

**RECYCLING TECHNICAL ASSISTANCE**  
**Project #525**

**FINAL REPORT**

**SINGLE HAULER CURBSIDE WASTE AND RECYCLABLES  
COLLECTION SYSTEM EVALUATION**



**Williams Township**  
*Northampton County, PA*

**APRIL 2013**

**Sponsored by the Pennsylvania Department of Environmental Protection through the  
Pennsylvania State Association of Township Supervisors**

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**WILLIAMS TOWNSHIP  
NORTHAMPTON COUNTY, PENNSYLVANIA**

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COLLECTION SYSTEM EVALUATION**

*Project Completed By:*



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## 1.0 STATEMENT OF PROBLEM

This study was conducted for Williams Township in Northampton County, Pennsylvania under the Recycling Technical Assistance program that is sponsored by the Pennsylvania Department of Environmental Protection (PADEP) through the Pennsylvania State Association of Township Supervisors (PSATS). Williams Township requested a solid waste expert to assist the Township in determining if switching to a single contracted waste company can increase recycling, increase recyclables revenue for the Township, and decrease roadway wear and tear (and resulting maintenance costs), while offering other financial and environmental benefits.

## 2.0 SUMMARY OF WORK

The following subsections summarize the work conducted by Gannett Fleming under the approved project tasks, including review of the existing solid waste management program.

### 2.1 Existing Solid Waste Management Program Review

According to the 2010 U.S. Census, the Township population was 5,884 living in 2,363 occupied housing units. The existing demographics, zoning and a curbside solid waste management program are structured as follows:

- **Predominant Zoning (see Appendix A, Zoning Map)**
  - Low Density Residential (LDR)
  - Agricultural (A)
  - Many areas fall under “steep slopes”
- **Ordinance Updates** (existing recycling and burning ordinances do not comply with Act 101 of 1988)
  - Mandatory Recycling Ordinance (currently being drafted)
  - Ordinance Prohibiting Open Burning (currently being drafted)
- **Housing**
  - Average occupied household size is 2.59
  - New development is primarily townhouse and condominiums
    - Under existing contracts for waste and recycling services
- **A portion of homeowners contract with one of the following private haulers for Curbside Waste and Recycling Services:**
  - Chrin Hauling, Inc.
  - Swint Hauling & Disposal Service, LLC
  - J.P. Mascaro & Sons
  - Patrick’s Disposal & Recycling
  - Raritan
  - Waste Management
  - Advanced Disposal (IWS)

- **Solid waste service pricing obtained from current trash bills from two waste hauling companies operating in Williams Township included:**
  - \$108.00 per quarter for unlimited trash disposal plus recycling; or \$432/yr.
  - \$86.00 per quarter for one 95-gallon trash container per week and one 64-gallon recycling container collected every two weeks. There is an added charge of \$3.00 per bag over the 95-gallon trash limit. The base fee is \$344/yr. with additional bag fees applied to customers who utilize additional bags.
  
- **Single-hauler waste collection contracts are common in Northampton County and include these known contract programs:** Allen Township, Bangor Borough, City of Easton, Forks Township, Freemansburg Borough, Glendon Borough, Hanover Township, Hellertown Borough, Nazareth Borough, North Catasauqua Borough, Northampton Borough, Palmer Township, Pen Argyl Borough, Plainfield Township, Portland Borough, Tatamy Borough, Upper Mount Bethel Township, Walnutport Borough, and Washington Township.
  
- **Solid waste service pricing obtained from municipalities within Northampton County with single-hauler contract collection included:**
  - Northampton Borough: Once-per-week refuse and single stream recycling plus one bulk item per week collected the same day. The cost is **\$305.00 per household per year (2013)**, or **\$280.00 per household per year with early pay discount**. Northampton Borough recovered three (3) times the recycling per person or per household in 2011 compared to Williams Township.
  - Plainfield Township: Once-per-week trash collection is provided using 5 to 50-gallon containers weighing no more than 40 lbs. Comingled recyclables collection is provided every other week and a bulky item can be set out on recycling days. The cost is **\$270.00 per household per year (2013)**, or **\$260.00 per year with early payment**. Plainfield Township recovered nearly three (3) times the amount of recycling per person or per household in 2011 compared to Williams Township.
  - Palmer Township: Once-per-week trash collection and single stream recycling collected in 96 gallon containers. The cost is **\$280.00 per household per year (2013)** and annually includes four (4) bulky item pick-ups, two (2) yard waste collections, and two (2) white goods collections. Palmer Township recovered over two (2) times the amount of recycling per person or per household in 2011 compared to Williams Township.

**Single-stream recycling**, where container recyclables (e.g. plastics, aluminum and glass) are collected together in one container with paper items, is a common recyclables collection format.

- **Williams Township Recycling Trends, as shown in Appendix B, Recycling Analysis, Chart 1 and Chart 2:**
  - Curbside & drop-off recycling tons decreased markedly from 2006 – 2011.
  - Reported 247.5 tons of tons of curbside & drop-off recycling in 2011.

- Per capita recovery in 2011 is 84.13 lbs.; well below the per capita average for Northampton municipalities.

## 2.2 Existing Solid Waste Management Program Findings

### Ordinances

- Recycling and burning ordinances are being updated to conform with Act 101 of 1988. Recycling ordinances are difficult to enforce in a private subscription waste system because:
  - Multiple haulers are difficult to track and oversee.
  - A number of households do not secure a waste hauler.
  - Municipal staff levels are insufficient to enforce curbside waste management.

### Solid Waste and Recycling Performance

- The annual per capita recycling rate (84.13 lbs.) for curbside and drop-off recycling is well below average when compared to other Northampton County municipalities (refer to **Appendix B, Recycling Analysis**). Measured against single hauler programs, the Township recycling rate is very poor. Some reasons for the poor recycling rate include:
  - There is a high variability within the Township regarding recycling methods, accepted material types, and collection schedules provided by the haulers. The associated confusion, inconsistent recycling education, and even container size and inconvenience diminishes recycling participation.
  - Some households do not subscribe for, or pay for, trash or recycling service. Non-paying/participating households are more likely to use improper disposal methods for waste materials.
  - Poor data recovery. This problem is magnified by the complexity in recovering data from multiple hauling companies.
  - Recycling data from condominium and townhouse associations currently under contract with a waste hauler may be missing from reported data.
  - A portion of residents subscribe for twice-per-week trash collection, which increases costs and decreases recycling participation (Collection Efficiency, Strategies for Success, EPA 1999).
- Based on a review of homeowner trash bills in the Township, the costs for trash and recycling service for some homeowners is \$344 per year (plus added fees for extra set outs) to \$432 per year. Notably, these costs are conservative because the cost of bulky item service is not included and can cost \$25 to \$75 per pick up in a private subscription program. These conservative costs are 11% to 37% higher than the known costs for contract collection in nearby municipalities with single-hauler contract collection (see **Appendix B, Recycling Analysis, Chart 3**). Higher costs for multi-hauler system are often attributed to:
  - Inefficiencies in multiple-hauler collection routes and schedules increase operation costs for each hauler, and these are passed on to the customer.
  - The type of private sector competition may not effectively drive the cost for waste collection and recycling services down.

- It is rare that haulers in a multi-hauler system lower customer costs when fuel prices decrease. Consequently, customer costs in multi-hauler systems may escalate based on a CPI index but may not accurately reflect fuel costs and actual operational costs.

Compressed Natural Gas (CNG) fueled waste trucks are now providing service in the region. CNG is an environmentally clean alternative to gasoline. As of February 2012, CNG fuel is \$1.50 lower compared to the Diesel Gallon Equivalent (DGE); which results in a substantial operating cost reduction (i.e. these savings can be passed to the customer). If the existing multi-hauler collection program continues, it would not be expected the residents will realize any of the operation costs savings resulting from CNG efficiency, even if CNG trucks are utilized. Via competitive bid, haulers with CNG capability will provide a competitive price that accounts for efficiencies gained through reduced fuel costs. Fuel savings can be passed to each household as part of the contractual price agreement.

### 2.3 Environmental & Community Impacts From Multiple-Hauler Collection

There are distinct differences in how waste collection occurs in a contracted single-hauler system when compared with a multiple-hauler waste system. These differences result in inefficiencies that increase fuel and natural resource consumption, thus magnifying impacts to air, water, soil, plants and animals. These negative impacts are not a result of negligence by any individual hauler but are direct outcomes from a system that does not optimize collection efficiency and recyclables recovery. When route, labor and equipment are not optimized there is an increase in the number of miles traveled, and number of trucks utilized to collect trash and recyclables. Nearly always, fewer total recyclables are collected in a multi-hauler system when compared with a single-hauler system. As fewer tons of recyclables are recovered, the demand on natural resources increases. Many costs for environmental impacts are not addressed in trash bills, but are absorbed by the local and regional community in local, state and federal taxes and other fees paid by individuals.

**Community impacts** exacerbated by the multi-hauler system in the Township include:

- **Cost.** Total waste system costs are higher in multi-hauler subscription systems (see Appendix B, Recycling Analysis Chart 3). Based on discussions with Waste Management, Inc. and Penn Waste, Inc., in 2012 15% to 25% of households do not subscribe for trash service in private subscription waste systems and another 10% do not pay their bills. The paying 70% of the customers partially subsidize the true cost of 100% of the collection, disposal and profit margin. Indirect costs are cumulative over time and include: roadway repairs, health care costs, and environmental costs.
- **Health Impacts.** Hydrocarbons degrade air, water, and soil quality and adversely impact all living organisms. CNG is an important consideration.
- **Safety.** Increased trash trucks traveling local roads increases public safety risks.

- **Community Aesthetics.** Trash and recycling containers are set out at the curbside nearly every day of the week in most areas of the municipality.
- **Noise.** Truck noise is a common complaint in multi-hauler trash systems.
- **Roadway.** According to American Association of State Highway and Transportation Officials (AASHTO), full garbage trucks have loading factors equivalent to 11,700 cars and appreciably accelerate road damage. Passenger car impact is negligible.
  - Organized truck routes in a single-hauler collection system reduce roadway degradation over the life of the roadway and reduce associated costs.
  - For the average driver, rough roads add \$335 annually to typical vehicle operating costs. Philadelphia is calculated as \$525 per year per driver (Rough Roads Ahead, Fix Them Now or Pay for it Later. AASHTO and TRIP, 2009)

### 3.0 SOLUTIONS

These subsections provide recommendations for Williams Township to improve its curbside waste collection and recycling program including the ability to comply with the mandated recycling requirements prescribed in Act 101 of 1988 and the PADEP. The basis of the recommendations includes the following:

- Williams Township is an Act 101 mandated community. It is not only required to provide waste management and curbside recycling for all occupied households, but also to enforce its program. Tracking and enforcing multiple hauling companies along with assuring residential participation in a multiple hauler system is extremely difficult. The Township is not currently staffed to enforce curbside waste and recycling in a way that will effectively assure Act 101 requirements are satisfied.
- A contractual arrangement with a single waste company establishes a legally binding service arrangement. An executed service contract effectively streamlines program implementation, accountability and enforceability. Residents will participate in the contractual waste system because each household receives an equitable bill for comprehensive waste and recycling services. This eliminates the incentive that is in place in the current multi-hauler system, where property owners do not subscribe for waste service to avoid a trash bill.
- In the existing system, a portion of households do not secure and pay for curbside trash services, and this has the following consequences.
  - The Township fails to comply with Act 101 of 1988 and corresponding regulations (e.g. Act 140 of 2006 that require via ordinance that all residents have waste and recycling service). This could impact future recycling grants.
  - There is an increased likelihood of improper trash disposal (e.g. sharing disposal with neighbors, using commercial dumpsters, or illegal dumping).
  - The paying trash customers are subsidizing the non-paying residents because they also generate waste that requires disposal at a cost.



- There are a number of negative impacts (financial, environmental, and community) that can be managed more effectively using a single-hauler contract.
- Competitive municipal bidding lowers the average cost for residential customers who currently have private subscription service for waste and recycling.
- Recycling performance is trending downward. It is expected there will be an immediate increase in recycling when a single-hauler contract is executed.
- Due to the inaccuracy of data collection in the current recycling program, the Township lacks a data baseline to guide system improvements or to objectively compare the current program with an alternative system.

### 3.1 Recommended Solutions/Course of Action

Gannett Fleming recommends Williams Township obtain pricing and service data from several haulers for a contractually-based municipal-wide trash collection program in order to compare the existing and proposed contractual waste system. Gather this data using the competitive municipal bidding process to assure qualified vendors respond and to maximize leverage so that a competitive price can be secured on behalf of residents. Gannett Fleming has provided a template solicitation document that may be used as the basis for developing a customized solicitation or RFP for the Township. The solicitation should include the following language and service components:

- A clause allowing the Township to “**reject any and all bids**” if the pricing and services data does not result in appreciable improvements to the existing system.
- Once-per-week 96-gallon trash cart service (base option). Twice-per-week trash is not recommended.
- Once-per-week single-stream recycling; one 64-gallon or 96-gallon cart/household.
- One bulky item collected per week with regular trash collection.
- One freon-containing item collected per year (call for service).
- Two (2) spring and two (2) fall collections of leaf wastes, for recycling.
- Request the hauler to establish designated trash districts so trash and recyclables collection occur once-per-week for any given area within the Township.
- Trash and recycling service at the Municipal Building, Schools, Library and other identified public facilities.
- Low-volume discount rate for elderly (provide number of households with elderly owner-occupants over the age of 65)

Gannett Fleming recommends the solicitation be reviewed by a solid waste professional prior to distribution to waste management companies to assure the final solicitation is structured in a manner to include comprehensive services that meet Act 101 requirements while assuring cost-competitiveness.



Additional recommended actions include:

- The Board of Supervisors should vote on whether or not to proceed with a solicitation for the purpose of obtaining the data needed to evaluate the proposed single-hauler alternative. The solicitation could be released in June, with a contract start date targeting September 2013 or early 2014.
- Assuming the Board agrees to solicit waste system service and cost information, the responses should be summarized, and a preferred hauling company identified. The services and costs of the preferred hauling company should be compared side by side with information from the current system, including costs from several residential trash bills.
  - A Public Meeting should be held to review the results provided through the competitive solicitation process. It is not recommended a public meeting be held regarding the curbside solid waste program, without having this information available.

#### **4.0 Conclusion**

The Township recently became required to implement and enforce comprehensive curbside residential waste, recycling and leaf waste collection in accordance with Act 101 of 1988 and Act 140 of 2006. Williams Township's recycling rate is below the majority of the County's municipalities and far below a portion of County municipalities with contract waste collection by a single waste service provider. In order to meet Pennsylvania State recycling requirements, the Township will have to increase its role in waste management. At a minimum, the Township will have to revise its solid waste and recycling ordinances to conform with Act 101 of 1988 and Act 140 of 2006 for curbside collection of waste, recycling and leaf waste. In addition to ordinance changes, the PADEP requires measures be in place to enforce the curbside waste and recycling program.

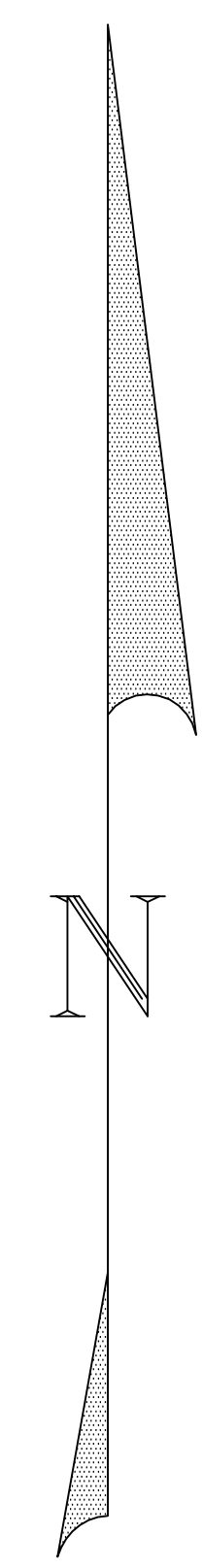
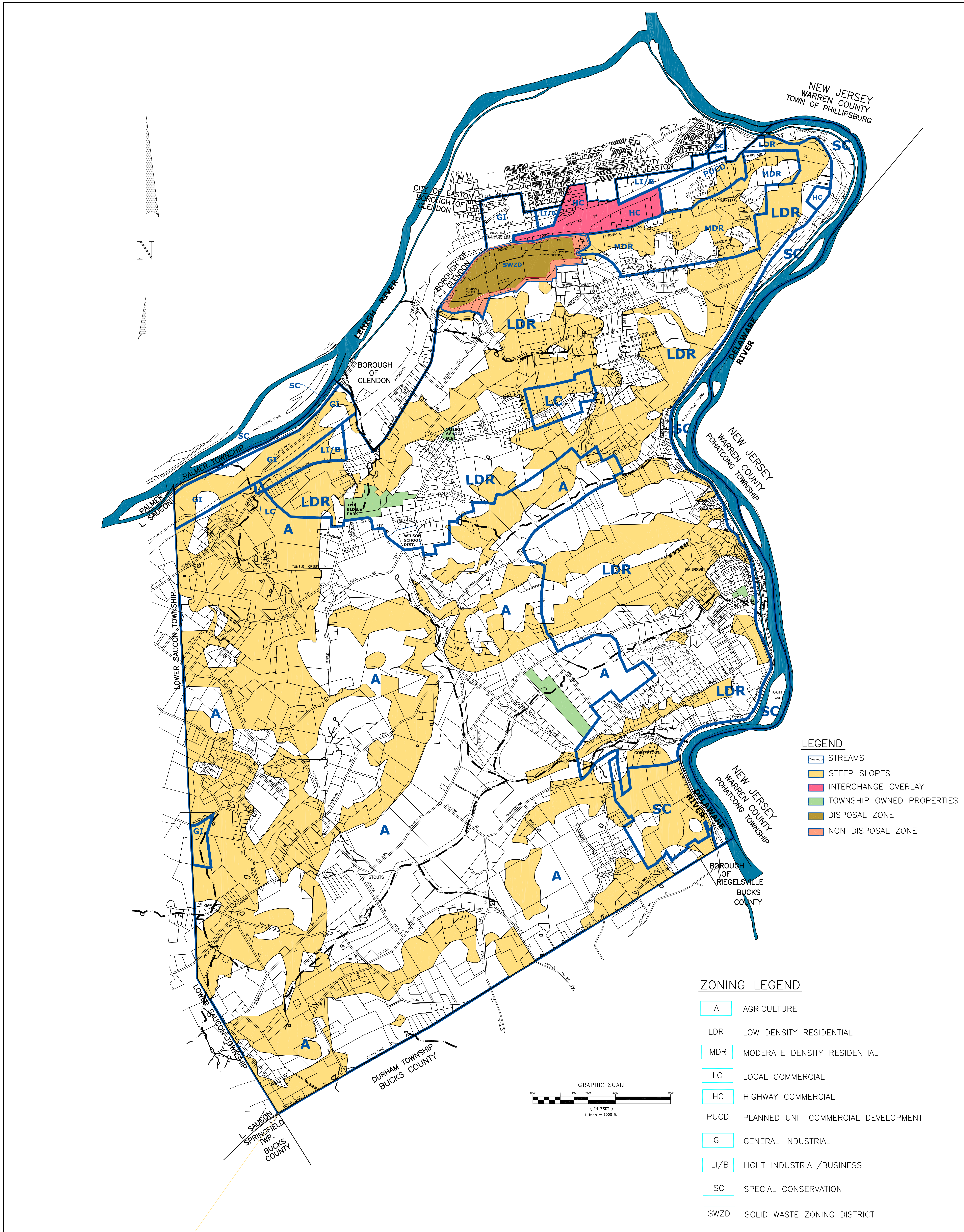
Due to recycling mandates, it is a logical time for the Township to collect and review data regarding the price and level of service that can be secured via municipal-wide contract with a competent waste hauling company. If the data resulting from the solicitation demonstrates a cost savings to residents for comprehensive waste and collection service, it is recommended the Township vote to execute the contract following review of the data at a public meeting. An executed waste collection contract will immediately place the Township and its staff in an improved position to effectively comply with its new waste and recycling requirements, and will increase diversion of waste from landfill.

If the Township does not proceed with a single hauler contract, it will become the Township's direct responsibility to ensure all households secure a waste hauler, and enforce that all residents and haulers comply with Act 101 of 1988 and Act 140 of 2006.

## **APPENDICES**

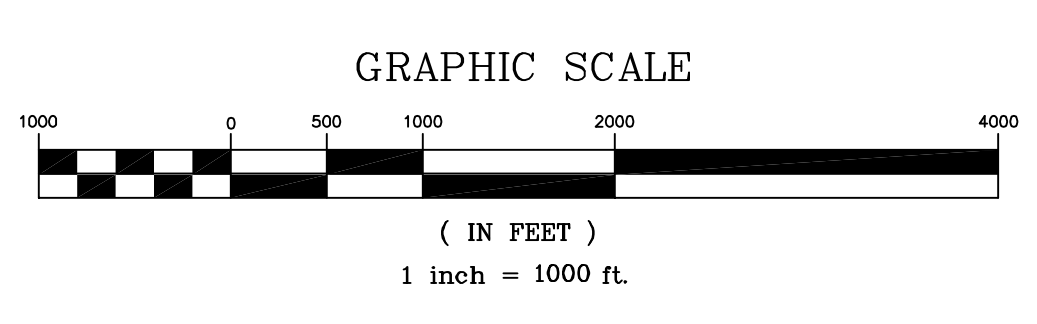
**Appendix A - Zoning Map**  
**Appendix B - Recycling Analysis**





- LEGEND**
- STREAMS
  - STEEP SLOPES
  - INTERCHANGE OVERLAY
  - TOWNSHIP OWNED PROPERTIES
  - DISPOSAL ZONE
  - NON DISPOSAL ZONE

- ZONING LEGEND**
- A AGRICULTURE
  - LDR LOW DENSITY RESIDENTIAL
  - MDR MODERATE DENSITY RESIDENTIAL
  - LC LOCAL COMMERCIAL
  - HC HIGHWAY COMMERCIAL
  - PUCD PLANNED UNIT COMMERCIAL DEVELOPMENT
  - GI GENERAL INDUSTRIAL
  - LI/B LIGHT INDUSTRIAL/BUSINESS
  - SC SPECIAL CONSERVATION
  - SWZD SOLID WASTE ZONING DISTRICT



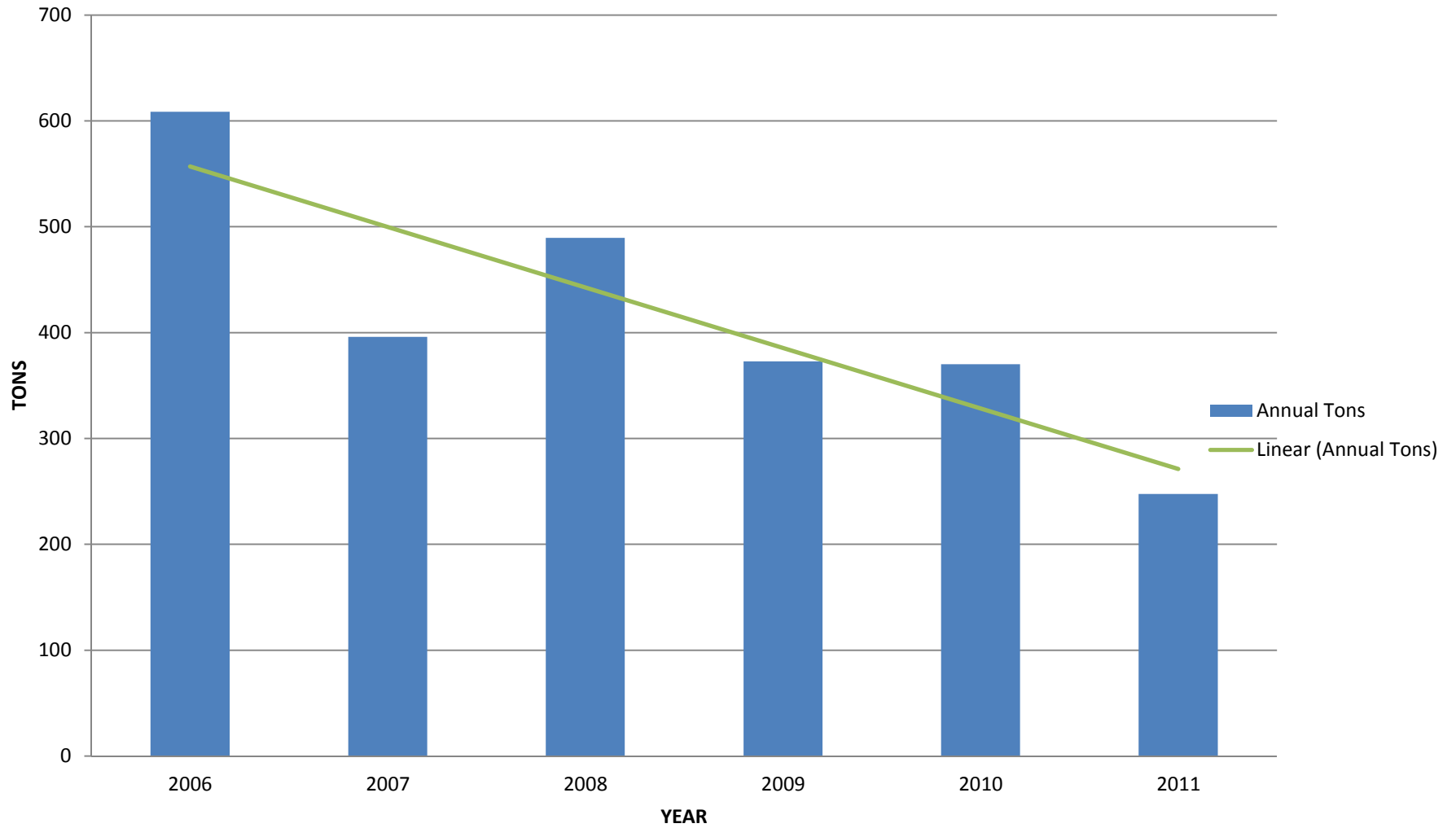
**HARTE ENGINEERING, INC.**  
 649 EAST BROAD STREET  
 BETHLEHEM, PA. 18018  
 (610) 865-6543

**WILLIAMS TOWNSHIP**  
**ZONING BASE MAP**  
 NORTHAMPTON COUNTY, PENNSYLVANIA

FILE NO.: C:\WILLIAMS-2009\2009 UPDATED ZONING MAP  
 DATE: FEBRUARY 11, 2009  
 SHEET: 1 OF 1

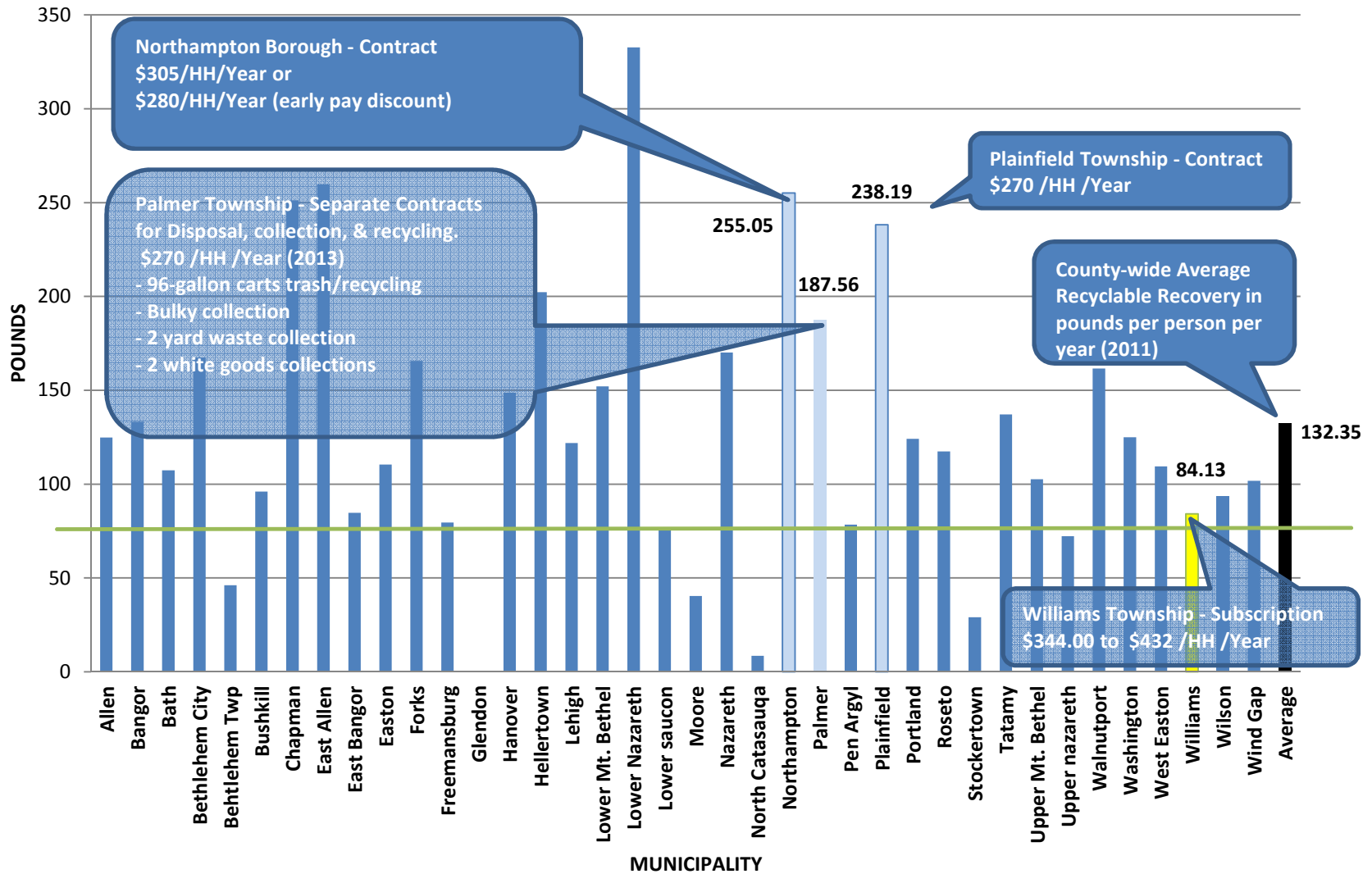


**Chart 1**  
**Williams Township, Northampton Co. PA**  
**Residential Curbside and Drop-off Recycling (no organics)**  
**2006 - 2011**



## Chart 2

### Municipal Recycling Comparison - Williams Township, Northampton Co. PA Reported Per Capita Curbside and Drop-off Recycling (no organics) (pounds/person) - Recovered for Recycling (2011)



### CHART 3

#### COST PER HOUSEHOLD PER YEAR

	Existing (1)	Contract (2)	Annual Savings (\$)	Annual Savings (%)
<i>Savings for contract X (w/ early bird discount)</i>				
Hauler A	\$ 432	\$ 280	\$ 152	35%
Hauler B	\$ 344	\$ 280	\$ 64	19%
<i>Savings for contract X (without early bird discount)</i>				
Hauler A	\$ 432	\$ 305	\$ 127	29%
Hauler B	\$ 344	\$ 305	\$ 39	11%
<i>Savings for contract Y</i>				
Hauler A	\$ 432	\$ 270	\$ 162	38%
Hauler B	\$ 344	\$ 270	\$ 74	22%

(1) Existing costs represent the minimum cost based on actual Williams Township residential trash bills. Actual total cost may be higher based on additional services not included in base price (e.g. extra bags, bulky items, etc.)

(2) Contract represent year 2013 contract price for residential waste and recycling service in Northampton County Municipalities.