

February 27, 2007



Ms. Jill Gibson
Secretary-Treasurer
Wayne Township
17395 Sciota Road
Cory, PA 16407

Dear Jill,

This letter summarizes the findings of our evaluation of drop-off recycling program options in the area of Wayne, Concord, and Union Townships and Elgin Borough, Pennsylvania (Partner Municipalities). The evaluation was performed as a Recycling Technical Assistance Program project, which is a cooperative program of the Pennsylvania Department of Environmental Protection (DEP) and the Solid Waste Association of North America (SWANA).

Executive Summary

Wayne, Concord, and Union Townships and Elgin Borough are adjoining municipalities located in rural southeastern Erie County, Pennsylvania. Although the municipalities are not required to operate a municipal recycling program under Act 101, they want to offer their residents the opportunity to recycle through a low-cost recycling program as their residents do not currently have access to either curbside or drop-off collection of residential recyclables.

R. W. Beck evaluated the following three permanent drop-off recycling program options:

- **Haul All Depot System** – This technology would entail purchasing a special bank of fixed drop-off containers that would require collection using custom collection vehicles.¹
- **Front Load Dumpsters** – This technology would entail setting front load dumpsters at one or more sites and collecting recyclables in two streams – commingled containers and paper.
- **Compartmentalized Roll-Off** – This technology would entail placing a two-compartment roll-off container at one or more locations to collect recyclables in two streams.

R. W. Beck recommends that the Partner Municipalities implement the front load dumpsters option at two drop-off site locations. The cost of the program is projected to range from \$10,400 - \$11,900 per year (approximately \$2.00-2.40 per resident per year) assuming grant funds are available from the Commonwealth to help fund program startup. R. W. Beck also recommends that the Partner Municipalities work with Erie County's recycling coordinator to investigate the option of implementing a broader network of front load dumpster drop-off

¹ Wayne, Concord, and Union Townships and Elgin Borough asked R. W. Beck to evaluate Haul All's permanent depot system. Use of that system would require partnering with the adjoining Crawford County Solid Waste Authority to service the site(s) since Crawford County utilizes that system and has the custom vehicles required to service the sites. The permanent depot system should not be confused with a towable trailer system that is also offered by Haul All, which was not included in this evaluation.

locations across the southern part of the county to improve program economics, and see if cooperative funding is available through the County. Further details of the recycling program options and our analysis are provided in the sections following this summary.

Background

Wayne, Concord, and Union Townships and Elgin Borough have a combined population of approximately 5,000. The municipalities are located in the rural southeastern corner of Erie County. Solid waste collection in Wayne, Concord, and Union Townships is subscription-based, meaning that individual households arrange for collection of solid waste from their residences by a private hauler of their own choosing. The private haulers do not offer recycling service to residents of the townships. Alternatively, Elgin Borough contracts for solid waste collection for its citizens and therefore has the ability to require its hauler to provide curbside collection of recyclables. Although Elgin Borough required a past contractor to provide curbside recyclables collection, performance problems by the contractor and the high cost of the service resulted in a decision by Elgin Borough to not include recycling services as part of its current contract. The City of Corry, which is at the eastern edge of Wayne Township, is an Act 101-mandated community. Its contractor provides curbside collection of recyclables, which are thought to be transported to Jamestown, New York for processing. Union City Borough also has curbside collection of recyclables in its jurisdiction. Citizen desire for access to recycling in the Partner Municipalities led to this project.

Erie County's Solid Waste Management Plan (SWMP) identifies the southern belt of townships in the county as lacking curbside and drop-off recycling collection. The SWMP offers no specific plan to serve these townships. It does, however, mention that the county's recycling coordinator will open a dialog with the townships to investigate options. As of the date of this report, this dialog was only beginning and there was no guarantee that a County-coordinated program will be implemented soon. Wayne, Concord, and Union Townships and Elgin Borough are receptive to working with the County and feel that County resources could help ensure the sustainability of a recycling program in the local area, even if the County does not implement a coordinated program across the southern belt of townships. Because municipal funds are extremely limited, the Partner Municipalities are interested in a drop-off recycling program that provides access to recycling for standard residential recyclables at minimal cost. The lack of municipal staff time and collection equipment mean that the services of a contractor or partner jurisdiction would be required to operate the proposed program.

Comparison of Recycling Program Options

A permanent drop-off location(s) was identified as the type of recycling program that would best meet the objectives of minimal municipal staff time while providing access to recycling. Limited availability drop-offs (with specified operating hours) were not desired due to: (1) the lack of local contractors who offer a staffed weekend drop-off service; or (2) the lack of Partner Municipalities' facilities that could be locked at night yet would be at a desirable location. Three technologies for servicing one or more permanent drop-off sites were evaluated:

Haul All Depot System – This technology would entail purchasing a special bank of fixed drop-off containers that would require collection using custom collection vehicles.²

Dumpster System – This technology would entail setting front load dumpsters at one or more sites and collecting recyclables in two streams – commingled containers and paper. Standard refuse collection equipment would allow for the site(s) to be serviced by several potential service providers.

Compartmentalized Roll-Off – This technology would entail placing a two-compartment roll-off container at one or more locations to collect recyclables in two streams. Standard refuse collection equipment would allow for the site(s) to be serviced by several potential service providers.

Data from adjoining Crawford County, which operates a countywide drop-off system, was used to estimate that from 3,400 to 5,000 pounds per week of recyclables could be recovered from the 5,000 residents of the Partner Municipalities.³ In volumetric terms, this is estimated to be up to 10 cubic yards of loose paper and 22 cubic yards of loose containers per week. A further discussion of estimated capital and operating costs, processing options, and program assumptions for each of the three alternative technologies is listed below.

Haul All Depot System

The Haul All depot system was the drop-off technology that was used in neighboring Crawford County at the time this project was initiated. This technology is well designed, resulting in attractive sites that facilitate participation, minimize illegal dumping of materials not accepted in the recycling program, and minimize contaminant levels in the recovered material streams. Drawbacks of the system are high up-front capital costs, somewhat high collection cost per ton recovered, and the requirement that custom collection trucks be utilized for collection. Because custom collection vehicles are required to service the Haul All depot sites, it would be cost-prohibitive for the Partner Municipalities to invest in custom collection vehicles that would be used to service only one or possibly two sites. Implementation of this system therefore would require partnering with the Crawford County Solid Waste Authority (SWA) to service the one or two prospective sites as private haulers do not have the custom collection vehicles required to service Haul All depot sites. The SWA was amenable to working with the Partner Municipalities as it performed a similar service for Mercer County. The Crawford County SWA would process the collected recyclables at its materials recovery facility and market the materials. Figure 1 shows the appearance of the Haul All depot system.

² Wayne, Concord, and Union Townships and Elgin Borough asked R. W. Beck to evaluate Haul All's permanent depot system. Use of that system would require partnering with the adjoining Crawford County Solid Waste Authority to service the site(s) since Crawford County utilizes that system and has the custom vehicles required to service the sites. The permanent depot system should not be confused with a towable trailer system that is also offered by Haul All, which was not included in this evaluation.

³ The lower projected recovery level assumes a program that accepts the following basic materials: old newspapers, aluminum cans, steel cans, glass containers, and plastic bottles. If magazines and old corrugated containers ("cardboard boxes") are included, recovery amounts could reach 5,000 pounds per week.

Figure 1
Haul All Depot System



As this Recycling Technical Assistance Program project concluded, the Crawford County SWA was facing financial sustainability problems due to a loss of funding to pay the cost of its drop-off program. The problems were serious and in February 2007 the Crawford County SWA announced that it would shutter its Haul All depot sites. The results of R. W. Beck's analysis of the Haul All depot option is still included in this report for reference sake, in the event that the Crawford County SWA is able to resume service using its Haul All depot equipment.

The Crawford County SWA's cost to collect, process, and market materials from one or two sites serving the Partner Municipalities would vary from \$10,000 to \$17,200 per year depending on how much of the SWA's general administrative and capital depreciation costs would be shared by the Partner Municipalities. Collection frequency would also need to be coordinated with the SWA's route schedule, which could impact the cost estimate.

The Partner Municipalities capital cost to purchase a Haul All depot system site of six bins is approximately \$45,000. The cost for two locations would be approximately \$90,000. Two sites would be on par with the population served, recovery level, average travel distance for population served, and service frequency of the Crawford County sites.

Front Load Dumpsters

Front loading dumpsters are standardized equipment that are most often used for commercial solid waste collection. Because the dumpsters are in common use, most refuse haulers have the equipment required to service a drop-off site that uses front load dumpsters. R. W. Beck recommends that dumpsters used for recycling be altered from the typical solid waste design to

minimize contamination of the recyclables. Minimizing the size of the openings, for example, helps ensure that only recyclables, not waste, are deposited into the containers. Figure 2 provides an example of front load dumpsters that have been designed for recyclables collection.

Figure 2
Recycling Dumpsters



The capital cost to purchase front load dumpsters varies by manufacturer. The Partner Municipalities can expect to pay from \$1,500 to \$6,700 per dumpster, depending on the size, complexity of the design, and quality of construction. Seven six-cubic-yard dumpsters would be required at each of two sites (14 total dumpsters) and collection would occur on an every other week basis.⁴ Two trips will be required to collect from the dumpsters (one trip to collect paper and a second trip to collect containers) since front load collection vehicles are constructed to collect one material at a time.⁵ The capacity of the front load truck that would perform collection would be significantly greater than the volume to be collected and the truck would likely only be approximately one third full. Therefore, using less dumpsters and collecting more frequently is not recommended because the operating cost for collection would significantly increase.

R. W. Beck does not recommend operating only one drop-off site with front load dumpsters because doing so would either require: (1) consolidating all 14 dumpsters at one site so that the same volume is collected every other week, which would create an unsightly location due to the number of dumpsters; or (2) reducing the number of dumpsters and significantly increasing collection cost, which would be cost prohibitive. The front load dumpsters option capital cost would therefore vary from \$21,000 to \$94,000 depending on the dumpster manufacturer, and would be based on operating two sites.

⁴ Seven six-cubic yard dumpsters per site will provide approximately 15 percent surge capacity in the dumpsters to accommodate periods of heavier utilization. This surge capacity is needed when collection is provided on a fixed schedule.

⁵ An alternating week schedule would likely be utilized by the hauler to simplify truck utilization planning and routing, where containers are collected one week and paper the following week.

The Partner Municipalities would need to contract with a private solid waste hauler or World Resources, a nearby material recovery facility that also offers collection services, to collect recyclables from the dumpsters. The cost to service two front load dumpster sites is estimated to be \$10,000 per year. This price assumes that a front load truck must drive approximately two and one half hours round trip to collect recyclables and deliver them to a processing location. Processing locations for two-stream recyclables are limited to World Resources in Erie, and the Crawford County Materials Recovery Facility (MRF) in Meadville, which had not closed at the time this report was completed. Because revenues from the sale of processed materials typically exceed the cost of processing, the Partner Municipalities should not have to pay a processing tip fee for materials delivered to either MRF.

Compartmentalized Roll-Off Container

Roll-off containers are standardized equipment that are most often used for commercial solid waste collection. Because roll-off containers are in common use, most refuse haulers have the equipment required to service a drop-off site that uses roll-off containers. R. W. Beck recommends that roll-off containers used for recycling be altered from the typical solid waste design to minimize contamination of the recyclables. These alterations include closing in the top, creating separate compartments for paper and containers, adding clear signage, and adding properly sized and shaped openings through which recyclables are deposited. As with dumpsters, the openings are critical and their purpose is threefold: (1) to keep bags of trash from being dumped into the container; (2) to ensure participants remove recyclables from bags that they may have used to transport the recyclables; and (3) to ensure that paper and containers are separated from each other and deposited into the proper compartment. Figure 3 shows an example of a recycling roll-off container.

Figure 3
Recycling Roll-Off Container



The capital cost to purchase roll-off containers varies by manufacturer and by size of the container. The Partner Municipalities can expect to pay from \$10,500 to \$14,000 per roll-off for a 30 cubic yard size, depending on the complexity of the design and quality of construction. One roll-off would be located at each drop-off site. Roll-off container capital costs would therefore range from \$10,500 to \$28,000, depending on the manufacturer selected, and whether one or two drop-off sites would be operated.

The cost to service the drop-offs is estimated to be \$16,200 per year and is based on the need to service the roll-offs every thirteen days, assuming two sites are operated, or every six days if only one site is operated.⁶ Processing locations for two-stream recyclables are limited to World Resources in Erie, and the Crawford County MRF in Meadville. The drop-off site would not be available to the public during the couple of hours when the roll-off is removed to be emptied.⁷

Summary of Program Costs and Funding Options

Costs for the program options are composed of initial start-up costs for capital expenditures and ongoing operations costs. Section 902 of Act 101 allows municipalities to receive up to 90 percent funding for eligible start-up costs for the following:

- Development of a drop-off site;
- Planning and implementation to establish a recyclables collection program;
- Purchase of recycling education materials, including brochures, flyers, etc.; and
- Containers and equipment required to operate a collection program or drop-off site.

Table 1 summarizes the estimated overall capital and operating costs for the three drop-off program options, without grant fund offsets. The total costs are shown on an annual basis, on a per-person basis (based on all residents of the Partner Municipalities), and on a per-ton basis.

**Table 1
 Comparison of Drop-Off Options Costs – Without Grant Fund Offsets**

Options	Annual Capital Cost – No Grant¹	Annual Operating Cost²	Total Annual Cost	Annual Cost per Person	Annual Cost per Ton³
Haul All Depot System	\$18,000	\$10,000 - \$17,200	\$28,000 - \$35,200	\$5.60- \$7.04	\$215 - \$271
Front Load Dumpsters	\$ 4,200 - \$18,800	\$10,000	\$14,200 - \$28,800	\$2.84- \$5.76	\$109 - \$222
Roll-Off Containers	\$ 4,200 - \$ 5,600	\$16,200	\$20,400 - \$31,800	\$4.08 - \$6.36	\$157 - \$245

¹ Capital depreciated over five years. Cost assumes two drop-off locations. If only one drop-off site is operated, annual capital cost for the Haul All depot system and roll-off containers would be half that shown in the table and it is assumed that service frequency can be increased. Operating only one drop-off site for the front load dumpsters option is not recommended because operating costs would increase prohibitively, or sites would become cluttered with dumpsters.

² Assumes the processor retains all material revenues and receives no tip/processing fees.

³ Based on estimate of 130 tons per year collected.

⁶ This cost estimate assumes a hauler charges a pull fee of \$295 to lift, deliver to the processing facility, and return each roll-off every time it needs to be emptied, which is estimated to be a two and one half hour round-trip. R. W. Beck does not recommend sizes over 30 cubic yards because they are normally constructed with higher side walls, which would make loading difficult for program participants.

⁷ The contract for collection services should specify that the contractor load recyclables that were left at the site while the roll-off container was removed into the emptied roll-off container.

As can be seen from Table 1, capital costs on an annualized basis compose a significant portion of the overall program cost. Specific notes about the capital costs for each option are described below.

- For each of the three options considered, grant applications may be submitted for purchases of all recycling equipment, with grant funding assumed to reimburse 90 percent of the total purchase price.
- Capital costs are shown on an annualized basis.⁸
- Capital costs are based on operating two drop-off site locations. Capital costs for the Haul All depot system and roll-off container system can be reduced in half by operating only one site and servicing the site more frequently – operating costs would remain the same whether one or two sites are operated because the service frequency would be doubled if downsizing from two sites to one. Operating only one drop-off site for the front load dumpsters option is not recommended because operating costs would increase prohibitively, or sites would become cluttered with dumpsters, as was discussed previously.

Table 2 summarizes the overall capital and operating cost differences for the three drop-off program options assuming 90 percent of capital costs are reimbursed by grant funding. The total costs are shown on an annual basis, on a per-person basis (based on Partner Municipality population), and on a per-ton basis.

**Table 2
 Comparison of Drop-Off Options Costs – With Grant Funds**

Options	Annual Capital Cost After Grant ¹	Annual Operating Cost ²	Total Annual Cost	Annual Cost per Person	Annual Cost per Ton ³
Haul All Depot System	\$1,800	\$10,000 - \$17,200	\$11,800 - \$19,000	\$2.36 - \$3.80	\$91 - \$146
Front Load Dumpsters	\$ 420 - \$1,880	\$10,000	\$10,420 - \$11,880	\$2.08 - \$2.38	\$80 - \$91
Roll-Off Containers	\$ 420 - \$ 560	\$16,200	\$16,620 - \$16,760	\$3.32 - \$3.35	\$128 - \$129

¹ Capital depreciated over five years. Cost assumes two drop-off locations. If only one drop-off site is operated, annual capital cost for the Haul All depot system and roll-off containers would be half that shown in the table and it is assumed that service frequency can be increased. Operating only one drop-off site for the front load dumpsters option is not recommended because operating costs would increase prohibitively, or sites would become cluttered with dumpsters.

² Assumes the processor retains all material revenues and receives no tip/processing fees.

³ Based on estimate of 130 tons per year collected.

As Table 2 shows, program costs are significantly reduced by the capital equipment grant funding. The benefit of attempting to reduce capital and annual costs by operating only one

⁸ Capital costs reflect straight-line depreciation over five years of an outright purchase – financing of capital purchases would serve to increase the estimated cost.

drop-off site compared to two is greatly diminished compared to Table 1, and only the Haul All depot system and roll-off containers would show minor cost savings. Furthermore, operating only one drop-off site would be less convenient to many program participants, thus less tonnage could be expected to be recovered compared to a program with two sites.

The costs shown in Tables 1 and 2 are minimum fixed costs for the programs. In addition to these costs, there may be administrative costs associated with contracting with a service provider, processing invoices/billing, record-keeping, and grant application preparation. Most importantly, the initial and ongoing programs will require promotion so that people are aware of the new program. These costs can vary from municipality to municipality, so R. W. Beck has not provided an estimate of these administrative and program promotional costs. Additional information about education program costs can be found in the Public Education section of this report.

In addition to startup grant funds, Recycling Performance Grants can also be obtained from the Commonwealth. Section 904 of Act 101 rewards municipalities for diverting recyclables from the municipal solid waste stream. The amount of the grants is formula based, with \$5 per ton for the weight of recyclables diverted, plus additional dollars per ton depending on the recycling rate for each municipality. As an informal estimate, the performance grants would likely range between \$5-\$10 per ton, or from approximately \$650 to \$1,300 per year. R. W. Beck has assumed that these funds will be used for program promotion, or will be used to compensate the lead municipality for additional administrative cost associated with the recycling program as described above. Thus, these potential grant revenues are excluded from the tables.

Recommended Option

Based on the shuttering of Crawford County's recycling program and the cost analysis summarized in this report, R. W. Beck recommends that the Partner Municipalities implement the front load dumpsters option at two sites. Because the front load vehicle that would service the sites will only have approximately one third of its capacity utilized, operating costs of the program could be lowered by as much as one third if other municipalities were to establish similar drop-off locations so that a full route could be operated. R. W. Beck recommends that the Partner Municipalities work with Erie County's recycling coordinator to investigate the option of a broader network of drop-off locations across the southern part of the county.

Funding of the drop-off program can also be explored through Erie County and the political process. Remaining funding requirements should be discussed among the Partner Municipalities. The most equitable approach would be to have each municipality contribute in proportion to its number of residents, or households, out of their existing general funds.

Drop-Off Site Location and Design

Drop-Off Site Location

Site location strongly impacts drop-off program participation. Sites that are located on major thoroughfares with the greatest vehicle counts, such as U.S. Highway 6, obtain higher participation than do less heavily trafficked roads. Sites that are located at destinations that many people frequent also result in higher levels of participation. Crawford County found that its drop-off sites at Wal-Mart and Home Depot achieved some of the highest levels of recovery in their program. Sites closest to population centers also tend to obtain better participation than do sites that may be centrally located but are not near to potential program participants. A further advantage of locating a site at a busy, highly trafficked location is that illegal dumping of waste or bulky discards is less likely to occur, particularly if the site is well lit.

R. W. Beck visited potential site locations in the Partner Municipalities that could serve as potential sites, including the Wal-Mart in Corry, an unused rest area on U.S. Highway 6 west of Corry, the Elgin Beaverdam Hose Company location at the junction of U.S. Highway 6 and Route 89, and the length of U.S. Highway 6 between Corry and Union City Borough. R. W. Beck's visit of these sites was not a comprehensive evaluation of all potential sites and ultimately the Partner Municipalities must decide on the best location and negotiate with property owners for site use. Based on our observations and the siting considerations discussed above, R. W. Beck recommends that one drop-off be located at the Wal-Mart in Corry and a second drop-off be located at a highly visible location in Union City Borough.

Drop-Off Site Design

Site design begins with careful selection of drop-off containers that have been altered from traditional waste collection containers. These alterations include locking lids, clear signage that to the greatest extent possible consists of graphics rather than text, and properly sized and shaped holes through which recyclables are deposited. The holes are critical and their purpose is threefold: (1) to keep bags of trash from being dumped into the dumpsters; (2) to ensure participants remove recyclables from bags that they may have used to transport the recyclables; and (3) to ensure that paper and containers are separated from each other and deposited into the proper receptacle. Stationing a small trash can at each site for plastic bags and products not accepted in the program is also a best practice; however, such a trash would require frequent emptying by municipal staff, unless an arrangement can be made with a co-located business. A waste dumpster should not be provided at the sites as it tends to attract illegal dumping of refuse and bulky discards. Some programs have found that painting the containers a bright color, such as blue, can help draw attention to the site.

The site should be well lit to discourage illegal dumping and provide for the safety of program participants. Drop-off containers should not be located under trees or low-hanging power lines, which could interfere with emptying the containers. It is preferable to place the containers on a paved surface so that participant's vehicles do not get stuck in soft or muddy soils and shoes remain clean.

Roadside signs should be installed to direct people to the location of the new drop-off site and continually advertise the importance of recycling to the public.

Periodic upkeep of the sites is important because keeping the sites clean helps to promote the idea that recyclables are valuable resources, not trash, and that proper separation of materials and proper disposal of trash and non-accepted items are important practices. Similarly, the drop-off containers themselves should be periodically cleaned and painted in order to keep the sites attractive. If sites are not kept clean and attractive, they can become a nuisance and property owners may request that the drop-off containers be removed from the location.

Public Education

A key difference between award-winning and lackluster recycling programs is that award-winning programs typically devote a meaningful amount of effort and resources to public education and awareness campaigns for their recycling programs. This section discusses public education considerations. Ultimately, well-educated citizens will recycle more material with minimized contamination.

As was mentioned previously, Section 902 Program Development and Implementation Grants could potentially be obtained to offset up to 90 percent of public education and outreach costs for new recycling programs, so the Partner Municipalities should consider a substantive initial education and awareness campaign to inform residents of the new program and build enthusiastic participation. To accomplish this, R. W. Beck recommends mail inserts and public outreach at a minimum.

Mail inserts in periodic local mailings, such as a local newsletter, property tax bill or utility bills are more cost-effective than other types of mailings because they are included in mail of interest to the household and are less likely to be viewed as an “advertisement” mailing that is discarded without being looked at. The cost can be under \$200 and is ideal for initiating the program as well as providing ongoing program promotion. A limitation is that the insert must be printed on thin slips of paper to keep the weight of the entire envelope contents low, which may make it difficult to present all of the information needed for the new program (i.e., drop-off site locations, materials accepted, “why recycle” messaging, etc.). If a more substantive brochure is desired, a dedicated mailing would need to be investigated, at costs of \$400 - \$600 and up, depending on the cost of printing and reproduction (number of colors), envelopes, and addressing/sorting/postage.

Initial public outreach should be focused on bringing attention to the recycling program. This would include reaching out to the Corry Journal to have them write a short article about the new program. A ribbon cutting ceremony may provide an opportunity for a photograph of the new site to be taken that can be included in the newspaper. Temporary banners and other temporary signage can help bring awareness to the new site as well.

Conclusion

The Partner Municipalities would like to provide the opportunity for its citizens to recycle. Because individuals select their hauler in a system of open competition, the Partner Municipalities are not well situated to incorporate recycling program costs into a system of integrated solid waste management. All recycling program costs, with the exception of grant funds or potentially County cooperative funding of the program, will have to be paid out of the Partner Municipalities' general funds under their existing revenue structure -- this could prove to be a challenge.

Three permanent site drop-off program options were investigated as follows: Haul All depot system, front load dumpsters, and roll-off containers. Based on the instability of funding for Crawford County's recycling program and the cost analysis summarized in this report, R. W. Beck recommends that the Partner Municipalities implement the front load dumpsters option at two sites. R. W. Beck also recommends that the Partner Municipalities work with Erie County's recycling coordinator to investigate the option of a broader network of drop-off locations across the southern part of the county to reduce program costs.

R. W. Beck recommends that the Partner Municipalities provide for a robust education and awareness effort for the new program. Up to 90 percent of the program initiation costs are reimbursable under the Section 902 Program Development and Implementation grants. Periodic reminders should follow the initial education and awareness campaign for the duration of the program (between quarterly to annually), otherwise recycling participation has a tendency to decline.

We have appreciated the opportunity to work with Wayne, Concord, and Union Townships and Elgin Borough on this project. Please contact me at (407) 422-4911 should you have any questions.

Sincerely,

R. W. BECK, INC.



Timothy M. Buwalda
Project Manager