposed for Curbside	60

3.0 EXISTING WASTE MANAGEMENT SYSTEM

In December 2008, Sayre Borough enacted Ordinance 865, which establishes a program for the collection, storage, transportation, processing and disposal of municipal waste and recycling. This includes requirements for the mandatory separation of recyclable

materials, regulating collectors, prohibiting disposal of recyclables and leaf waste, and empowering the Borough to establish regulations to fix penalties for violation of the ordinance. Gannett Fleming reviewed this ordinance includes the following highlights pertinent to the collection of multi-family and commercial recycling in the Borough.

- Mandatory requirements to recycle glass containers, aluminum cans, corrugated cardboard, newspapers and office paper.
- Requirements that landlords in multi-family housing require tenants, by a clause in their lease, comply with recycling requirements. Landlord must also provide suitable containers and written instructions for recycling.
- Requirements that commercial establishments must report a plan for recycling once per year. The plan shall include:
 - Name and address of the premises
 - Name and address of private hauler servicing the establishment
 - Name and address of employee responsible for recycling
 - Methods by which recyclables removed and their destination.
- Borough shall approve recycling plans once per year within 60 days of filing.
- Establishment will report changes to the plan as needed.
- Establishments must complete a recycling report quarterly that indicates the tonnages of recyclables recovered. This must be accompanied by weigh slips.

Table 3-1 examines waste disposal and recycling tonnages and the recycling rate trend over the last three years. It should be noted that this does not include organics management. The trend indicates an increase in recycling and a decrease in disposal.

Table 3-1					
Sayre Borough Waste Disposal and Recycling Rate Calculation - 2006 - 2008					
	Curbside Recycling Tons	Drop-off Recycling Tons**	Subtotal Recycling Tons	Municipal Waste Disposal Tons	% Recycling*
2006	68	76	144	1,839	7.3
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**Note: Drop-off tons may include bottles and cans collected curbside and not taken directly to market

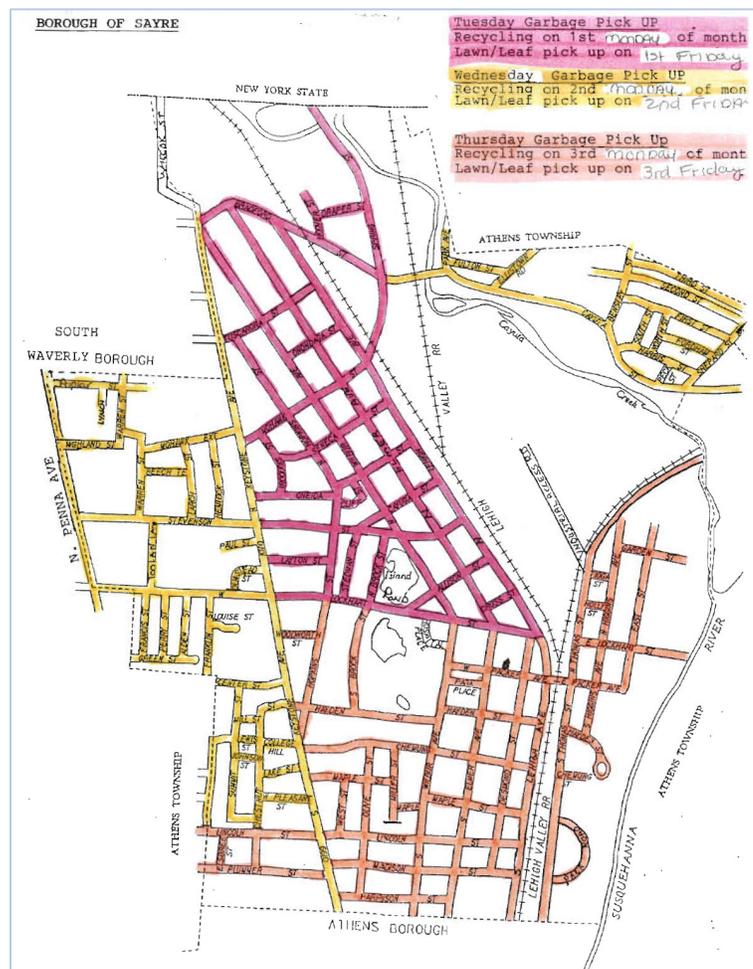
3.1 Borough Waste Collection

Residential municipal waste is collected by Sayre Borough municipal crews and delivered to the Bradford County Landfill operated by the Northern Tier Solid Waste Authority (NTSWA). 1,762 tons of waste from Sayre Borough were disposed of in 2008. Waste collection equipment is owned and operated by the Borough.

The Borough is divided into three zones for waste collection. Zone collection days are Tuesday, Wednesday and Thursday each week. Property owners are limited to two forty-five gallon capacity containers or three thirty-two gallon containers for each pick-up period. Additional containers above the base limit can be set out by obtaining a \$1.00 sticker for each additional container. The program is funded through a combination of tax revenue and a user fee of \$26.00 per quarter, which is collected through the sewer billing process. Residents can opt-out of this service, but must provide proof of collection by another means. According to Sayre Borough officials, the waste and recycling collection budget is approximately \$330,000 including labor and benefits.

Private haulers collect wastes from multi-family housing (more than two units) and commercial establishments. Three private haulers operate in the Borough:

- B & E Disposal
- Northern Tier Solid Waste Authority
- Superior Disposal (division of Casella Waste Management)



3.2 Borough Recyclables Collection

3.2.1 Curbside Collection

The Borough has made a concerted effort to improve curbside recycling in the last few years. Improvements include a distribution of bins to residents and additional education and promotion activities. The residential recycling rate has increased from seven to ten percent from 2006 to 2008 (Section 3.0). The materials listed in **Table 3-2** are collected as source separated through a curb sort process. Residential curbside recycling is collected twice per month from each of the three garbage zones. In 2008, there were 108 tons of recyclables collected at the curb.

Table 3-2 Sayre Borough Acceptable Curbside Recyclables	
Plastic	#1 & #2 Bottles
Newspapers	Dry and Bundled
Magazines	Dry and Bundled
Glass	Clear, Green and Brown Bottles
Tin/ Bimetal Cans	Rinsed
Aluminum Cans	Rinsed
Cardboard	Corrugated boxes and kraft bags

Table 3-3 compares Sayre Borough’s per capita recycling rate with other municipalities in order to gauge the effectiveness of the Borough’s curbside recycling efforts.

Table 3-3 Municipal Comparison of Per Capita Curbside Recycling					
Municipality	County	Data Reporting Year	Curbside Recycling Tons	2000 Census Population	Per Capita Yearly Recycling (lbs.)
W. Brandywine Township	Chester	2005	115	7,153	32
City of Lebanon	Lebanon	2007	452	24,461	37
Sayre Borough	Bradford	2008	108	5,813	37
Downingtown Borough	Chester	2005	320	7,589	84
City of Allentown	Lehigh	2005	6,059	106,632	114
Upper Uwchlan Township	Chester	2005	464	6,850	135
Conshohocken Borough	Montgomery	2005	625	7,589	165

Sayre Borough recovered 37 pounds per person per year, which ranks low in per-capita recycling when compared to some other mandated Pennsylvania municipalities. On a national level, the Environmental Protection Agency (EPA) provides data regarding recycling/recovery rates in the United States. In 2007, EPA reported a national recycling average of 1.15 pounds per person per day. As seen in **Table 3-4**, at 0.14

pounds per person per day Sayre Borough recovers far less than EPA’s national recovery rate.

To make a determination if Sayre Borough has the resources available to add multi-family housing and commercial establishments to the current curbside recycling program, GF estimated the quantity of residential recyclables potentially available for recovery. **Table 3-5** uses projections from the Environmental Protection Agency (EPA) to estimate additional tons of recycling available for recovery. Materials identified in the chart correspond to those currently collected by Sayre Borough. As explained in Section 4.1, aluminum can recycling in the Borough is impacted by the New York State Bottle Bill.

Table 3-4 2007 Comparison of Per Capita Recycling Total Recycling (Curbside and Drop-off included)	
National Per Capita Recycling Recovered*	1.15 lbs/day
Sayre Borough Per Capita Recycling Recovered**	0.14 lbs/day

*Environmental Protection Agency (EPA) - does not include composting

**302,000 lbs (curbside and drop off)/5813 (2000 Census pop)/365 days per year

Table 3-5 Sayre Borough Estimated Potential for Recovery - Curbside Breakout				
Material	% of Total Waste Generation Nationally*	Yearly Potential Tons Generated***	Actual Yearly Recovered Tons at the Curb****	Additional Available Tons for Recovery
Newspaper	4.9%	96	63	33
Magazines	1.0%	20	7	13
Glass Packaging	4.5%	88	22	66
Steel Packaging	1.1%	22	10	12
Aluminum Packaging	0.7%	14	1	13
Corrugated Boxes	12.3%	242	19	223
Plastic Bottles*****	0.7%	14	18	-4
Other**	74.8%	1,469	n/a	n/a
Totals	100.0%	1,964	140	356

* 2007 Environmental Protection Agency (EPA) Characterization of MSW

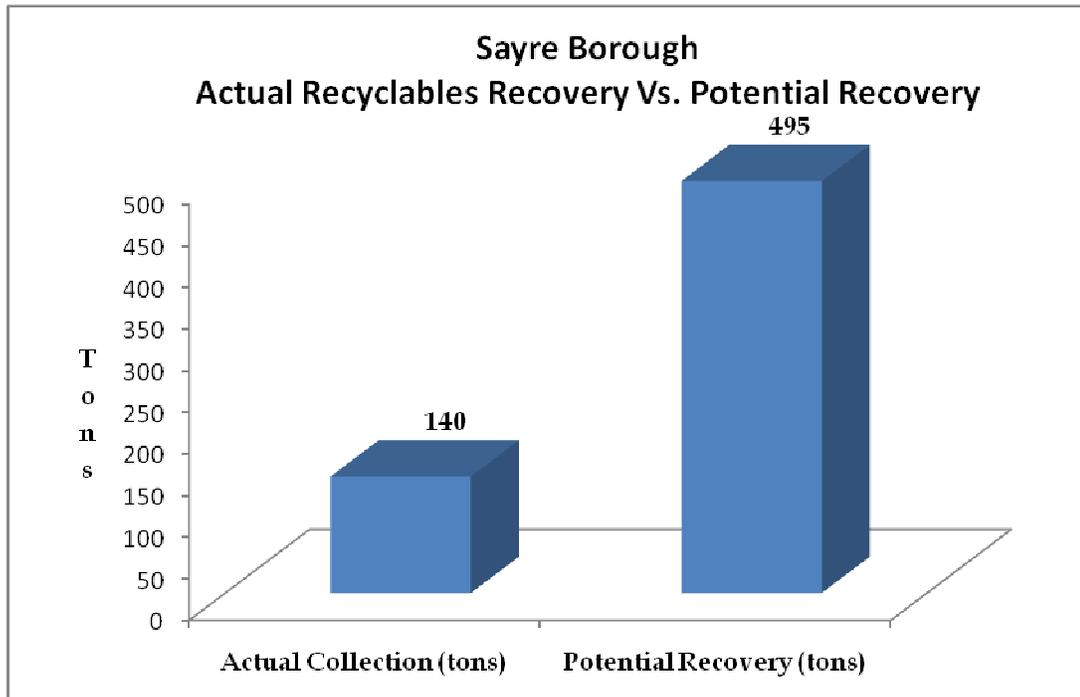
** Recyclable and Non-Recyclable

*** Based on 2008 Sayre Total Waste - 1,964 tons multiplied by the % national generation (rounded)

**** Based on 2008 data provided by Borough including estimations of glass and aluminum

***** The Borough exceeds the EPA average for plastic recovery, thus resulting in (-) or zero additional tons

Based on 2008 data provided by Sayre Borough, 140 tons of recyclables were recovered, not including organic waste. Using EPA projections, it is estimated there is 355 tons of residential recyclables still available annually for recovery. This method indicates that twenty-five percent of total waste generated is recoverable through existing Sayre Borough curbside recyclable collections. Currently, only ten percent is recovered (See Table 3-1). The Borough collects about thirty percent of the total available recyclables from residential collections. There is opportunity to recover 2.5 times the current quantity of residential recyclables. The large quantity of residential recyclables that remains in the waste stream should be factored into staffing and operational decisions including service to additional multi-family and commercial units.



3.2.2 Drop-off Collection Including Organic Materials

The Borough Recycling Center and composting site is located on South Thomas Avenue at the Public Works Building. The site is available to residents on Mondays and Wednesday from 4:00 pm to 7:00 pm and Saturdays from 8:00 am to 3:00 pm. The Borough staffs the center during these posted hours.



Materials accepted for composting include leaves, grass, garden residue, woodchips and tree limbs less than four inches in diameter. The Borough recently received Technical Assistance to improve the operation and efficiency of the composting program. It is estimated that the Borough processes 500 tons of organic materials annually. Yard waste is also collected at the curb.



All materials collected at the curb are also collected at the drop-off center. Additionally, mixed and office paper products are accepted. Glass bottles and aluminum cans collected at the curbside are commingled with materials from the drop-off. The drop-off center may be a resource for the Borough's efforts to collect recyclables from commercial and multi-family dwellings. Corrugated cardboard is stored loose in a temporary structure. The Borough desires to modify the process for handling cardboard in the future and may include a baling operation.



3.2.3 Recyclables Markets

All recyclables collected curbside and at the drop-off location are delivered to the Northern Tier Solid Waste Authority (NTSWA) Materials Recovery Facility in Burlington, Pennsylvania in accordance with the Northern Tier Municipal Waste Management Plan. Curbside materials are collected via Borough trucks, which drive to market when full and/or at the end of their route. The trip is approximately 22 miles one way. Drop-off materials are stored in divided roll-off containers that are serviced on a call-in basis by NTSWA. The Borough has budgeted \$10,000 in revenue from the sale of materials to NTSWA for 2009.

3.3 Existing Multi-Family and Commercial Recycling

Multi-family housing with one or two units are currently collected via the municipal curbside recycling collection system. There are sixty units of multi-family housing with three or four units per structure, which are the focus for addition to the collection.

Waste and recyclables from commercial establishments are currently collected by private haulers. 222 units in the Borough are considered commercial establishments, industries, or multi-family housing with five or more units per structure. As seen in Table 3-6, only one structure (apartment complex) would have a waste stream similar to those collected currently in the Borough’s recycling collection. The majority of other commercial establishments indicate a waste stream that is not consistent with residential wastes/recyclables and would include large quantities of office paper and corrugated cardboard. Industrial and institutional facilities may also have other types of recyclables not traditionally found in a residential setting.

Table 3-6 Sayre Borough Estimated Number of Commercial Establishments	
Establishment Type	Estimated Number
Restaurant/ Food	30
Small Offices (i.e. Insurance agents)	100
Industrial or Institutional	12
Apartment Complexes (5+ units)	1

4.0 BOROUGH OF SAYRE SITE VISIT

Gannett Fleming performed a site visit and windshield survey in Sayre Borough on May 22, 2009. Observations are reported in the following subsections.

4.1 Curbside Recycling Route Audit

The Zone 2 recycling route collection was observed starting at 7:30 am. The route is serviced using three trucks; one packer truck, one divided compartment recycling truck and one dump truck containing barrels for glass. Zone 2 is the smallest of the three zones. The observed collection was the second of the month and was on Friday prior to the Memorial Day weekend.



While conducting the audit there was a noticeable absence of aluminum cans set out for recycling. Discussion with the Borough Manager indicated that since Sayre borders New York State, cans and bottles (plastic and glass) are subject to the New York Bottle Bill and deposit requirements. Many plastic and glass containers are handled through redemption centers and are not recovered by Sayre Borough. The few cans and glass bottles set out are collected in barrels and commingled with Borough drop-off materials. Scavengers collect some deposit containers.

Residential participation in Zone 2 was measured by documenting the number of households on each street with recycling set-outs versus the total number of households.

Table 4-1 Sayre Borough Participation Rate Audit Curbside Recycling Route of May 22, 2009 Zone 2			
Street	Total # Households	# Participating Households	% Participation
Perry	12	4	33%
Lockhart	25	3	12%
Alden	12	4	33%
Green	5	1	20%
Warren	13	0	0%
Mohawk	13	3	23%
Stevenson	33	4	12%
PA Ave	12	2	17%
Popular	14	0	0%
Lynch	4	1	25%
Hemlock	5	2	40%
Franklin	12	3	25%
First	22	5	23%
Second	17	4	24%
Robb	5	1	20%
Shepard	12	1	8%
Fordham	10	3	30%
Totals	226	41	18%

As seen in **Table 4-1**, observed participation was eighteen percent. While likely indicative of the overall participation rate, Borough representatives indicated that this route routinely demonstrated less participation than others, as does the second collection of the month.

4.2 Borough Manager Interview

During an interview with the Borough Manager, several relevant items were discussed:

- The Borough desires to focus on collection of the 60 multi-family dwellings, with a secondary goal of collecting commercial-sector units.
- In October 2006, PADEP conducted an audit of the Sayre Borough program which indicated that Sayre was not in compliance with some Act 101 and/or Act 140 requirements. The Borough, first and foremost, desires to be in compliance.
- The Borough waste and recycling budget currently exceeds \$330,000. It is not the desire of the Borough to engage in commercial recycling activities if requirements are being met by the private sector waste industry.

4.3 PADEP Compliance Audit Follow up

While no formal report was completed or submitted to the Borough, Gannett Fleming contacted the Williamsport Regional PADEP office regarding the audit. The following were found as deficiencies of the Sayre Borough Compliance Audit done in 2006 (with status in parenthesis):

- Recycling ordinance needed to be updated (Completed in December 2008).
- Composting site was not being managed and a permit-by-rule (PBR) had not been obtained (Completed July 2008).
- Commercial recycling education was not being completed according to requirements. Twice annual education (once every six months) is required by Act 101 and audit discussions included doing mass mailings and adding commercial recycling to the website (Outstanding).
- Enforcement of the Borough's recycling ordinance was non-existent (Outstanding).
- Commercial Recycling Report was not sought or obtained from businesses (Outstanding).
- Some multi-family housing units may not be recycling because the Borough only collects recyclables from one and two-unit residential dwellings and enforcement of the recycling ordinance was lacking (Outstanding).

4.4 Sayre Borough Equipment and Labor Resources

During the site visit, Gannett Fleming observed waste and recycling collection vehicles owned and operated by the Borough (see photo). Equipment is housed at the Borough Garage (Recycling Drop-off Center) on South Thomas Avenue.



Table 4-2 lists existing equipment and notes the size and use for each. With the exception of the 2009 Curbside Truck, other vehicles are aging and showing signs of wear. The Borough does not have enough space to garage all recycling vehicles, which are exposed to weather conditions.

Table 4-2 Sayre Borough Waste and Recycling Collection Vehicles		
Truck	Description/Size	Notes
2002 Mack Refuse Truck	25 cubic yard	Yard Waste Collection
1996 Mack Refuse Truck	25 cubic yard Packer	Residential Cardboard Collection, Scheduled for Replacement
1999 Ford F-550 Dump Truck	3 Ton	Curb Collection w/ Barrels for Glass
2003 International Recycling Truck	4 Compartments plus Cage	Curb Sort
1990 International Recycling Truck	5 Compartments plus Cage	Curb Sort
2009 Sterling Recycling Truck	5 Compartments plus Cage	Curb Sort

Sayre Borough employs the following waste and/or recycling collection labor:

- Foreman (1)
- Assistant Foreman (2)
- Operators/Laborers (4)
- Laborer (2)

According to data provided by the Borough, a total of 162 man hours are spent on waste and/or recycling related efforts each week. This includes curbside recycling collection, residential waste collection, yard waste collection and operation of the drop-off recycling center. This equates to \$2,065 per week in wages, not including benefits. Aside from waste/recycling efforts, this same labor pool conducts seasonal road maintenance, street sweeping, mowing, and levee maintenance.

5.0 FINDINGS AND RECOMMENDATIONS

Sayre Borough has improved its recycling and composting programs over the last several years. Residential recycling rates are trending upward but there is potential for additional recovery, even after accounting for a portion of recyclable commodities that are redeemed for deposit in New York State without recovery by the Borough. Based on this evaluation, Gannett Fleming believes the Borough can increase the number of units serviced by adding sixty multi-family units with little impact to the total recycling route and labor utilization. Adding 60, 3-4 units structures, will account for approximately 20 new stops and add 15-20 minutes of route time based on 45-60 seconds per stop. Current recycling methods and materials will remain the same.

The effective recovery of recyclables through the addition of commercial recycling establishments, industries and one large apartment complex appears beyond current staff and equipment capabilities. However, commercial recycling should be re-assessed after the Borough successfully manages the service routes including new multi-family units. Using a phased approach, additional commercial recycling can be achieved through enforcing the existing recycling requirements included in Borough Ordinance 865 coupled with increased educational efforts.

5.1 Findings

Gannett Fleming summarizes the key findings of this evaluation as follows:

- While demonstrating an increasing recycling rate trend, the Borough's per-capita recyclables recovery rate is low when compared with other mandated municipalities. At 0.14 pounds per day, Borough recyclables recovery is far lower than the National per-capita recovery rate of 1.15 pounds per person per day. Participation rates (number of residential set-outs) were observed to be 18%. Other regional recycling programs are demonstrating 75-90% rate of participation. Due to low recovery rates and participation, Gannett Fleming predicts that there is a potential to recover an additional 355 tons of residential recyclables per year.
- Returnable bottle/deposit programs impact plastic, aluminum and glass recovery. Recovery of returnable commodities do not follow Pennsylvania or National averages since a portion of these containers are delivered to New York for processing. Additional targeted efforts to increase residential collection may be more efficient if focused on materials not covered by the bottle bill, like paper.
- The collection of glass using a separate collection vehicle and additional labor resources is inefficient.

- Multi-family housing units may be added to the Borough’s recyclables collection system without changing the types of materials or their preparation.
- Under ordinance Sections 108 and 109, Multi-family housing, is defined as “4 or more dwelling units” which has the following result for the smaller multi-family units that the Borough is targeting for collection:
 - 3-unit dwellings are not defined as residential or commercial.
 - 4-unit dwellings fall into the commercial sector and are to be collected by private haulers.
- Commercial establishments generate large quantities of office/mixed paper. Sayre Borough is not equipped to handle a large quantity of mixed paper with existing collection equipment and is not staffed for intensive commercial sector educational outreach.
- At this time, the Borough’s ability to manage the anticipated quantities of corrugated cardboard from commercial establishments with current staffing and equipment is limited and could negatively impact overall staff and equipment utilization using the current techniques. Due to large volumes, cardboard collection from some business would require separate pickups of dumpsters dedicated for cardboard. The Borough is not currently in a position to implement this service with existing staff or equipment.
- Sayre Borough recently enacted Ordinance 865 which mandates commercial recycling and requires private haulers to offer recycling services when operating in the Borough. The Ordinance provisions will put the Borough in compliance with Act 101 and Act 140 requirements; however, further efforts at implementation and enforcement of the Ordinance are needed.

5.2 Recommendations

- Increase residential recyclables recovery through promotion, financial incentives, education and enforcement. Gannett Fleming recommends additional recycling education including curbside feedback, where Borough crews leave behind a door hanger or sticker identifying problems and encouraging participation, and if necessary providing warning or citations for repeat offenders.
- Since adding multi-family housing collection to the Borough efforts will not require a change in collection techniques and Borough officials have indicated that routes would not have to be changed and staffing would be minimally affected, Gannett Fleming recommends adding the desired 60 multi-family units having three or four units per dwelling. The Borough should update the ordinance to accurately define residential and commercial multi-family housing units so that the Borough may service all residential multi-family units. The Borough should continue to utilize the same collection methods for these units as

used with the residential program. The Borough should notify the landlords of the proposed units, provide educational resources for distribution to tenants, and clarify collection locations. Landlords should be given 60-90 days to comply with requirements with assistance from the Borough for educational, bins and technical assistance.

- Reevaluate glass collection methods and costs. Consider elimination of this separate collection route for glass only via glass collection tied in with one or more of the other collection vehicles/routes, or possibly through eliminating this material entirely if another feasible alternative is not identified.
- Gannett Fleming does not recommend adding commercial recyclable collection to the Borough's existing efforts at this time. Adding commercial units would include a large quantity of corrugated cardboard and mixed paper which may not be feasible with existing equipment and collection methods. As demonstrated in this Report, there are approximately 355 tons of residential materials potentially uncaptured. The Borough Ordinance mandates commercial recycling and outlines participation requirements of the establishments and private haulers servicing them. Notify commercial establishments of ordinance requirements and give them 60-90 days to comply. Notifications and public education efforts should also include private haulers.
- In order to efficiently implement the Borough Ordinance and comply with PADEP requirements, the Borough should develop and distribute a commercial recycling report form to be completed once per year and submitted to the Borough by February 15th of each year. This report should also include, according to Borough Ordinance requirements, a plan for recycling to include a point of contact. Gannett Fleming has included in Appendix A, the PADEP developed commercial recycling report, which may be of assistance in this process. There should be a separate form used to indicate reporting requirements (Section 3.0) and further outlined in the Borough Ordinance.
- To be in compliance with PADEP requirements, the Borough should develop and distribute written recycling directions to commercial establishments at least once per year and include commercial recycling information on the Sayre Borough website. This meets the minimum twice per year requirement. This educational piece could be sent in conjunction with a report request from the Borough. Distribute this educational piece along with requests for recycling data.
- In order to implement provisions of Ordinance 865, the Borough should develop penalties for non-compliance and use Code Enforcement Officers and or other appointees to enforce the program. Gannett Fleming recommends the Borough streamline the enforcement process by developing citation or administrative ticket process. The enforcement officer or other approved designee can issue an "administrative ticket" for certain solid waste and recycling violations. The

tickets can be set at \$10 or \$20 and be for a list of common identified violations. When the Borough observes the violation, the ticket can be issued. The person or commercial establishment receiving the ticket can agree to pay, admitting guilt, or plead not guilty and then resolve the issue with the local District Justice.

- As the Borough increases residential recycling tonnages captured and adds new multi-family housing units, the Borough should re-examine the existing equipment efficiency, capability, and condition. Semi-automated recyclables collection equipment should be evaluated and considered for procurement to improve collection efficiency and labor utilization. While the primary market requires source separated materials, newer collection vehicle technologies can accommodate curb sort while dramatically increasing volume through vehicle capacity and compaction. Increased truck capacity will maximize routing efficiency, thus reducing the total labor required for collection and transport to the NTSWA market 22 miles away. Act 101, Section 902 Grant monies may be available for this type of equipment.

Gannett Fleming recommends that Sayre Borough use a phased approach for increasing residential recycling and/or adding commercial recycling to existing efforts.

Initial Phase(s)

- Implement and enforce the existing Ordinance, targeting commercial and private hauler reporting.
- Add a commercial recycling educational component to maintain regulatory compliance.
- Increase residential participation and recycling recovery.
- Add the sixty multi-family housing (3-4 unit structures) to the collection routes.
- Update the ordinance to assure clarify the Borough, not solely private haulers, is permitted to collect from 4-unit multi-family structures.

Future Phase(s)

- Continued research and evaluation of collection methods and vehicle options to increase efficiency and reduce staff utilization. Consider an alternate method from using a separate vehicle and labor resources for the collection of glass to improve overall efficiency.
- If municipally operated commercial recycling continues to be a priority, evaluate the full costs and potential revenues. Transition to commercial sector collection will include procurement of addition collection vehicle(s) and require additional labor resources suited to address large quantities of mixed paper and corrugated cardboard. The Borough should evaluate collecting both municipal waste and recyclables from commercial accounts in order to assure receipt of revenues from the waste portion of the service to assure a sustainable program.

APPENDIX A

Sample Commercial and Transporter Recycling Report Forms



ANNUAL RECYCLING REPORT
For Commercial, Municipal, Institutional Facilities

Due: Feb. 1 of the following year
To: Municipality where
recyclables were generated

County Name:		Municipality Name:	
Name of Establishment:			
Address:		City:	Zip Code:
Email:		Telephone:	Fax:

How does your establishment handle recyclable materials? Source-separated Commingled Single Stream

How is your recycling collected?

- Collected by recycling facility or broker (name): _____
- Collected by private hauler (name): _____
- Collected by confidential document destruction company (name): _____
- Establishment delivers materials to drop-off facility (location): _____

If any of the above methods are used to collect your recyclable materials, do not include weights in the list below. Actual weights will be retrieved from your service provider or drop-off facility.

- Establishment delivers materials to recycling facility (name): _____
- Other (please specify): _____

- CHECK the box in front of each post-consumer* material that your establishment recycled.
- If your establishment marketed your own recyclables enter the weight in tons. **Adequate documentation must be attached to this report to verify weights. This may include receipts, bills of lading or weight tickets.** Subtract processing residue.**

Note: If you use a commingled or single stream collection system, check the boxes beside each material in the mix.

<u>Material Type</u>	<u>Weight</u>	<u>Material Type</u>	<u>Weight</u>
<input type="checkbox"/> Single Stream: (All recyclables, including fiber, collected together)	[SS1] _____	Metal Cans and Bottles:	
<input type="checkbox"/> Commingled: (2 or more recyclables collected together, fiber separate)	[XXX] _____	<input type="checkbox"/> Aluminum Cans	[AA1] _____
Paper:		<input type="checkbox"/> Steel & Bimetallic (Tin) Cans	[F02] _____
<input type="checkbox"/> Paper: Cardboard	[C01] _____	<input type="checkbox"/> Mixed Cans	[MX2] _____
<input type="checkbox"/> Paper: Magazines & Catalogs	[PA1] _____	Plastics:	
<input type="checkbox"/> Paper: Mixed/Other (junk mail, paper bags, paperboard, etc.)	[PA3] _____	<input type="checkbox"/> Plastic: PET	[PL1] _____
<input type="checkbox"/> Paper: Newsprint	[PA2] _____	<input type="checkbox"/> Plastic: HDPE	[PL2] _____
<input type="checkbox"/> Paper: Office Paper (all grades)	[PA4] _____	<input type="checkbox"/> Plastic: PVC	[PL3] _____
<input type="checkbox"/> Paper: Phone Books	[PA6] _____	<input type="checkbox"/> Plastic: LDPE	[PL4] _____
Glass Bottles and Jars:		<input type="checkbox"/> Plastic: PP	[PL5] _____
<input type="checkbox"/> Glass: Brown	[GL4] _____	<input type="checkbox"/> Plastic: PS	[PL6] _____
<input type="checkbox"/> Glass: Clear	[GL1] _____	<input type="checkbox"/> Plastic: Film	[PL8] _____
<input type="checkbox"/> Glass: Green	[GL3] _____	<input type="checkbox"/> Plastic: Mixed	[PL7] _____
<input type="checkbox"/> Glass: Mixed	[GL2] _____	<input type="checkbox"/> Plastic: Other	[PL9] _____
<input type="checkbox"/> Glass: Other	[GL6] _____	Organics:	
		<input type="checkbox"/> Food Waste	[FW1] _____
		<input type="checkbox"/> Wood Waste	[WW1] _____
		<input type="checkbox"/> Yard and Leaf Waste	[Y01] _____

***Report only post-consumer materials on this form. Post-consumer material:** Material that has been used as a consumer item and has been diverted from solid waste for recycling purposes. Material that does not reach the consumer, such as industrial scraps, trimmings, cuttings, print overruns, over-issues of newspapers and publications and obsolete inventories are considered **pre-consumer materials** and **should NOT** be included on this report.

****Processing residue:** Material that is collected and weighed with recyclables, but is disposed rather than recycled.



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

For the period:
January 1, 20__ to December 31, 20__

ANNUAL RECYCLING REPORT
For Transporters

Due: Feb. 1 of the following year
To: Municipality where
recyclables were generated

Collector Name:		
Address:	City:	Zip Code:
Email:	Telephone:	Fax:

Please **complete one form for each municipality** where you collected recyclables.

Municipality: _____ County: _____

- CHECK the box in front of each post-consumer* material that you collected for recycling from the municipality above.
- ENTER the weight (in tons) of material recycled in the correct column. Subtract processing residue.**

Material Type		Residential Tons***	Commercial/ Institutional Tons	Drop-off Tons	Name of Processing Facility or Market
Single Stream:	[SS1]				
Commingled:	[XXX]				
Note: If you use a commingled or single stream collection system, check the boxes below for each material in the mix.					
Paper:					
<input type="checkbox"/> Paper: Cardboard	[C01]				
<input type="checkbox"/> Paper: Magazines & Catalogs	[PA1]				
<input type="checkbox"/> Paper: Mixed/other (junk mail, paper bags, paperboard, etc.)	[PA3]				
<input type="checkbox"/> Paper: Newspaper	[PA2]				
<input type="checkbox"/> Paper: Office Paper (all grades)	[PA4]				
<input type="checkbox"/> Paper: Phone Books	[PA6]				
Glass Bottles and Jars:					
<input type="checkbox"/> Glass: Brown	[GL4]				
<input type="checkbox"/> Glass: Clear	[GL1]				
<input type="checkbox"/> Glass: Green	[GL3]				
<input type="checkbox"/> Glass: Mixed	[GL2]				
<input type="checkbox"/> Glass: Other	[GL6]				
Metal Cans and Bottles:					
<input type="checkbox"/> Aluminum Cans	[AA1]				
<input type="checkbox"/> Steel & Bimetallic (Tin) Cans	[F02]				
<input type="checkbox"/> Mixed Cans	[MX2]				
Plastics:					
<input type="checkbox"/> Plastic: PET	[PL1]				
<input type="checkbox"/> Plastic: HDPE	[PL2]				
<input type="checkbox"/> Plastic: PVC	[PL3]				
<input type="checkbox"/> Plastic: LDPE	[PL4]				
<input type="checkbox"/> Plastic: PP	[PL5]				
<input type="checkbox"/> Plastic: PS	[PL6]				
<input type="checkbox"/> Plastic: Film	[PL8]				
<input type="checkbox"/> Plastic: Mixed	[PL7]				
<input type="checkbox"/> Plastic: Other	[PL9]				
Organics:					
<input type="checkbox"/> Food Waste	[F01]				
<input type="checkbox"/> Wood Waste	[WW1]				
<input type="checkbox"/> Yard and Leaf Waste	[Y01]				

***Report only post-consumer materials on this form. Post-consumer material:** Material that has been used as a consumer item and has been diverted from solid waste for recycling purposes. Material that does not reach the consumer, such as industrial scraps, trimmings, cuttings, print overruns, over-issues of newspapers and publications and obsolete inventories are considered **pre-consumer materials** and **should NOT** be included on this report.

****Processing residue:** Material that is collected and weighed with recyclables, but is disposed rather than recycled.

*****Residential tons:** Residential tons includes recyclables from condominiums, apartment complexes and townhouses.

