

LEHIGH COUNTY NORTHWESTERN
TIER RECYCLING
FINAL REPORT

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TABLE OF CONTENTS

1.0	Background	Page 1
2.0	Current Situation	Page 1
2.1	Description of Existing Programs	Page 1
3.0	Development of Project Parameters	Page 3
3.1	General Observations	Page 4
3.2	Municipal Program Assessments And Observations	Page 4
4.0	Options For Establishing Regional Drop-Off Recycling	Page 9
4.1	Comparison Of Drop-off Systems	Page 9
5.0	Program Development	Page 10
5.1	Presentation Of Proposed Program	Page 10
5.2	Outcome	Page 11
5.3	Results	Page 12

APPENDICES

Appendix A – Recommendations For Education Program.....	Page 13
Appendix B – Educational Materials.....	Page 16
Appendix C – VQuip Proposal For Drop-Off Sites.....	Page 17

1.0 Background

Lehigh County requested and received a Technical Assistance Grant to provide consulting assistance to six (6) municipalities in the northwestern region of the County. The assistance requested was to identify options for; development of a multi-municipal recycling program to service the region and to assist individual municipalities interested in expansion or development of recycling programs to individual municipal recycling programs. Four (4) of the six (6) Townships currently have some type of recycling programs.

The six municipalities include Heidelberg, Lowhill, Lynn, North Whitehall, Washington and Weisenberger Townships. These municipalities, located in its northwest corner, encompass approximately 20% of Lehigh County. The Townships are primarily very rural/agricultural. Populations range from a high of 14,700 in North Whitehall Township to a low of 1,870 in Lowhill Township.

2.0 Current Situation

Table 1 identifies current recycling efforts.

TABLE 1: CURRENT MUNICIPAL RECYCLING PROGRAMS:

Township	Program
North Whitehall	Curbside & Drop-off
Weisenberger (1)	Drop-off
Lowhill	None
Lynn	Drop-off
Washington (2)	Curbside & Drop-off
Heidelberg	None

(1) The drop-off facility is operated by Waste Management, Inc. at its transfer station located in the Township.

(2) A glass drop-off/processing center is operated by the Lions Club.

2.1 Description of Existing Programs

North Whitehall Township

North Whitehall Township recycling program is a mandatory residential curbside collection program. Collection services are provided by private haulers. Residents contract for collection of recyclables with the hauler of their choice. Commingled recyclables (aluminum and steel cans, glass containers, plastics (#1 and #2), newspaper

and corrugated) are collected on an every other week basis. Marketing of the recyclables collected is the responsibility of the private hauler

North Whitehall Township also operates a drop-off center for leaf and yard waste, tree waste and used tires (tires are accepted from April 1 to December 1).

Leaf and yard waste is transported to the County compost facility. Compost is made available to residents in spring and fall. Tires are delivered to a local cement kiln for use as fuel.

Washington Township

Washington Township recycling program is a mandatory curbside collection program. Collection services are provided by private haulers. Residents contract for collection of recyclables with the hauler of their choice. Commingled recyclables (aluminum and steel cans, glass containers, plastics (#1 and #2), newspaper and corrugated are collected on a weekly basis. Materials collected are marketed by the responsible private hauler.

Washington Township also has a volunteer run drop-off facility which accepts glass containers. The drop-off is operated by a local Lions Club who process and market the glass. The facility is manned and open on Friday and Saturday from 9:00 A.M. to 4:00 P.M.

A County leaf and yard waste satellite compost facility is also located in the Township. The compost site also serves surrounding communities including Heidelberg Township.

Lynn Township

Lynn Township operates a drop-off recycling facility for its residents only. The facility accepts newspapers, mixed paper, cardboard, telephone books and commingled recyclables (glass containers, aluminum, plastics (#1 and #2) and steel cans). Recyclables are placed by the residents in specifically designated 8 cubic yard containers. Five (5) containers are used for collection of the commingled paper and cardboard and seven (7) are used for commingled glass, aluminum and steel cans and plastics. The containers are (front load) dumpster type with dome lids. Recyclables are picked up at the site on an as needed basis by a regional recycling firm, Cougels' Recycling and marketed by Cougels.

Leaf and yard waste and tree trimmings (and Christmas trees) are also accepted at the facility. The recycling facility is co-located with the Townships' municipal waste transfer station. Residents are charged by the bag or pickup truck for waste disposal, there is no fee for recyclables (which provides an incentive to recycle).

The facility is manned and open on Friday and Saturday from 9:00 A.M. to 4:00 P.M. Residents are required to register at the site.

Local haulers offer curbside collection of commingled recyclables (glass container, aluminum and steel cans and plastics (#1 and #2) and newspapers on a private contract basis. The Township recycling brochures provides information on its drop-off program and private subscription for curbside collection.

Heidelberg Township

Heidelberg Township operated a drop-off recycling facility for its residents only. Roll-off containers were used to collect newspaper and commingled recyclables (glass containers, aluminum and steel cans and plastics (#1 and #2)). The Township drop-off facility was closed in August of 2002.

Containers for collection of material, pick-up and marketing services had been provided free to charge by a local hauler. The hauler determined that he could not continue to provide the containers and services free of charge do to economic considerations. The Township decided to close the site and is currently assessing its options.

Weisenberger Township

Weisenberger Township does not operate a recycling program, however, a drop-off facility is located in the Township at Waste Management, Inc. (WMI) Municipal Waste Transfer Station. The WMI recycling drop-off facility accepts commingled recyclables, (glass containers, aluminum and steel cans and plastics (#1 and #2)), newspaper and corrugated cardboard. The drop-off facility is free of charge. The facility is open Monday thru Friday between the hours of 5:00 A.M. and 2:00 P.M.

Residents can also contract for curbside collection of recyclables with local haulers.

Lowhill Township

Lowhill Township does not currently have a recycling program.

Township residents can contract for curbside collection with local haulers or use the Waste Management Drop-Off Recycling Facility located in Weisenberger Township.

3.0 Development of Project Parameters

Alternative Resources, Inc. arranged meetings with the municipalities, as a group, to gain information on their goals and objectives for existing recycling programs/development of new programs and to discuss potential options for establishment of a cooperative drop-off recycling program to serve the region. A drop-off program was considered the only practical regional approach.

Regional curbside collection was considered impractical from a logistic and cost standpoint given: the expansive area occupied by the Townships; extensive road miles and the relatively sparse population. Although the Townships constitute 20% of the

County, the combined population is just over 37,000 people, of which nearly 50% reside in North Whitehall Township (a mandated curbside community).

ARI also met with individual municipalities to discuss their particular needs for program expansions, enhancement or new program development. These meetings also provided ARI an opportunity to conduct site visits/ inspections and observe and assess the operation of the various recycling program.

ARI met with Wayne Bowman, County Recycling Coordinator, following its meetings with the municipalities and visits to operating drop-off facilities. (ARI had visited each Municipal facility at least three (3) times over several months). The meeting was held to share ARI's observations and suggestions relative to existing programs and to discuss its finding regarding development of a regional drop-off.

3.1 General Observation

Municipalities operating recycling programs were interested in improving the efficiency of the operations and increasing participation. Program expansion was not considered a priority. Municipalities which did not operate their own recycling program were somewhat satisfied with the existing recycling opportunities available to their residents but willing to consider a regional approach.

3.2 Municipal Program Assessments And Observations

North Whitehall Township

North Whitehall Township has an exemplary recycling program. The Township has received the Governor's Award for Waste Reduction and Recycling. However, with any successful program modification is often required to improve operation efficiency and systemic problems.

ARI was requested to assess the Townships existing drop-off program and provide recommendations relative to equipment and operations needs. North Whitehall received the following assessment:

Overview Of Program

The current drop-off program accepts grass, leaves, yard waste, tree limbs, stumps and tires. The drop-off facility is located in back of the Township Building. Security cameras are used to discourage misuse of the facility.

The various materials are collected in separate concrete bays, which are clearly signed. When sufficient quantities of leaves, grass or tree waste is accumulated, it is loaded by front-end loader into a dump truck and transported to the Lehigh County Compost Facility for processing into compost and mulch. The end products are used by the

Township and also made available to its residents. Tires are handled similarly (i.e.: loaded and delivered to a nearby cement kiln for use as fuel).

Observations

- ARI has visited the Township drop-off site on three occasions to inspect the facility, observe operation and to meet with Township representatives. During each of the visits, fall, spring and summer, the facility was active with residents delivering materials.
- Operations are relatively simple, residents deliver material, front-end loaders consolidate the materials in three (3) wall concrete storage bays, when sufficient quantities are accumulated, the materials are loaded on a ten-ton dump truck and transported to markets.
- Loading was done efficiently by the loader operator, however, the limited size of the material storage bays restricted maneuverability of the machine.
- Equipment used for the operation is not always available when needed do to other demands in the Township and equipment breakdowns.

Conclusion

- The existing program for recycling of leaf/yard waste and tree waste is effective and well supported by the residents of the Township.
- The program produces a dual benefit; it diverts thousands of yards of material from the waste stream and provides the Township and its residents with useful products.
- The use of security cameras at the facility provides maximum opportunity and convenience for residents to deliver material to the facility and reduces the potential of material contamination and/or vandalism.
- The program continues to increase in participation and material volumes collected. To accommodate this increase, larger bays will be required for efficient material handling and storage.
- The Township has provided, at its sole cost, the equipment required for the operation, i.e.: one front-end loader and one ten-ton dump truck. The equipment often requires maintenance resulting in down time in operations. New/upgraded equipment is required for efficient operations.
- Improvements and upgrades will allow for efficient operation of the facility while accommodating increasing volumes of material.

Recommendations

- The Township should prepare an Act 101, Section 902 Grant Application to request financial assistance to cover the cost of the installed security camera system, the construction of larger bays and the purchase of a front-end loader (minimum one cu/yd bucket) and a ten ton dump truck.

Note: The Township program is unique in that its drop-off facility operates year round and not on a seasonal basis, as most leaf/yard waste and tree waste facilities. Based on the programs proven effectiveness in collecting the materials in quantity year round, the front-end loader and dump truck should be funded under Act 101 based on year round dedicated use.

Washington Township

Curbside Collection

The Township has experienced a drop-in participation over the past few years and has requested that ARI provide recommendations for improvements to its public education/information program.

Recommendations are provided in Appendix A. The recommendations can be applied to all of the municipal recycling programs. Examples of educational materials and sources for gaining assistance in preparation of brochures and educational materials is included in Appendix B.

Lynn Township

Lynn Township's drop-off program operates quite efficiently. Resident's sign-in at the waste transfer/recycling site and are charged per bag of waste delivered, no charge for recyclables. This is in essence a Pay As You Throw program (PAYT).

In addition to the monetary incentive for recycling, the program is user friendly, i.e.: commingled glass, metal cans and plastics go in one container, commingled mixed paper, magazines and cardboard in a second. Minimal preparation of materials is required which adds to participation and results in a greater diversion rate.

The facility is relatively small to accommodate its dual usage and a common entrance/exit is its only access.

The location of the facility is not along a major roadway and is accessed by narrow winding roads. It could be suggested that a more convenient and easily accessible site be considered, however, do to the dual use of the facility (waste disposal and recycling) and

the difficulties and cost associated with the siting and development of a waste transfer and recycling site relocated is not recommended.

Existing directional signs to the recycling facility are limited, small and difficult to read. It is suggested that the Township request Penn Dot to place signs along State roads in the area of the facility. Signs can be requested (at no cost) through the Bureau of Environmental Quality by calling (717) 214-3748.

Signs along Township roads should also be replaced with larger ones. The use of larger signs will also assist in increasing public awareness.

The facility receives a considerable amount of tree trimmings waste from residents and Township work efforts (e.g.: storm damaged trees, removal of dead falls, etc.) and Christmas trees.

ARI suggested that the Township consider the purchase of a new chipper/grinder that is capable of efficiently processing the increasing amount and size of tree waste the facility is receiving.

Copies of specifications for a chipper and pertinent information required for preparation of a Section 902 Grant have been provided to the Township.

Heidelberg Township

Note: Observations and recommendations relative to Heidelberg Township are not presented in that the program ceased operation in August of 2002. ARI has recently provided the following suggested options for establishment of a new recycling program for the Townships consideration.

Regional Option

- Participate in the planned County sponsored regional drop-off program. A conveniently located drop-off site at the Municipal Building or at a commercial property frequently visited by the residents will afford the Townships residents an opportunity for recycling. This option will require minimal effort on the Township's behalf and \$0.00 cost in that the County will develop the site and provide collection services and educational materials.

Local Options

- The Township has expressed interest in contracting for recycling services and waste disposal services. It is suggested that if the Township pursues this option that it consider a Pay-As-You-Throw (PAYT) program. The PAYT program is based on paying for the quantity of material discarded on a per household basis. This can be done by a set price per bag or fixed subscription fee and a variable

rate for service. [A model Request for bid document for collection services for recycling and waste was provided to the Township].

- Establish a program for recycling similar to adjacent Lynn Township. Considering that Heidelberg's population of approximately 3,300 is close to that of Lynn at 3,800, the project could be duplicated. The site of Heidelberg's previous drop-off program adjacent to the Municipal Building would be of sufficient size. Cost for the required collection containers, site development and public education would be eligible for Act 101, Section 902 Grant funding, however, presently only composting programs are being considered. It is not known when or if funds for recycling programs will be available.

Weisenberger Township

Although Weisenberg does not operate its own recycling facility, the Waste Management Inc. (WMI) operates a drop-off recycling facility at its waste transfer station located in the Township.

It is noteworthy that the residents of Weisenberger Township are not charged for disposal of household waste or recyclables delivered to the transfer station/recycling drop-off.

Although there is no monetary incentive, the majority of the residents which visited the facility did recycle.

The Township is receiving the benefit of a drop-off recycling program at no cost.

The Township is pleased with its arrangement with Waste Management and the available services for curbside collection by private subscription.

ARI suggest that the Township consider instituting a public education program. Brochures could be printed and distributed encouraging residents to recycle at the Waste Management drop-off or through curbside services provided by private haulers.

Lowhill Township

Lowhill Township does not operate a recycling program and is satisfied with the recycling opportunities which exist through the private sector i.e.: WMI drop-off program located in Weisenberger and curbside collection of recyclables.

ARI suggests that the Township encourage the use of existing opportunities for recycling and provide information to their residents identifying recycling opportunities within the region and the availability of curbside collection of recyclables by private haulers.

4.0 Options for Establishing Regional Drop-off Recycling

Although the scope of this study did not provide for a detailed analysis of options for establishment of a regional drop-off program. ARI did conduct literature research of in-house information and data and analysis of existing multi-municipal drop-off programs.

ARI reviewed various types of multi-municipal and regional programs/systems including permanent and mobile or rotating drop-off sites. The programs/systems used various types and sizes of collection containers (e.g.: segmented and open roll-off containers, customized roll-off containers and bins, dumpster type containers) and collection vehicles, designed to load materials from prescribed containers.

Based on the review, it appeared that a system in current use by several counties in the State could provide Lehigh County with the majority of components needed for establishment of an efficient and cost-effective drop-off program. The system identified was the Hall-All System.

The Hall-All System entails a series of six (6) yard hydraulically dumping drop-off bins, specially designed collection vehicles and a transfer system for material consolidation. The Hall-All System is capable of handling separate stream and/or commingled materials.

Some of the reported benefits to the identified system included:

- Flexibility – Capable of handling commingled or various single stream materials.
- Expandable – Additional bins can be readily added.
- Ease In Siting – Sites have been easily developed at grocery stores, malls, State facilities and school properties.
 - Little site preparation required only a flat hard surface.
 - Does not have the appearance of a garbage container.
 - Limited space required do to hydraulic side loading.
- Economics – Comparatively lower cost per ton of material collected.
- Residuals – Low rate of contamination/residuals do to the design of the bin openings.

ARI recommended that the County further explore the potential of the Hall-All system to meet their needs for establishing a regional drop-off program/system.

Mr. Bowman was familiar with the system having previously served as recycling coordinator for Schuylkill County which uses the Hall-All System as part of its County wide drop-off recycling program.

4.1 Comparison Of Drop-Off Systems

Mr. Bowman provided data (based on seven (7) months of actual operation) for the three (3) drop-off collection systems used by Schuylkill County. The Systems Compared were:

1. A mobile roll-off system.
2. A permanent roll-off system.
3. The Hall-All System.

System	Tons Collected	Collection Costs	Residue	Revenues	Net Cost Per Ton
Mobile Roll-off	4.69	\$74.98	2 %	\$3,621.91	\$42.80
Permanent Roll-off	3.15	\$97.34	7.72%	\$ 556.03	\$47.12
Hall-All System	7.27	\$54.73	.17%	\$7,962.38	\$ 0.03

Note:

(1) Figures are based on monthly averages. The number of total sites (of a given system) are divided by total material collected.

The comparison of the three (3) systems clearly supported the findings of ARI's review and recommendation.

5.0 Program Development

Mr. Tom Boushel, Vice President of VQuip, Manufactures Representative for the Hall-All System, was contacted. A Proposal was prepared for the County by VQuip to provide, site and install a recycling system consisting of five (5) recycling sites. The proposal included one (1) Hall-All collection truck and bins and equipment required for the five (5) site system. A copy of the proposal and equipment specifications is included in Appendix C. The proposal was reviewed by ARI and found to be technically sound.

5.1 Presentation Of Proposed Program

Following the review of the proposal, ARI contacted the municipalities to schedule a meeting to discuss its findings and recommendations and to provide information on the proposed Hall-All System for their consideration.

A Municipal officials conference hosted by the region provided an excellent forum. The conference afforded the opportunity to inform not only municipalities in the region but also other nearby municipalities of the recommended recycling drop-off program.

At the conference, it was conveyed that the planned regional drop-off program would be of mutual benefit to the County and the municipalities. For the County, the program would assist it in achieving its goal for increased recycling; provide greater opportunities for recycling to its residents in the region and potentially other nearby municipalities. The program could be implemented in a short period of time and at marginal cost to the County (with Act 101 Grant assistance).

For the municipalities, the planned program would greatly expand opportunities for recycling and achieve greater waste reduction. This opportunity would be provided by the County at \$0.00 cost. The drop-off program provides benefits to communities with curbside collection by collecting materials not included in their program.

Details of the Hall-All System were presented by a Vquip representative.

5.2 Outcome

The County worked with Vquip to refine details of a regional drop-off program, and applied for an Act 101, Section 902 Grant.

Considering the limited amount of grant funding available and in an attempt to prevent duplicity of efforts, the County did not include a collection vehicle in its program. Services for collection would be provided by Schuylkill or Carbon County which operate regional drop-off programs using the Hall-All System.

The program presented for consideration under Section 902 and planned for servicing the northwestern region and potentially other interested municipalities included the following elements:

- The County will conduct site assessments and negotiate agreements for locations of the drop-off and oversee installation.
- The drop-off or depot will include a series of specialized containers with openings designed for each commodity to be collected.
- Containers will have decals to educate users regarding materials placement and materials not accepted.
- The sites will be unmanned, at least initially.
- Services for collection and marketing materials will be provide through an agreement with Schuylkill or Carbon County.
- Promotional and education programs will be provided by the County.
- The program would provide for the collection of glass clear and colored, aluminum and steel/bi-metal cans, newspaper, corrugated cardboard, box board, and HDPE and PET plastics.
- Participating municipalities will allow the County to file an Act 101, Section 904 Grant for materials collected to defray program costs.

5.3 Results

The County received an Act 101 Grant Award in August of 2002 and is pursuing program implementation.

APPENDIX A

RECOMMENDATIONS FOR

EDUCATION PROGRAM

Public Information/Education

Implementation of a comprehensive education and information campaign will help insure the program is successful initially and over the long run. The following are suggested components for developing an education and information program that will gain public interest; increase enthusiasm and support. The components are applicable to recycling and/or leaf and yard waste composting programs.

- Place an ad in a paper of general circulation providing details of the program and its merits, suggest this be done twice per year. If a new program is to be initiated place ad at least one ad 30 days prior to initiation.
- Prepare and distribute news releases and public service announcements to the local media. Provide program details, program kick off date and importance of the program e.g.: waste stream reduction, saving on disposal fees, saving/reuse of valuable resource, reduction of dependence on disposal facilities and, of course, it's the law (for mandatory programs).
- Development of a slogan e.g.: send your leaves to a mulch better place; recycle today for a better tomorrow. Slogans help with program identity and purpose.
- Develop a logo representing the program that will be readily identifiable. The logo can act as a constant reminder (particularly if its placed on a refrigerator magnet or calendar).
- Prepare an instructional flier, door hanger or brochure, one that is eye catching and to the point: (i.e.: who, what, where, when and why). The flier, door hanger or brochure could be distributed by volunteers or sent with Newsletter, utility or tax bills to save on mailings. Additional brochures (and posters) could be placed in public buildings and local businesses.
- A banner or banners can help publicize the program. A banner could be used at the beginning of leaf collection, and a second banner used for grass collection (the programs first month). A banner could also be used for recycling re-enforcement (e.g.: a reminder used for earth day and other events). These banners could be used repeatedly season after season.
- Distribute promotional items that encourage participation, (e.g.: a refrigerator magnet collection calendar, pencils, pens, rulers made from recycled materials). Items that are seen or used regularly and will act as a constant reminder.
- Preparation of a recycling display outlining the programs benefits, charting participation and avoided cost of disposal, etc. The display could be placed in the Municipal Building and used at various civic events.

- Incentive programs for participation, that is: rewarding households who participate. Conduct a random drawing and if the selected household has participated (set out its recyclables on a given day) a prize is awarded or a certificate or recognition.
- Encourage and assist schools to provide for recycling/composting education programs. Youth “will” be constant reminders to adults regarding recycling and composting often our best educators of adults.

APPENDIX B

EDUCATIONAL MATERIALS

APPENDIX C

VQUIP PROPOSAL FOR DROP-OFF

SITES