

SWANA RECYCLING TECHNICAL ASSISTANCE

FINAL REPORT

**UPPER LEACOCK TOWNSHIP
FEASIBILITY STUDY OF A LEAF WASTE DROP-OFF
FACILITY & LEAF WASTE MANAGEMENT ALTERNATIVES**



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HARRISBURG, PENNSYLVANIA

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Table of Contents

	<u>Page</u>
1.0 INTRODUCTION.....	4
2.0 STUDY BACKGROUND.....	4
2.1 State Law Requires Open Burning To Be Prohibited.....	5
3.0 PENNSYLVANIA ACT 101 LEAF WASTE REQUIREMENTS	7
4.0 FEASIBILITY OF A TOWNSHIP-OPERATED YARD WASTE COMPOST FACILITY	8
5.0 LOCAL LEAF AND YARD WASTE DROP-OFF/PROCESSING FACILITIES ..	10
6.0 LEAF & YARD WASTE MANAGEMENT ALTERNATIVES.....	13
6.1 Bid For Waste, Recycling And Leaf Waste Collection and/or Leaf and Yard Waste Drop-Off Service to Secure a Contract with a Single Hauler.....	14
6.1.1 Single Hauler Contract Cost Analysis	15
6.2 Intermunicipal Arrangements for Municipal Leaf Waste Collection	16
6.3 Intermunicipal Arrangements for Residential Leaf Waste Drop-off at an Existing Municipal Facility.....	16
6.4 Bidding for Leaf and Yard Waste (Only) Collection and/or Drop-Off Services.....	16
6.5 Bidding for Leaf and Yard Waste (Only) Drop-Off Services.....	17
6.6 Develop and Operate a Public Leaf and Yard Waste Composting Facility.....	17
6.7 Ordinance Revisions Targeted for Leaf Waste Management.....	18
7.0 RECOMMENDED LEAF WASTE MANAGEMENT STRATEGY	18

APPENDICES

Appendix A – Listing of Private and Public Compost Facilities in Lancaster County

Appendix B – Preliminary Financial Analysis: Single Hauler Contract

FIGURE - Zoning Map

UPPER LEACOCK TOWNSHIP
EXECUTIVE SUMMARY
FEASIBILITY STUDY FOR A LEAF WASTE DROP-OFF FACILITY
& LEAF WASTE MANAGEMENT ALTERNATIVES

This Report summarizes a study conducted by Gannett Fleming, Inc. (GF) for Upper Leacock Township (Township), Lancaster County, Pennsylvania. GF evaluated the Township's existing leaf waste management program and provided guidance and recommendations related to the feasibility of implementing a residential leaf and yard waste drop-off facility within the Township. Public yard waste compost facilities can supplement the residential curbside collection of leaf waste, which is required by the Municipal Waste Planning, Recycling and Waste Reduction Act of 1988 (Act 101). GF provided the following assistance to the Township:

- Reviewed current waste management and leaf waste management services.
- Assisted with the Act 101, Section 902 Grant pre-application meeting and process.
- Evaluated the feasibility of the Township developing/ operating a public leaf and yard waste drop-off and compost facility. Analyzed leaf waste management alternatives.
- Reviewed open burning issues and regulatory requirements.
- Provided guidance and recommendations for the implementation of a cost-effective leaf and yard waste management program to meet PADEP policies for leaf waste management, and support residential needs for disposal/recycling of this material.

According to the Pennsylvania Department of Environmental Protection (PADEP), the Township is out of regulatory compliance with its leaf waste management program and must implement ordinance revisions and program changes or risk forfeiting Recycling Grants and/or possibly face other penalties. The Township is required to implement an ordinance to prohibit burning, which is currently a common practice in the Township used by residents to manage leaves and brush. Consequently, the Township needs to implement a waste management program that offers disposal/processing alternatives to replace burning of leaves and other yard wastes.

As GF's analysis has concluded, the development of a Township-operated compost facility is not feasible at this time due to high cost and limited availability of staff; but there are alternatives to provide residents a balanced leaf waste management program. Some of the key reasons GF does not recommend the Township develop its own compost facility are:

- It is cost-prohibitive at this time to develop an economically sustainable compost facility that will include paving and processing equipment (e.g. a front-end loader, grinder and trommel screen). Likely, the low-end cost will exceed \$400,000 and Recycling Grant funds that used to be relatively accessible are now diminishing. Operation of this compost facility will require additional Township personnel, which are not available.
- Other public and private compost facilities and farms are within reasonable distance to the Township to serve as drop-off points and processors for leaf waste and yard wastes.

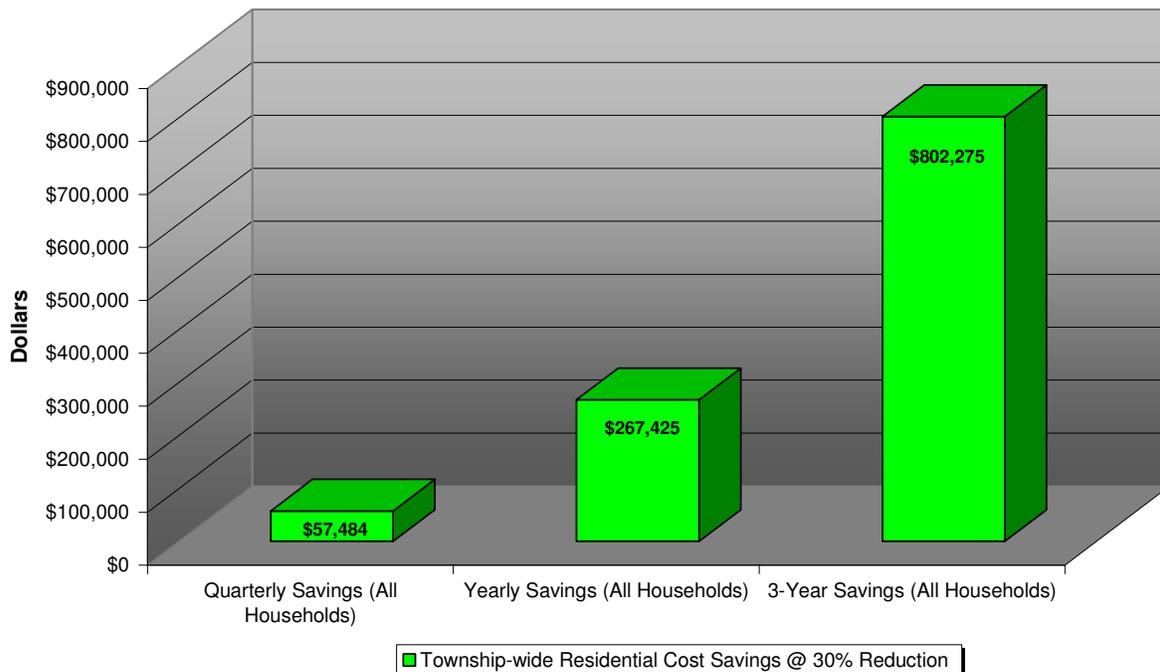
Negotiations and education need to take place so residents can utilize these existing local composting options.

- GF believes the planning focus should be implementation of economically viable leaf waste management alternatives that utilize existing compost facilities and farms in conjunction with a single hauler contract collection program for waste, recyclables and leaf waste.

Because burning should be prohibited and leaf and yard waste must be managed cost effectively according to PADEP policies, GF recommends the following baseline program structure and strategies for implementing a system that will provide residents fair leaf and yard waste options while meeting PADEP requirements. The recommendations are provided in more detail in the Report.

- Form a **Waste Management Committee** including the Recycling Coordinator and at least one elected official.
- **Issue a Request for Proposal (RFP) or bid to competitively secure a single hauler/collector curbside residential waste, recycling and leaf waste collection services for the entire Township.** The potential cost savings to residents is considerable as shown in Chart ES-1.

**Chart ES - 1
Upper Leacock-wide Residential Cost Savings
Municipal-wide Waste Contract**



- **Implement an ordinance to prohibit burning and provide residents disposal/processing alternatives.** The Township should work to develop the following disposal and processing options for leaf and yard wastes:
 - **Improve curbside leaf and yard waste collection services** under a municipal-wide contract. The new program could include distribution and use of a dedicated residential yard waste container of at least 55-gallon capacity.
 - **Establish yard waste tipping arrangements for curbside collected yard waste** with West Earl Township and their Board of Supervisors or another facility.
 - **Educate residents to utilize the Manheim Township Compost Park** for residential leaf and yard waste drop-off.
 - **Identify at least three (3) farms that will accept leaves and complete the short application contained in the Permit-By-Rule Guidelines.**
 - **Backyard composting** should be encouraged through education.
- **Revise the Recycling Ordinance to meet PADEP policies for leaf waste management in conjunction with a revised waste management system.**
- **It is recommended the Township pay the disposal tipping fees for waste as an incentive** to proactively increase recycling to avoid disposal costs.
- **Designate one or more enforcement officers**, as supported by the ordinance and/or “Municipality’s Policies and Procedures” to enforce trash and recycling with the power to issue citations for specified offenses. Work closely with local police to support enforcement efforts.

UPPER LEACOCK TOWNSHIP
FINAL REPORT
FEASIBILITY ANALYSIS OF A LEAF WASTE DROP-OFF FACILITY
& LEAF WASTE MANAGEMENT ALTERNATIVES

1.0 INTRODUCTION

This Report summarizes a study conducted by Gannett Fleming, Inc. (GF) for Upper Leacock Township (Township), Lancaster County, Pennsylvania. This evaluation was completed for the Township as part of the Recycling Technical Assistance Program sponsored by the Pennsylvania Department of Environmental Protection (PADEP), the Pennsylvania Association of Township Supervisors (PSATs), and the Solid Waste Association of North America (SWANA). GF evaluated the Township's existing leaf waste management program and provided guidance and recommendations related to the feasibility of implementing a leaf and yard waste drop-off facility within the Township to supplement the curbside collection of leaf waste as required by the Municipal Waste Planning, Recycling and Waste Reduction Act of 1988 (Act 101). GF provided the following assistance to the Township:

- Reviewed current waste management activities including current leaf waste collection services provided in the Township.
- Met with the Township to review to describe program alternatives, and to assist with the Act 101, Section 902 pre-application meeting.
- Evaluated the feasibility of the Township developing and operating a public yard waste drop-off and compost facility within the Township municipal boundary. Analyzed leaf waste management alternatives.
- Reviewed open burning issues and regulatory requirements.
- Provided guidance and recommendations for the implementation of a leaf and yard waste management program that will cost effectively achieve curbside leaf waste collection services for residents while meeting PADEP policies for leaf waste management.
- Completed this project Report to summarize and document findings and recommendations.

2.0 STUDY BACKGROUND

Upper Leacock Township is located in the central portion of Lancaster County, just east of the City of Lancaster. The Township is home to roughly 8,200 residents (2000 US Census Bureau) and encompasses 18.1 square miles. The Township has a corridor of residential and commercial establishments that run along Route 23, while the remainder of the Township is primarily agricultural farmlands (see Zoning Map attached at the end of this Report). The Township has 2,777 residential units (2000 US Census Bureau). The Township is “mandated” by Act 101 of 1988 to provide curbside recycling services, including the curbside collection of leaf waste. Leaf waste, as defined by Act 101, includes leaves, garden residues, shrubbery and tree trimmings,

and similar material, but not including grass clippings. Currently, Township residents privately subscribe for waste collection and recycling collection services with one of nine permitted local haulers that operate within the Township.

PADEP has notified the Township that it is not in compliance with Act 101 regarding leaf waste management practices, including the implementation of an ordinance that prohibits open burning of specified wastes and recyclables, including leaf waste. PADEP has encouraged the Township to submit for Act 101 Section 902 Recycling Grant fund to offset costs associated with the development and equipment for a Township-operated leaf and yard waste drop-off and processing facility. The Township is requesting assistance from Gannett Fleming (GF) to determine the feasibility of establishing an improved leaf waste management system, which may include a new yard waste composting facility. As part of this analysis, GF provided several new alternatives for leaf and yard waste collection. Implementing and enforcing leaf waste services that comply with PADEP policies has proven difficult in a system where curbside leaf collection service vary considerably depending on what hauler is providing the service (if providing it at all).

PADEP wants mandated recycling communities including Upper Leacock Township to implement an enforceable waste and recyclables collection system. Without confirmation to PADEP that the Township has implemented an Act 101-compliant leaf waste management system, the Township will not be eligible for Recycling Grants that can be used to offset costs associated with the recycling program. Recycling Grants can help to stabilize residential costs for these programs and be used to provide many ongoing and beneficial programs to Township residents. The implementation of an ordinance that prohibits burning in areas zoned residential is one of the Township's waste management program requirements.

2.1 State Law Requires Open Burning To Be Prohibited

Open burning is a very controversial topic in Upper Leacock Township. Proponents of burning feel that they have the need and the right to burn leaves, brush and/or trash. A number of Township residential properties have over an acre of land; some containing a number of trees that drop leaves as well as branches. Annual yard maintenance of these types of properties requires processing and removal of this material. So, without burning, many residents simply would not know what to do with brush and large quantities of leaves. Those against burning don't want smoke and toxins drifting onto their property and cite economic, environmental and other social concerns that support the banning of open burning.

The health impacts and nuisance caused by smoke that is ejected from a chimney is typically less when compared with open burning that occurs at ground level, and congruently, the contained burning of firewood in fireplaces and wood stoves is permitted under State law. Open burning that occurs outside in pits, piles or in "burn barrels" at ground level has greater negative impacts to residents both because it is a more direct nuisance and because smoke inhalation at higher concentrations from nearby burning has greater health risks (e.g. respiratory problems and eye irritation; particularly in children and adults with allergies). Smoke is a public nuisance within the Township as confirmed through complaints phoned in to the Township office.

Nearly every form of combustion contributes to atmospheric pollution, including ozone depletion depending on what materials are burned. Burning organic material that could be composted or processed into valuable mulch seems, to some, counter productive. Although the debate on this issue will continue among residents and elected officials, GF offers the following facts on open burning. These facts clarify that the Township is subject to State Law and PADEP policy and therefore is required to implement a new ordinance to prohibit burning of specified materials including leaf waste, regardless of how people “feel” about this issue.

- The Pennsylvania Solid Waste Management Act of 1980 deemed that “It shall be unlawful for any person or municipality to burn solid waste without a permit from the Department.
- Title 25, Section 129.14, of the Pennsylvania Code indicates that “**a) Air basins.** No person may permit the open burning of material in an air basin.
- Act 101, Section 902 Grant Requirements include that “municipalities mandated to recycle under Act 101 must have enacted an ordinance which includes, but is not limited to, the following excerpts from Act 101 of 1988:
 - a. a requirement for the separation of leaf waste (as defined by the Act) from MSW by residents of homes and apartments;
 - b. a requirement for the separation of at least high-grade office paper, corrugated paper, aluminum and leaf waste from MSW by commercial, municipal and institutional establishments;
 - c. provisions to ensure compliance with the ordinance; and,
 - d. provisions for the recycling of collected materials.
- Furthermore, the Recycling Grant application indicates that a grant may not be awarded to any county or municipality that has failed to comply with the conditions set forth in previously awarded grants, the grant requirements of Act 101, the regulations of the Act, or the reporting requirements of the Act. No county or municipality that encourages or allows the destruction of materials included in its recycling program will be awarded a Recycling Grant. Upper Leacock Township should immediately develop a concise burning ordinance to avoid loss of grant funding and/or further penalty from the Department.

If the Township prohibits open burning, residents will lose what really has become a “disposal” option. Consequently, it will be important for the Township to provide a reasonable and balanced program for leaf waste management so residents have one or more options to manage leaf and yard waste and to, in a sense, replace open burning. In this study, GF recommends a waste collection system structure that incorporates a combination of curbside and drop-off leaf waste options for Township residents, but GF acknowledges that even a balanced program won’t satisfy some residents accustomed to burning large quantities of leaf and yard waste.

3.0 PENNSYLVANIA ACT 101 LEAF WASTE REQUIREMENTS

It is important to understand the requirements that govern the methods leaf waste must be collected curbside and/or through a supplemental drop-off program for the Township to be in compliance with Act 101. The following guidance information was prepared by PADEP in May, 2007 to help Act 101 mandated municipalities like Upper Leacock Township to better understand and meet leaf waste requirements. The Township is required by law to implement a leaf waste management program consistent with these regulatory requirements. The Township's current leaf waste program does not fully comply with the regulations and PADEP policies.

Act 101, Section 1501(c)(1)(ii) and (iii), requires residents in mandated municipalities to separate leaf waste from other municipal waste generated at residential, commercial, municipal and institutional establishments. "Leaf waste" is defined in the Act as "Leaves, garden residues, shrubbery and tree trimmings, and similar material, but not including grass clippings." Source-separated leaf waste, as with other recyclable material, is required to be collected at least once per month as set forth in Act 101 Section 1501(c)(2) and (3) and processed at PADEP-approved composting facilities.

Municipalities that are mandated to comply with Act 101 which have programs that collect leaves only in the fall are not in compliance with the Act. In order for municipalities that are mandated to comply with Act 101 to have a leaf waste collection program that meets the minimum requirements, the program must, as a minimum:

1. Require by ordinance that leaf waste consisting of leaves, garden residues, shrubbery and tree trimmings, and other similar material are targeted for collection from residences and commercial, municipal and institutional establishments; and
2. Establish a scheduled day, at least once per month, when leaf waste is collected from residences; or
3. Establish a scheduled day, not less than twice per year and preferably in the spring and fall, when leaf waste is collected from residences, and facilitate a drop-off location or other collection alternative approved by PADEP that allows residents in the municipality to deposit leaf waste for the purposes of composting or mulching at least once per month. The leaf waste drop-off location may be located in a neighboring municipality or at a private sector establishment, provided that an agreement is in place to utilize that location and the municipality keeps residents and commercial, municipal and institutional establishments informed of the option at least once every six months.
4. Ensure that commercial, institutional and municipal establishments generating leaf waste have collection service.
5. Municipalities are encouraged to manage source separated Christmas trees as leaf waste for processing at PADEP-approved composting facilities.

4.0 FEASIBILITY OF A TOWNSHIP-OPERATED YARD WASTE COMPOST FACILITY

Owning and operating a yard waste processing facility means getting into the business of composting. The capital cost and operating cost investment, finished products and marketing strategies and revenues are dependent upon the type of composting technology and equipment used and the staff time allocated to operate the facility. For yard waste compost facilities less than five acres, a streamlined permitting process has been developed under the PADEP Permit-by-Rule Guidelines and application. In short, the Permit-By-Rule process is less paperwork than a General Compost Permit for composting, but still requires that all applicable regulations for operating a compost facility are followed.

GF conducted a preliminary analysis of options available to Upper Leacock Township for establishing a comprehensive yard waste management program with consideration of developing and operating a compost facility within the Township boundary. It is noted that the Township had originally considered locating a yard waste drop-off facility near the site for the proposed spray irrigation lagoons but it is now believed that all the land purchased will be needed for the lagoons. Based on GF's findings it is clear that the timing is not favorable for the Township to move ahead with procuring land and equipment and hiring staff for a Township-operated yard waste compost site. Some of the key factors for this determination include:

Prioritized Waste Management Planning

In response to PADEP pressure to implement an enforceable waste management system in the Township, and as advised by GF, the Township is in the process of evaluating a transition from an “open”, multi-hauler waste management program to a contractually based program where a single hauler may be selected to provide residential curbside waste and recycling services, including leaf waste collection services. This evaluation should be the primary waste system planning focus and, if this new program is implemented, it will result in significant improvements to the entire waste management system and will lower the average residential trash bill. Adding the development of a new compost facility into the mix of this planning process is simply too much to tackle. Further, under a new contracted waste program, the Township will be able to create a balanced yard waste management program where a fair level of curbside leaf and yard waste collection service is offered to residents, while being supplemented by one or more local public and/or private compost facilities. As part of this system, the Township will need to develop arrangements with one or more nearby compost sites so residents can drop-off leaves, brush and other acceptable yard wastes.

Burdensome Costs and Limited Staffing and Act 101 Grant Funding

The initial capital cost for compost facilities are high, particularly when processing equipment such as a grinder and screener are procured. Additionally, compost facility operation and maintenance and site upkeep costs or the operating “cost per ton” will increase or decrease according to the type and usage of the equipment and can range from a few dollars per ton to over \$30 per ton when several processing steps are used (e.g. grinding, turning, and two or more screenings). Even renting equipment can be expensive; neighboring Manheim Township has periodically rented a brush grinder at a cost of **\$200 per hour**. For many compost operations, having adequate processing and screening equipment is key to the facilities’ economic sustainability; equipment enables the production of one or more market-grade finished compost

products that can then be sold to generate revenue. Adding processing goes hand and hand with adding labor hours. Further, composting is a science that requires sound knowledge/training by one or more operators. Understanding organics and how these materials react to factors such as time, moisture, temperature, feedstock ratios, bacteria and other variables is required. GF also does not feel it is practical at this time for the Township to develop a compost facility due to the limited availability of staff time and limited financial resources. A composting facility, although viewed positively by the Township, is not the highest priority at this time. Arrangements with nearby compost facilities and farmers are being evaluated as alternatives.

It is possible to operate a low-tech yard waste compost facility in a way that reduces capital expenses and labor investment. For example, compost facilities can operate using only a front-end loader. However, initial capital cost may still be high and the ability to generate revenue from unscreened finished compost that is only turned with a loader may be diminished. Further, the ability to manage brush without on site grinding equipment can hinder operations (brush takes up space) and further limit revenue opportunities. GF has provided a general example of Yard Waste Compost Facility Costs and the approximate compost site development costs for nearby Warwick Township, which constructed its compost facility in 2007.

The first table presents site development and equipment cost ranges that can be incurred when setting up a 5-acre compost site. The estimate assumes certain equipment and compost site features (e.g. paving) because GF recommends these program components be included so that high quality compost can be generated and sold for revenue to achieve sustainability. Costs including staff and/or consultant time for addressing local zoning issues, compost facility permitting requirements, and contacting adjacent landowners are not shown. GF notes that the first table is an example only, and ranges have been provided because a proposed site location and specific equipment have not been identified. The second table shows Warwick Township compost facility actual costs (approximate) approach **\$400,000** and this is a drop-off operation, not a full-scale compost operation where materials are windrowed and actively turned into compost.

Example Yard Waste Compost Facility Costs

Item	Cost Range
5 Acres of Land	\$32,500 - \$50,000
New Front End Loader	\$110,000 - \$150,000
Windrow Turning Equipment	\$100,000 - \$400,000
Wood Waste Grinder	\$175,000 - \$400,000
Low Through-put Compost Screen	\$10,000 - \$15,000
High Through-put Trommel Screen	\$200,000 - \$300,000
Gate(s)	\$500 - \$1,000
Fencing	\$1,000 - \$8,000
Grubbing/Clearing	\$5,000 - \$15,000
Grading	\$5,000 - \$10,000
Paving (1 acre)	\$120,000 - \$150,000

Approximate Costs for Compost Site Development: Warwick Township (2007)

Item	Approximate Costs
4.95 Acres of Land (lease cost)	\$6,000 per year
Tub Grinder	\$1*
Earthwork	\$60,000
Concrete Bunkers	\$76,000
Fencing	\$40,000
Paving	\$116,000
Stormwater	\$29,000
Engineering Services	\$30,000
Miscellaneous Costs	\$30,000
Approximate Total Costs	\$387,001

*Pre-owned Recycling Grant Funded equipment provided by Cumberland County.

5.0 LOCAL LEAF AND YARD WASTE DROP-OFF/PROCESSING FACILITIES

Identifying a secure access to one or more compost facilities located outside the Township is particularly important since it is not recommended that the Township develop and operate a yard waste compost facility at this time. GF believes it is fundamentally important for local municipalities and private facilities to share resources and cooperate to reduce and/or eliminate duplication of services in order to reduce total system costs. In other words, if a local processor has already invested in capital and employees, why develop another facility without first attempting to negotiate a fair arrangement beneficial to all parties?

A listing of private and public compost facilities in the County is located in **Appendix A**. GF provided approximate distances to each facility from Upper Leacock Township. Section 3.0 clarifies that Upper Leacock Township is mandated by Act 101 of 1988, and is required to implement a curbside leaf waste management program that includes a drop-off location for leaf waste unless the Township collects leaf waste at least once per month. Because of rising collection costs and the rural areas with distant collection routes, it may be cost prohibitive for the Township to collect leaf waste each month at the curbside. GF contacted private and municipally operated compost facilities located within 15 miles of Upper Leacock Township that could serve as outlets for leaf waste and other yard wastes generated by the Township.

West Earl Township (municipally operated)

West Earl operates a curbside yard waste collection program that accepts grass clippings, leaves, sod and other garden residues that must be placed in paper Kraft bags for pickup by the Township's hauler. Yard waste is collected every other week from April 1st to October 31st. Kraft bags are purchased at the Township Municipal office. Woody material (shrubbery and tree trimmings) must be securely tied in bundles which may not exceed four feet in length and thirty pounds in weight. West Earl processes its curbside yard waste at their yard waste compost facility at **161 Locust Street in Lancaster**. A grinder is rented periodically to grind

accumulated piles of brush. Tully Enterprises removes processed material at no cost as needed. Residents currently have open site access, but the Township has many incoming loads of material from outside the Township. To improve site monitoring the Township is budgeting for a key card access gate to assure controlled access to the facility from Township residents only and a few commercial accounts and a few municipalities, provided space allows. Residents pay for drop-off and compost using a volunteer drop-box.

GF contacted West Earl in August 2008. Although the facility is approaching maximum capacity, it does have a little room left for composting. West Earl's compost facility accepts curbside deliveries of leaf waste from New Holland Borough, Ephrata Borough and Akron Borough. The haulers must pre-weigh incoming material so that West Earl can accurately bill the appropriate municipality based on tonnage. Current tipping fees for yard waste delivered to the facility are **\$20-\$25 per ton**. West Earl indicated that Upper Leacock Township can approach the Board of Supervisors to seek approval to utilize the site and work out any details.

Manheim Township's Compost Park (municipally operated)

GF contacted Manheim Township in August, 2008. Based on these discussions, the Township is willing to accept residential drop-off yard waste from Upper Leacock Township residents provided the residents adhere to their facility guidelines pertaining to preparation and handling procedures. The following information explains the compost facility and was obtained from their municipal website (<http://www.manheimtownship.org>).

Manheim Township's Compost Park is located at **2775 Oregon Pike in Lititz**.

- The park is open everyday, dawn to dusk.
- Yard waste includes: garden residues, shrubbery & tree prunings, sod, leaves and grass.

Biodegradable bags are available at the Manheim Township Municipal Office and the Compost Park for \$.50 per bag. The bag purchase includes one free fill with wood mulch and one free disposal of yard waste materials. Residents may reuse the biodegradable bags at a cost of \$.50 per bag to fill the bag with wood mulch or to dispose of yard waste. There is no charge to dispose of leaves.

- To dispose of yard waste, there is a charge of \$5.00 per small pick-up or trailer load or if you bring the materials in a biodegradable paper bag, the cost is \$0.50 per bag.
- Payment of fees is on the honor system at the compost park.
- Yard waste may be brought in other containers, but only biodegradable paper bags may be left at the park. It is the resident's responsibility to remove unapproved containers, including plastic bags.
- Wood mulch and leaf compost is available to all residents.
- Wood mulch is \$.50 per bag or \$10.00 per pickup truck or trailer load.

- Leaf compost is \$1.00 for a 10-gallon bag.
- No pickup truck or trailer loads of leaf compost are permitted.

The Manheim Township compost park is not willing/does not have the capacity and staffing to accept truck load deliveries of curbside collected yard waste from Upper Leacock Township.

Warwick Township's Compost Facility (municipally operated)

Warwick Township's Leaf and Woody Yard Waste Drop-off Site is located at **550 Stauffer Road**, north of the Lancaster Airport. The compost site was developed in 2007 using Recycling Grant funding approaching \$400,000. Township leases the land for about \$6,000 per year. This site is designated to serve Warwick Township residents only. The site accepts:

- Tree limbs
- Shrubs
- Leaves
- Garden residue

*Grass is NOT accepted.

The site is open seven days per week from dawn to dusk. The entrance has an automated lift gate and is monitored by cameras. There is no fee to drop-off these materials and residents can take wood chips at no cost. Natural Soils Products takes some of the compost, which is loaded up using Township loaders. Leaves are taken to one or more nearby farmers that have completed a two-page Land Application of Yard Waste Form. The farmers use orange snow fencing to designate the unloading area for leaves that can be dropped off by residents or delivered by Warwick Township. Warwick Township assists the farmers in completing this Form. Warwick Township just received a used Tub Grinder from Cumberland County (originally purchased using PADEP Recycling Grant funds) to help improve their processing capability.

Martin and Martin Mulch (privately operated)

Martin and Martin mulch is located at **55 Woodcraft Drive in Ephrata**. This private compost facility is 12 miles away from the Township and allows residential drop-off and deliveries of curbside collected yard wastes. This distance is within PADEP's "reasonable" distance for compost facilities to serve as a supplemental leaf waste drop-off in accordance with Act 101..



Martin and Martin Mulch allows truckloads of leaf and yard waste deliveries from curbside collections at the following rates (August 2008):

- **\$3 per cubic yard** for clean brush
- **\$5 per cubic yard** for mixed yard wastes (kraft paper bags accepted)
- **\$3 per cubic yard** for leaves only

Deliveries of yard waste in waste packers will be accepted from Upper Leacock Township, but it is important that the material does not contain trash.

6.0 LEAF & YARD WASTE MANAGEMENT ALTERNATIVES

The current leaf waste management services that are provided in the Township are variable because there are about ten haulers operating in the Township any given year. Although the Township has a solid waste ordinance, it is difficult for the Township to verify that the haulers meet waste and recycling ordinance requirements, including the Act 101 leaf waste requirements. According to Township Ordinance, “each permitted collector shall schedule collections for tires, white goods, and yard waste at least twice annually.” The Ordinance definition of yard waste is **all garden residues, leaves, shrubbery, tree trimmings, grass clippings, and sod.**

GF does not feel the Township has a “comprehensive” leaf and yard waste management program. There is multi-hauler service variability and lack of hauler and residential accountability. Keeping tabs on the rural outskirts is difficult and time consuming and some residents do not contract with a waste hauler. Although yard waste drop-off sites are accessible for residents, the proper negotiations and arrangements are not in place to utilize these outlets and the residents have not been adequately notified of these viable leaf and yard waste drop-off points. Open burning is detrimental to the environment and compost facilities and farms are

available to turn leaves and other yard waste into beneficial compost and mulch products. Leaves and compost accelerate plant growth and can reduce costs for synthetic fertilizers. An improved system would contain a combination of consistent curbside and drop-off options for leaves and other specified yard wastes as supported through education that increases awareness and use of these processing options. An improved system will not burn this valuable material, but “close the loop” and return this material back to the community and the environment through back yard composting and through compost products generated by local processors and used by farmers,

The unique demographics of the Township impact leaf and yard waste generation, collection efficiency and costs, and overall yard waste management program strategy. A residential and industrial corridor is contrasted by a very rural agricultural outlying area (see the **Zoning Map** at the end of this Report). As a result, the appropriate residential leaf waste management services and corresponding costs can vary depending on whether the residential establishment is in or outside of the residential and industrial corridor. PADEP is firm, however, that Act 101 leaf waste management policies are municipal-wide.

In the following subsections, GF has identified a number of leaf waste management alternatives that consider curbside collection services and drop-off arrangements for leaves and leaf wastes. A combination of one or more of these alternatives and/or specific program variations may improve the results of the alternatives when finalizing a leaf waste management system for the Township. GF follows this overview of alternatives by a section that recommends a preferred leaf waste management strategy to be implemented in Upper Leacock Township.

6.1 Bid For Waste, Recycling And Leaf Waste Collection and/or Leaf and Yard Waste Drop-Off Service to Secure a Contract with a Single Hauler.

Rather than look at leaf waste as a single component and service, GF recommends evaluating leaf waste services as a component of a municipal-wide waste management system. The Township could release a competitive request for proposals (RFP) or bid specification to secure curbside residential waste, recycling and leaf waste collection services for the entire Township. By competitively bidding waste, recycling and leaf waste together for the entire Township, the Township can lower the cost paid per household to provide the level of curbside leaf waste services that is required by PADEP. The cost for leaf waste (and other services) is lowered (as compared to individual homeowner subscriptions) because several haulers will compete for a multi-year service contract that includes waste collection, recyclables collection and leaf waste management services as one large contract.

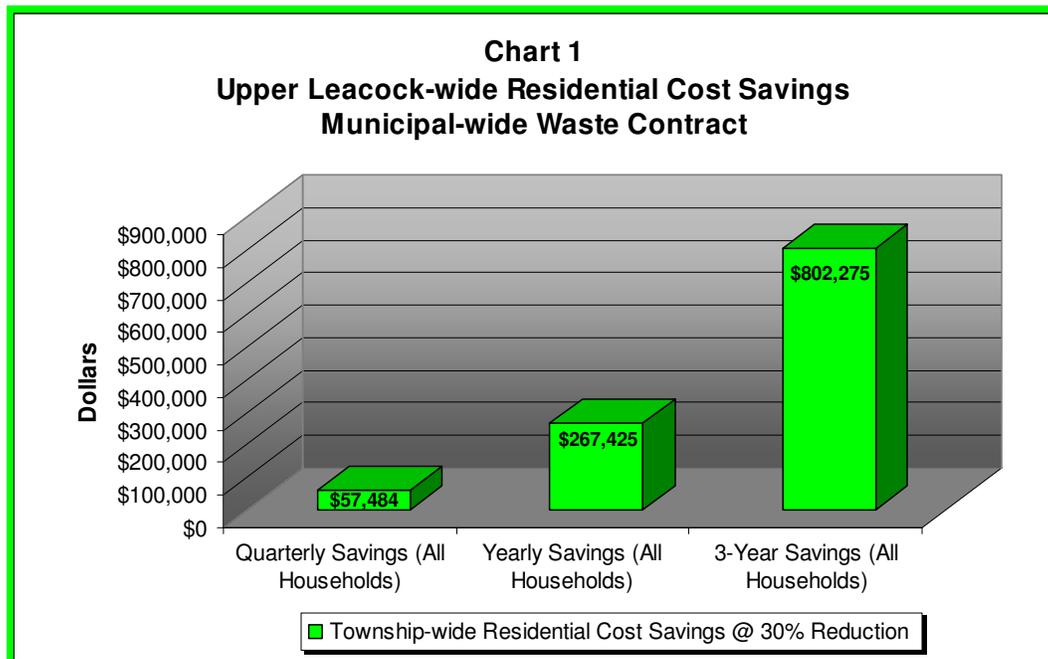
The bid could include an option for the hauler to locate and service one or more roll-off containers for collection of leaves and/or specified yard wastes, which would serve as a supplemental leaf waste drop-off. If the roll-off service (which serves as a temporary leaf waste drop-off point) is provided to residents at least once per month, the Township would only be required to offer curbside leaf and yard waste service once in the spring and once in the fall (to maintain compliance with Act 101 for leaf waste management). Drop-off location(s), materials and schedule/service arrangements should be specified in the RFP or bid documents.

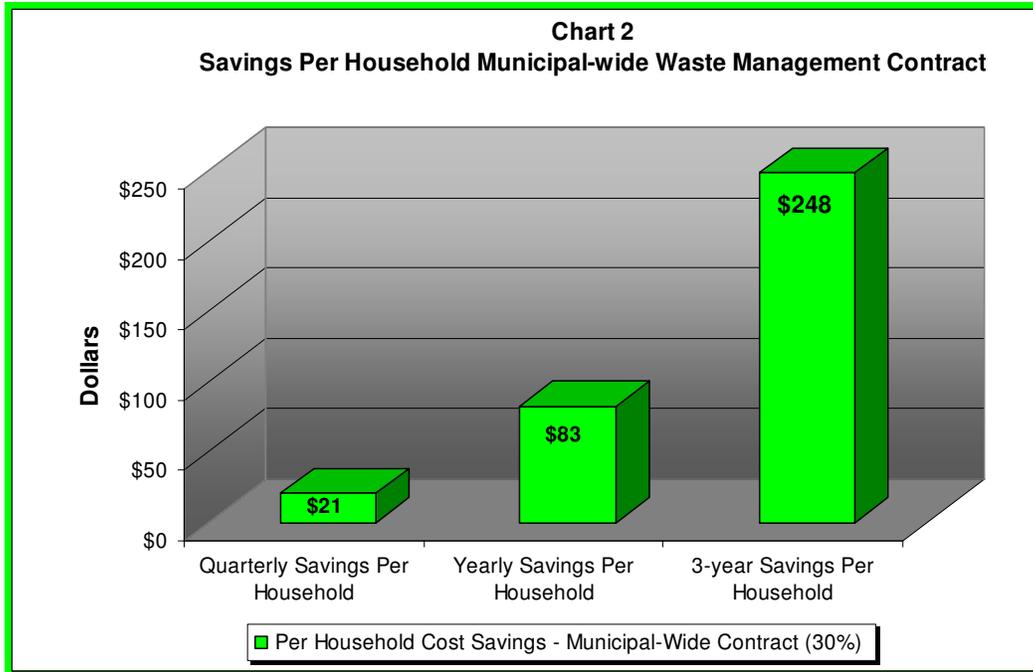
6.1.1 Single Hauler Contract Cost Analysis

GF conducted a preliminary financial comparison of current trash and recycling costs and projected costs for a contract collection program (refer to **Appendix B**). GF compared actual hauler costs from haulers servicing Upper Leacock Township residential establishments with cost information provided by the Lancaster County solid waste authority for single hauler contract collection programs. It is noted that Goods Disposal is the private hauler with the majority of households in the Township. Goods Disposal has a good reputation and their rates are about \$69 per quarter or \$276 per year:

- Bulky items are an extra charge (fee depends on item)
- Trash is collected once per week
- Commingled recyclables are collected once per week in a separate truck

Comparing current private subscription household trash rates with cost information provided by the LCSWA, the cost savings per household will be about 30 percent under a new single contract collection program. The actual cost savings will vary for some households because residents pay different rates depending on their hauler. None of the private haulers in Upper Leacock Township currently offers a trash rate as low as the contracted rates seen in Lancaster County. Using a 30 percent cost savings, GF estimates a **municipal-wide saving of approximately \$800,000** across all households in the Township (refer to Chart 1). Chart 2 shows the estimated savings households will realize each quarter, each year and over the 3-year contract term in a single-hauler program. Importantly, more service (e.g. bulky item collection at no additional cost) will be provided at the lower residential rate under the contract.





6.2 Intermunicipal Arrangements for Municipal Leaf Waste Collection

The Township may enter agreements with any willing municipality that has leaf collection equipment (preferably high-volume capacity leaf vacuums) and possibly yard waste collection equipment (e.g. waste packer truck) and staff to collect leaves and/or yard wastes. Through execution of intermunicipal arrangements, the bidding process for service is not required.

6.3 Intermunicipal Arrangements for Residential Leaf Waste Drop-off at an Existing Municipal Facility

The Township can work with neighboring Townships that have composting facilities to secure authorization for Upper Leacock residents to take their leaves, brush and other yard wastes. PADEP prefers some form of written authorization for these shared arrangements and this is also recommended by GF. Manheim Township should be contacted concerning shared use of their compost facility.

6.4 Bidding for Leaf and Yard Waste (Only) Collection and/or Drop-Off Services

The Township can issue an RFP or bid for leaf waste collection services only. This municipal bid package would not include curbside trash service or other recycling services. The bid specification must at least include the materials included under “leaf waste” as specified by Act 101: “garden residues, shrubbery and tree trimmings, and similar material, but not including grass clippings.” At least one spring collection and one fall collection is needed to meet PADEP policies, in conjunction with the Township identifying and educating residents of at least one

residential leaf waste drop-off location (e.g. Martin and Martin Mulch). This approach can be used, but is not the preferred because the cost for bidding separately for leaf and yard waste services will be higher than if the Township bundles these services in a comprehensive waste collection and recycling bid package.

6.5 Bidding for Leaf and Yard Waste (Only) Drop-Off Services

The Township can supplement its curbside collection program with a convenient periodic leaf waste drop-off program (offered at least once per month). The leaf and yard waste drop-off program can be accomplished by bidding (or simply paying a hauler directly) for roll-off container service for the collection of leaf and yard waste and delivery to an approved compost facility.

The service proposal could request the hauler to provide an empty 30 to 40-cubic yard roll-off container and require pick up the roll-off container when filled. Drop-off location(s), materials and service schedules must be specified in the bid or otherwise confirmed with the hauler. The acceptable materials and material preparation must be clarified to Township residents and explained to the hauler or noted in the bid specification (if bidding is used). Materials could include leaves and/or specified yard wastes (e.g. tree trimmings, shrubbery, etc.). When using a roll-off to collect leaf and yard waste, it is recommended residents are required to either bag materials in paper bags and/or use hard containers and place a maximum length and diameter on materials (e.g. max 6” diameter and max 36” length). Plastic bags should be prohibited.

Most feasibly, drop-off leaf waste services would be included as an option in a bidding scenario that would also include bidding for curbside trash and recyclables collection services. A roll-off drop-off service could be used to supplement the curbside collection service, but is not required or recommended due to cost. A roll-off service provides a minimal and even inconvenient level of service, and therefore is typically only a good option in municipalities with no other processing options. The Township has access to facilities like Martin Mulch, Manheim Township and local farms.

6.6 Develop and Operate a Public Leaf and Yard Waste Composting Facility

Identify a 5 – 10 acre site for development into a public compost facility. The compost facility could be operated by the Township and used as a place to process leaf and yard waste from the Township (and even surrounding municipalities). The Township could distribute quality finished compost products (sold per cubic yard) back to businesses (e.g. landscapers) and residents in the region. A Township-operated compost facility should be supported through multi-municipal sharing arrangements. Some of these concepts include:

- Shared planning effort
- Shared land/land procurement
- Shared Section 902, Grant Application(s) submittals for costs associated with the facility
- Shared staff from participating municipalities to operate the facility

- Shared costs for equipment/processing (possibly split according to the quantity of material requiring processing for each participating municipality)
- Shared educational material development pertaining to the compost facility
- Shared Recycling Grant application

As reviewed in Section 4.0, GF does not feel that the Township should pursue the development of a new compost facility in the Township at this time.

6.7 Ordinance Revisions Targeted for Leaf Waste Management

PADEP requires Upper Leacock Township to implement an ordinance to prohibit open burning of certain materials, including recyclables and leaf wastes. PADEP also requires that the Township make some revisions to the existing ordinance to clarify curbside leaf waste collection requirements. As confirmed by the Township Solicitor, GF recommends recycling program details be incorporated through the “Municipality’s Policies and Procedures” document associated with the recycling ordinance for waste and recycling. The Township can require haulers to collect leaf waste curbside (as defined by Act 101) once per month or once in the spring and once in the fall, provided a supplemental leaf and yard waste drop-off facility is identified for use by Township residents at least one day per month. Requiring this service, and enforcing that haulers comply, may ultimately result in higher collection costs for the haulers, which in turn are passed down to the residents. Increased trash bill rates could result in public outcry. It is difficult to oversee the activities of nine haulers in the current system, and hauler enforcement will continue to be challenging regardless of how the ordinance is revised.

7.0 RECOMMENDED LEAF WASTE MANAGEMENT STRATEGY

Based on GF’s review of Upper Leacock Township’s existing waste management programs, GF recommends the following baseline program structure and strategies for implementing a cost-effective and comprehensive leaf and yard waste management system. As notified by PADEP, the Township is out of regulatory compliance with its leaf waste management program and must implement ordinance and program changes or risk forfeiting Recycling Grants and/or risk other penalties. PADEP does not feel the current program complies with Act 101 and also has indicated that they do not feel the current system can be effectively implemented and enforced. GF feels strongly that economically sound and feasible planning of leaf waste management services must be done on a municipal-wide level and must consider integrated waste management and recycling as a crucial part of the planning process. In other words, improving leaf waste services should look beyond simply collecting leaves and similar items. GF’s baseline leaf waste management strategy is provided in the following bullets and can be used as a planning guideline for the Township as it investigates and makes decisions on their leaf waste and municipal waste programs:

- Form a **Waste Management Committee** and meet quarterly to address leaf waste and waste management issues so that informed decisions can be made on an ongoing basis.

At a minimum, the Committee should include the Recycling Coordinator and at least one elected official.

- **Issue a Request for Proposal (RFP) or bid to competitively secure a single hauler/collector curbside residential waste, recycling and leaf waste collection services for the entire Township.** Evaluate designation of a “trash collection district” for the contracted collection services. Leaf waste collection can be provided using waste packer vehicles that effectively compact leaf waste.
- **Implement an ordinance to prohibit burning but provide residents disposal/processing alternatives** to burning so they can properly manage leaf and yard waste in an environmentally and socially responsible manner. The Township should work to develop the following disposal and processing options for leaf and yard wastes:
 - **Improve curbside yard waste collection services** under a municipal-wide contract. The new program could include distribution and use of a dedicated residential yard waste container at least 55-gallon capacity. Provide at least four curbside collections of leaf waste in the fall and two collections in the spring.
 - **Establish yard waste tipping arrangements for curbside collected yard waste** with West Earl Township and their Board of Supervisors. Martin and Martin mulch is a private facility that accepts residential drop-off and curbside collections and should be used if tip fees and transportation costs are favorable.
 - **Direct residents to utilize the Manheim Township Compost Park** for residential leaf and yard waste drop-off. Upper Leacock Township should clarify the operating requirements and educate residents about the Manheim Township yard waste drop-off facility, Martin & Martin Mulch and any other viable drop-off options within 15 miles of the Township. It is recommended Upper Leacock Township obtain some form of written authorization with compost facilities to have a defined arrangement and as supporting documentation for PADEP to validate drop-off sites and processors are available to the Township.
 - **Identify at least three (3) farms that will accept leaves.** Identify a dedicated leaf drop-off area at each farm (e.g. use orange snow fencing). The Township should complete the short application contained in the Permit-By-Rule Guidelines for the farmers and then have them sign the form provided they are agreeable. Farmers must submit a soils conservation and nutrient management plan as part of their application.
 - The most cost effective component of a composting program is **backyard composting**. Backyard composting should be encouraged through educational materials including seminars, websites, newsletters, etc.

NOTE: Developing a variety of leaf and yard waste outlets as viable processing options will require the Township increase educational efforts to assure residents are aware of the leaf and yard waste processing options available to them.

- **Revise the Recycling Ordinance to meet PADEP policies for leaf waste management in conjunction with a revised waste management system.** Include a minimum curbside collection frequency of one spring collection and one fall collection for leaf waste, but assure the actual number of curbside collections provided is fair, but economically feasible. It may be appropriate to revise the ordinance again if substantive changes are made to the waste management program. It is not recommended the Township simply revise ordinances to meet PADEP and Act 101 of 1988 leaf waste requirements. This approach will not ensure all haulers are providing curbside leaf waste collection services in accordance with Act 101 of 1988.
- **It is recommended the Township pay the disposal tipping fees for waste as an incentive** to proactively increase recycling to avoid disposal costs. These savings can be passed on to residents and help stabilize contract collection system costs. The LCSWA currently bills the municipality monthly \$71 per ton for municipal waste flowed to the transfer station. At \$71 per ton and 1,400 tons generated annually, the Township will pay \$99,400 annually for disposal, but will receive a 15 percent rebate each quarter provided Township waste is flowed to LCSWA transfer/disposal facilities.
- **Designate one or more enforcement officers**, as supported by the ordinance and/or “Municipality’s Policies and Procedures” to enforce trash and recycling with the power to issue citations for specified offenses. Work closely with local police to support enforcement efforts.

APPENDICES

Appendix A – Listing of Private and Public Compost Facilities in Lancaster County
Appendix B – Preliminary Financial Analysis: Single Hauler Contract

Lancaster County Composting Directory



The information in our compost facility directory is based on information provided by composting and recycling professionals throughout Pennsylvania. Approximate miles from Upper Leacock Township are shown in bold.

Private:

<p>A & M Compost Corp. 2022 Manheim Road Manheim, PA 17545</p> <p>Contact: J P Mascara Phone: (717)-664-2073</p> <p>18.53 Miles</p>	<p>Product: Compost:</p> <p>Availability: For Sale Distribution Locations: Lancaster County and others</p>
<p>Fisher's Greenhouse 3817 - A Ridge Road Gordonville, PA 17529</p> <p>Contact: Joseph Fisher Phone: (717)-768-8228</p> <p>URL: http://www.fishersflorist.com</p> <p>6.96 Miles</p>	<p>Product: Compost</p>
<p>J. Robert Keller 952 Temperance Hill Road Lititz, PA 17543</p> <p>Contact: Robert Keller Phone: (717)-665-7462</p> <p>12.68 Miles</p>	<p>Product: Compost</p>
<p>Robert Hoffines Farm 184 Stackstown Road Marietta, PA 17547</p> <p>Contact: Robert Hoffines Phone: (717)-426-3871</p> <p>25 Miles</p>	<p>Product: Compost Feedstocks: leaves, grass clippings</p> <p>Availability: Used by municipality</p>
<p>Stoner Farm 3207 Bowman Road Lancaster, PA 17601</p> <p>Contact: Donald Stoner Phone: (717)-898-7311</p>	<p>Product: Compost Feedstocks: leaves, grass clippings, yard waste</p>

13.34 Miles

Municipalities:

Columbia Borough
308 Locust Street
Columbia, PA 17512

Contact: Ron Miller
Phone: (717)-684-2654

E-mail: ronmiller@comcast.net

Product: Compost
Other Products: mulch
Feedstocks: leaves, grass clippings, yard waste

Availability: Municipal use

19.59 Miles

Lancaster Township Maintenance Facility
Lancaster, PA 17603

Contact: Bob Eckenrode
Phone: (717)-293-1733

E-mail: reckenro@twp.lancaster.pa.us
URL: <http://www.twp.lancaster.pa.us/>

Product: Compost (1,000-5,000 yards³ per year)
Feedstocks: Leaves, grass clippings, yard waste, wood chips

Availability: Municipal use

Manheim Township
2775 Oregon Pike
Lancaster, PA

Contact: Wendy Herr
Phone: (717)-569-6406, ext.129

E-mail: publicworks@manheimtownship.org
URL: <http://www.manheimtownship.org/pworks.cfm>

Product: Compost/ mulch
Feedstocks: leaves, grass, yard trimmings, trees

Availability: Sale to residents and municipal use

5.31 Miles

Manor Township
950 W. Fairway Drive
Lancaster, PA 17603

Contact: Bill Laudien
Phone: (717)-397-4769

E-mail: laudien@manortwp.org
URL: <http://www.manortwp.org/>

Product: mulch
Feedstocks: leaves, grass, yard trimmings, trees

Availability: Municipal use

12.97 Miles

Salisbury Township
5581 Old Philadelphia Pike
Gap, PA 17521

<p>Contact: Kirsten Wanner Phone: (717)-768-8059</p> <p>Email: twp@comcast.net URL: http://www.salisburytownship.org</p> <p>11.68 Miles</p>	
<p>West Earl Township 157 W. Metzler Road Brownstown, PA 17508</p> <p>Contact: Sylvan Fisher Phone: (717)-859-3201</p> <p>E-mail: tbeever@westearltownship.org</p> <p>3.97 Miles</p>	<p>Product: Compost/ mulch Feedstocks: leaves, grass, yard trimmings, trees</p> <p>Availability: Municipal use</p>

Source: proprecycles.org.
Gannett Fleming added approximate miles from Upper Leacock Township.

Upper Leacock, Lancaster County - Waste Collection System Cost Comparison

Municipality	Households
Upper Leacock Township	2,777

	Quarterly Cost & Est. Savings Per Household (\$)	Yearly Cost & Est. Savings Per Household (\$)	Cost & Savings Over a 3-year Contract
Current Average Cost For Households	\$69.00	\$321	\$963
Averaged Current Cost For All Occupied Households	\$191,613	\$891,417	\$2,674,251
20% Savings	\$153,290	\$713,134	\$2,139,401
25% Savings	\$143,710	\$668,563	\$2,005,688
30% Savings	\$134,129	\$623,992	\$1,871,976
Township-wide Residential Cost Savings @ 30% Reduction	Quarterly Savings (All Households)	Yearly Savings (All Households)	3-Year Savings (All Households)
	\$57,484	\$267,425	\$802,275
	Quarterly Savings Per Household	Yearly Savings Per Household	3-year Savings Per Household
Averaged Current Cost Per Individual Household	\$69.00	\$276	\$828
20% Savings	\$55.20	\$220.80	\$662.40
25% Savings	\$51.75	\$207.00	\$621.00
30% Savings	\$48.30	\$193.20	\$579.60
Per Household Cost Savings - Municipal-Wide Contract (30%)	\$21	\$83	\$248

NOTES: Current average cost derived from Actual 2008 costs from Upper Leacock Township Haulers. Four (4) hauler prices for **once per week service** were obtained and averaged:

Lebanon Farms: \$324 per yr. (wkly trash & recycling) plus 1 bulky pickup and two leaf waste. Include 1 bulky item and two leaf waste pickups (two bags per pickup)	Waste Mngmt: \$360 per yr. toter or up to 6 containers. (\$50 activation fee) Include 1 bulky and two leaf waste pickups	Reams Disposal - \$295 Per year Include 1 bulky and two leaf waste pickups	Goods Disposal: \$317 per yr. - trash & recycling Include 1 bulky and two leaf waste pickups Bulky
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Chart 1
Upper Leacock-wide Residential Cost Savings
Municipal-wide Waste Contract

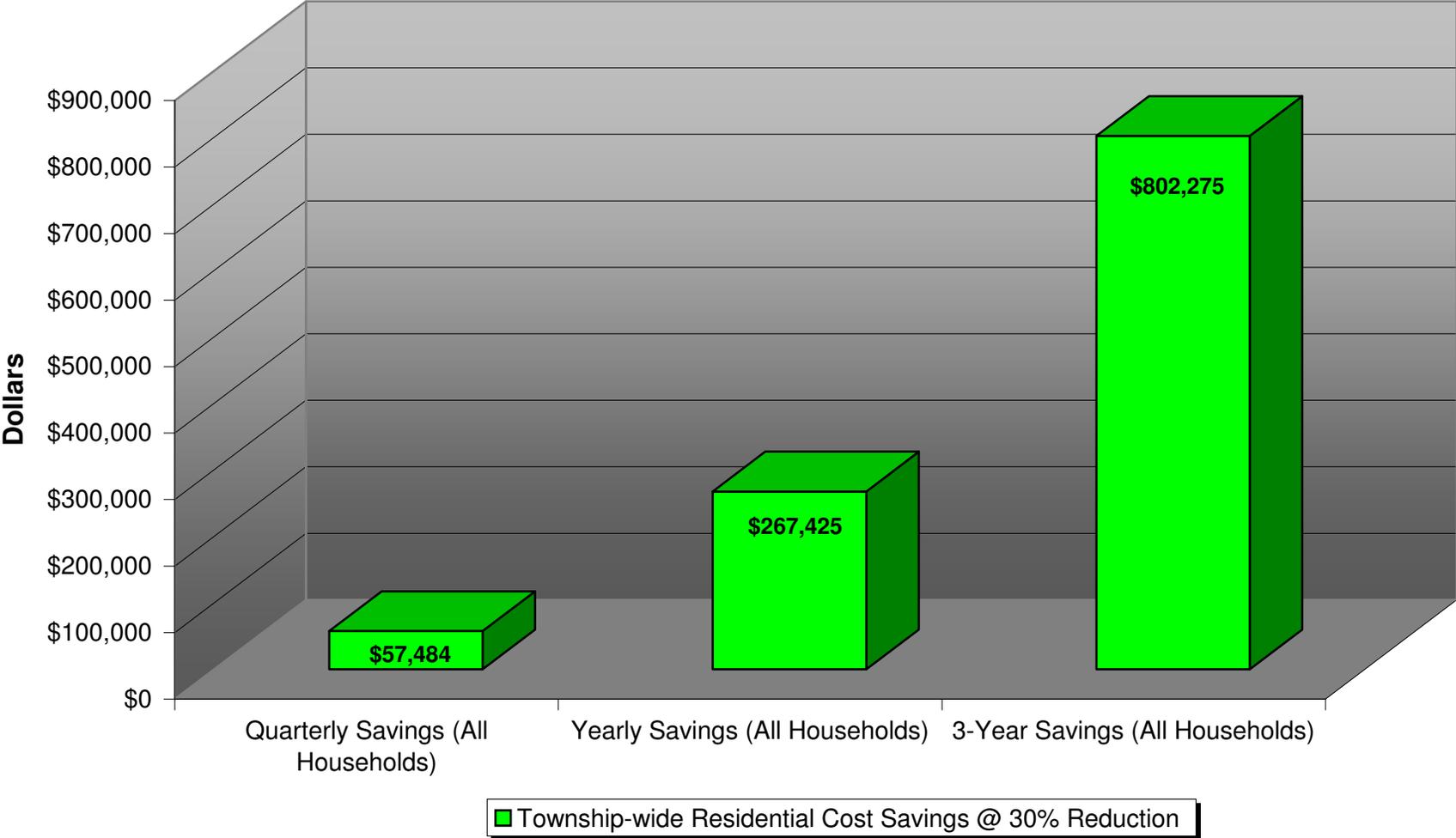
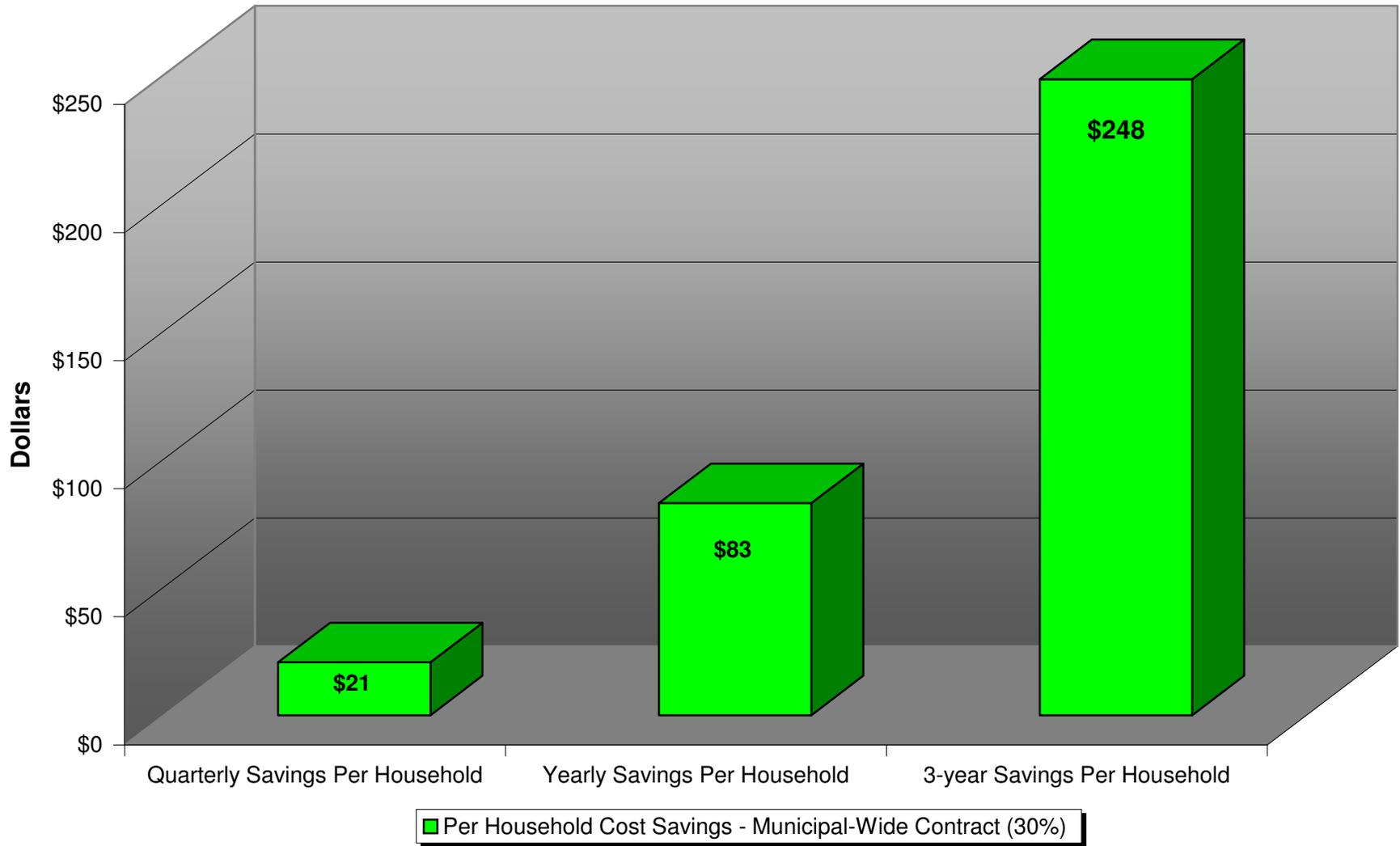
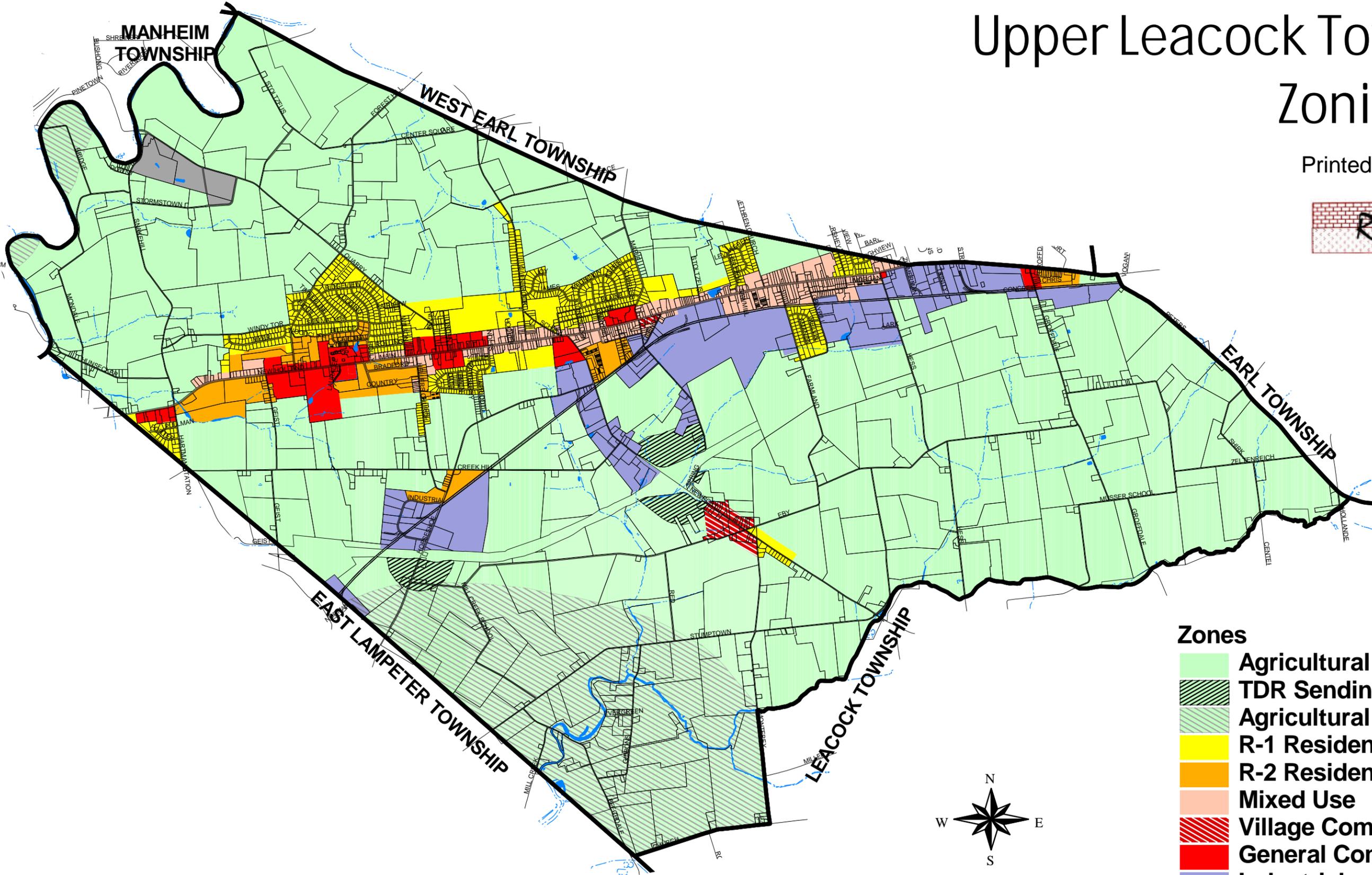


Chart 2
Savings Per Household Municipal-wide Waste Management Contract



Upper Leacock Township Zoning Map

Printed: July 14, 2008



- Zones**
-  Agricultural
 -  TDR Sending
 -  Agricultural & Airport Safety
 -  R-1 Residential
 -  R-2 Residential
 -  Mixed Use
 -  Village Commercial
 -  General Commercial
 -  Industrial
 -  Industrial & Airport Safety
 -  Quarry

