RESIDENTIAL SOLID WASTE AND RECYCLING COLLECTION STUDY

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Executive Summary

Remington, Vernick & Beach Engineers (RVB) has been tasked with (1) examining the current methodology for trash collection in the Borough and (2) the evaluation of options to potentially institute a municipally managed waste collection system in the Borough of Lansdale. The Borough currently has no municipally based waste collection program, which requires residents to independently contract for this service. This study compares the various options available for trash collection and disposal including the options available to institute a municipally owned waste collection system in the Borough. It shall be noted that trash and waste collection shall include the collection and disposal of solid trash, recyclables, white goods, and biodegradable waste.

Three (3) main options were evaluated to determine which option is the most feasible to collect and dispose of the Borough's solid waste. The first option (Option 1) evaluated was to publicly bid and award a contract to an outside company for the collection, transportation, and disposal of solid waste and recycling materials. The second option (Option 2) evaluated was to have the Borough provide these services in-house and provide all equipment and labor necessary to accomplish this task. The third and final option (Option 3) evaluated was to keep the current plan in place which has the Borough's residents responsible for their own waste disposal.

SECTION 1

Background

The Borough of Lansdale currently has no solid waste collection program in place. Residents within the Borough are responsible to contract with a hauler for the disposal of their own waste. This means that they either transport their waste and dispose of it at a landfill themselves or hire a waste collection contractor to pick it up on a weekly basis. According to the estimated census count for 2013 there are approximately 16,408 residents living within the Borough with approximately 7,157 residential units.

The Borough of Lansdale is also home to approximately 1,130 commercial properties. These properties are also responsible for their own solid waste disposal. The Borough has several Borough owned properties that require solid waste collection. These areas include parks, municipal government sites, and streetscape cans in the downtown business area. Currently, the Borough pays a contractor to collect solid waste at these municipal sites.

In 2012, a trash hauler survey was conducted by the Borough of Lansdale which asked residents about their current solid waste collection plan. In this survey, residents were asked how much they pay monthly for solid waste collection. The results of this question have been summarized in the table below.

3. How much do you currently pay for trash removal and recycling per month?

Answer Options	Response Percent	Response Count
I do not pay	8.1%	128
Less than $10	1.3%	21
$11 - $20	12.4%	196
$21 - $30	49.1%	777
$31 - 40	12.7%	201
$41 - $50	4.4%	69
More than $50	12.1%	191
	answered question	**1583**
	skipped question	**38**

According to the results, nearly 50% of residents with in the Borough pay $21 to $30 a month for solid waste collection while 29% of residents pay over $31 a month. See Appendix B for a copy of the survey results.

Survey data also shows that there are four solid waste removal contractors operating within the Borough. Because of this, there is an increased amount of garbage and recycling trucks of varying sizes that traverse the streets and alleys of the Borough. Consequentially, the increased number of trucks causes increased wear on Borough alleys and roadways. Both the roads and alleys therefore experience faster degradation of the travel ways which equate to increased roadway rehabilitation costs for maintenance.

SECTION 2

PHYSICAL CONTRAINTS AND ASSUMPTIONS

Our office made several assumptions for the purpose of completing this study and accurately modeling the costs associated with each of the three options. Those assumptions include the following:

- It was assumed that contracted value for collection and disposal would not change for a period of three years, as waste disposal contracts usually last approximately three years. According to current municipal contracts for Municipalities located within Montgomery County with similar population and number of households as the Borough of Lansdale, the inflation rate for these contracts is about 10%.

- It was assumed that the Borough has the space to store its own compost and yard waste and the space to construct a building (pole barn structure) to store equipment and house personnel. It was also assumed that the Borough already has the equipment necessary to pick up bulk items and white goods. This equipment includes a back hoe and a pick-up truck.

SECTION 3

TIPPING FEE

The tipping fee is the cost to dump collected trash at a permitted disposal site. In order to estimate the annual tipping fee for the Borough, it was assumed that each resident produced 2.87 pounds of non-recyclable waste per day. This number came from a study conducted by the EPA in 2012.1

According to neighboring Municipalities who currently own and operate a solid waste collection program, the average tipping fee is $61 per ton. Based on the Borough's population data and a tipping fee of $61per ton of waste, it was determined that the annual tipping fee would be approximately $524,240.00 per year. Please note that this price does not include the tipping fees for commercial properties. The following table is a breakdown of the annual tipping fee costs:

Tipping Fee

Population	Waste production (lbs per person per day)	Tipping Fee (per ton)	Annual Tipping Fee	Annual Tipping Fee (per household)
16,408	2.87	$61.00	$524,240	$73

1 EPA Study: http://www.epa.gov/epawaste/nonhaz/municipal/

SECTION 4

OPTIONS FOR WASTE DISPOSAL

The Pennsylvania Department of Environmental Protection mandates the collection of trash, recyclables, compost, and bulk items such as tires, furniture and appliances. Three (3) main options were evaluated to determine the most feasible way to collect solid waste in the Borough of Lansdale. The options were evaluated based on feasibility, implementation logistics, and annual out-of-pockets costs. Those options are described in the following sections:

OPTION 1. Contracted Borough-Wide Trash Collection

The price for an annual contract was determined based on an evaluation of current municipal contracts for Towns located within Montgomery County with similar population and number of households as the Borough of Lansdale. Using this contract information, RV&B was able to extrapolate the cost per household for collection and was then able to determine an annual estimated contract price of $1,450,000 per year. This price includes the weekly pick up of residential trash and recyclables, the weekly pick up of Borough owned streetscape cans, and the monthly pick up of bulk items, white goods, and compost materials. Sixty-five (65) gallon totes for waste and recyclables will also be provided to all residential users in the Borough. Commercial properties would still be responsible for their own solid waste disposal. After inclusion of the tipping fees, discussed in Section 3.0, the total annual cost of waste collection through a public municipal contract would be approximately$1,974,240 per year. Under this contract the monthly cost per household would equate to roughly $23 per month. Please refer to Appendix B for all calculations used for this analysis.

Using the same annual contracts RVB was also able to extrapolate a price to collect commercial trash and recyclables. Commercial businesses within the Borough own their own dumpsters. This means that the only costs associated with commercial trash hauling would be the cost for pick up and disposal. RVB determined that it would cost an additional $145,000 to have commercial trash and recyclables collected by a contracted waste hauler. If the Borough chose not to include

commercial trash collection in their contract, commercial businesses would continue to be responsible for their own waste disposal.

Having a single contractor to collect solid waste throughout the Borough will help to alleviate congestion caused by multiple contractors running the same daily route and create less wear on Borough streets and alleys. It would also mean more uniform collection routes and times for neighborhoods.

Having a contractor collect solid waste would also create the need to integrate a collection route into the current GIS. The Borough would also need to implement a customer service hotline for residents who have issues with the waste hauling contractor.

OPTION 2. Borough-Owned and Operated Trash Collection

This option would require the Borough to purchase required equipment, hire new personnel and institute a collection policy to enable Borough staff members to conduct trash collection. There would be a significant start-up cost as the Borough would need to make an initial and long term investment in collection vehicles, construction and maintenance of a new building to store equipment and personnel, addition of new personnel, acquire the necessary insurance coverage, and the creation of a customer service response system to accommodate residential concerns.

The price for a Borough owned collection operation was determined by interviewing neighboring municipalities who currently have a municipally owned and operated collection operation. Equipment included for start-up costs were garbage trucks, recycling trucks, and sixty-five gallon trash and recycling totes. Additional start-up costs were the design and construction of the building for equipment and personnel. Items considered for annual costs included tipping fees, personnel, insurance, fuel, collection of white goods, collection of compost materials, extra totes, and annual equipment maintenance. Interest associated with any loans necessary to fund the endeavor was also taken into account for start-up costs.

Based on our investigation we have estimated that it would cost the Borough approximately $3,782,146 for the first year of collection. This includes a start-up cost of $2,566,320and an annual operating cost of $1,215,826.

The monthly operations cost per household would be $14. In order to pay back the start-up costs residents would be charged an additional $6 per month for a period of five years making the monthly cost per resident $20. Interest associated with any loans necessary to fund the endeavor was also taken into account for start-up costs based on an interest rate of 11%. Based on a charge of $6 per month, the initial investment would be paid off in a period of 5 years. Please refer to Appendix A for all calculations used for this analysis. It should be noted that the vehicles and fleet may begin to require significant repairs and eventual replacement beginning in year eight of the program. We would suggest that after the initial investment has been paid off, that the $6 per month fee continues to be collected for the purpose of funding the future replenishment of the fleet and long term maintenance.

According to local Municipalities, solid waste collection of commercial businesses is handled either by having the Borough owned waste collection service collect and dispose of commercial waste; or by having commercial businesses privately contract out their waste disposal. Currently, commercial properties within the Borough own their dumpsters. This means that the only costs associated with the Borough collecting commercial trash would be the cost for pick up and disposal. RVB determined that it would cost an additional $121,000 annually to collect commercial trash and recyclables.

Similar to a Borough wide solid waste disposal contractor, the Borough owned solid waste collection operation will help to alleviate congestion caused by multiple contractors running the same daily route and create less wear on Borough streets and alleys. It would also mean more uniform collection routes and times for neighborhoods.

OPTION 3. Continue with Current Private System

As previously noted, residents of Lansdale are currently responsible for their own waste collection and disposal. If kept in place, residents would have to haul the waste themselves or pay a contractor to haul it for them at no cost to the Borough. As stated earlier in this report, the average monthly payment made by residents for trash collection per residence is between $21 and $30 per month.

Appendix A
Cost Estimation

OPTION 1 – CONTRACTED BOROUGH WIDE TRASH COLLECTION

Waste Collection Fee

	Annual Estimated Cost	Annual Cost (per household)
Total	$1,450,000	$203

Total Cost Per Household

	Annual	Monthly
Waste Collection	$203	$17
Tipping Fee	$73	$6
Total	$276	$23

Cost for Borough Owned Collection

	Annual
Start-up Cost w/Loan Interest	$2,566,320
Annual Operations Cost	$1,215,826
Total	$3,782,146

Life Cycle Benefit

Initial Investment	$2,566,320
Payment plan duration (yrs)	5
Cost per year	$513,264
Monthly cost per resident	$6

Cost per Household

	Annual Cost	Monthly Cost
Start-up	$72	$6
Annual Operations	$170	$14
Total	$242	$20

OPTION 2 – BOROUGH OWNED AND OPERATED TRASH COLLECTION

Start Up

	Quantity	Unit cost	Amount
Garbage Trucks	2	$165,000	$330,000
Recycling Trucks	2	$165,000	$330,000
Municipal Works Building	1	$500,000	$500,000
65 gal garbage tote	7200	$80	$576,000
65 gal recycle tote	7200	$80	$576,000
Subtotal			$2,312,000
Interest	11%		$254,320
Total			$2,566,320

Annual Operations Cost (one collection per week)

Personnel	# of Employees	Salary	Amount
Salary and wages	7		$301,738.92
Overtime	7		$19,833.31
FICA/Payroll Taxes	7		$24,601.08
Unemployment Compensation	7		$3,966.69
Workers Compensation	7		$32,705.54
Total			$382,845.54

Insurance	# of Employees	Rate	Amount
Liability/Health	7	$26,700	$186,900
Vehicle	4	$5,300	$21,200
Total			$208,100

Fuel		Per week	Amount
Trash		$600	$31,200
Recycling		$600	$31,200
Streetscape cans		$245	$12,740
Total			$75,140

Miscellaneous			Amount
White Goods			$15,000
Christmas Trees			$0
Compost			$0
Extra Totes			$500
Vehicle Maintance			$10,000
Total			$25,500

Tipping Fee			$524,240

Tipping Fee

Population	Waste production (lbs per person per day)	Tipping Fee (per ton)	Annual Tipping Fee	Annual Tipping Fee (per household)
16408	2.87	$61.00	$524,240	$73

Appendix B

Trash Hauler Survey Results

Borough of Lansdale Trash Hauler Survey

1. What type of home do you live in?

Answer Options	Response Percent	Response Count
Single-family	79.9%	1115
Townhouse	11.7%	163
Apartment	8.5%	118
Other (please specify)		230
answered question		1396
skipped question		225

2. Who is your current trash removal and recycling hauler?

Answer Options	Response Percent	Response Count
Republic	20.7%	247
Waste Management	27.5%	328
G & C	30.3%	361
Advanced Disposal	18.4%	219
None	3.1%	37
Other (please specify)		413
answered question		1192
skipped question		429

3. How much do you currently pay for trash removal and recycling per month?

Answer Options	Response Percent	Response Count
I do not pay	8.1%	128
Less than $10	1.3%	21
$11 - $20	12.4%	196
$21 - $30	49.1%	777
$31 - 40	12.7%	201
$41 - $50	4.4%	69
More than $50	12.1%	191
answered question		1583
skipped question		38

4. What amount of trash (NOT recyclables) does your household generate in an average week?

Answer Options	Response Percent	Response Count
Less than 1 40-gallon trash container	52.4%	837
1-2 40-gallon trash containers	41.3%	659
3-4 40-gallon trash containers	5.3%	84
More than 4 40-gallon trash containers	1.1%	17
answered question		1597
skipped question		24

5. Do you have a limit to the amount of trash that your current trash hauler will pick up each week?

Answer Options	Response Percent	Response Count
Yes	23.0%	353
No	77.0%	1182
answered question		1535
skipped question		86

6. Do you have a limit on the amount of Bulk Items that your current trash hauler will pick up each week?

Answer Options	Response Percent	Response Count
Yes	57.2%	859
No	42.8%	643
answered question		1502
skipped question		119

7. The greater percentage of my household's weekly waste disposal consists of:

Answer Options	Response Percent	Response Count
Trash	50.3%	779
Recyclables	12.3%	191
Approximately equal amounts of trash and recyclables	37.4%	580
answered question		1550
skipped question		71

8. Are you fully satisfied with your current trash and recycling options?

Answer Options	Response Percent	Response Count
Yes	81.4%	1245
No	18.6%	284
answered question		1529
skipped question		92

9. Which of the following is the most important factor to you in selecting your trash and recycling service?

Answer Options	Response Percent	Response Count
Convenience	5.3%	74
Service	26.4%	368
Cost	68.3%	951
Other (please specify)		174
answered question		1393
skipped question		228

10. My primary motivation for recycling is:

Answer Options	Response Percent	Response Count
I do not recycle	3.9%	60
Environmental benefits, including saving landfill space	85.2%	1303
State regulations	6.0%	91
Fiscal responsibility	4.9%	75
Other (please specify)		52
answered question		1529
skipped question		92

11. I understand how to separate my recyclables:

Answer Options	Response Percent	Response Count
Yes	85.3%	1361
No	1.4%	22
I think so but could use more guidance	13.3%	213
answered question		1596
skipped question		25

12. Would your household support a single hauler trash removal and recycling program?

Answer Options	Response Percent	Response Count
Need more information to decide	41.2%	656
Yes	41.7%	665
No	17.1%	273
answered question		1594
skipped question		27

13. If your household would not, please explain why.

Answer Options	Response Count
	487
answered question	487
skipped question	1134

14. Please rate from highest (1) to lowest (7) what you consider to be the primary reasons for the Borough to consider alternative trash removal and recycling services.

Answer Options	1	2	3	4	5	6	7	Rating Average	Response Count
Low cost of service	568	286	175	79	72	41	46	2.30	1267
Quality of service	162	352	267	223	154	81	27	3.16	1266
Flexible, tiered service and cost options (i.e. lower costs	138	215	315	182	190	113	113	3.68	1266
Enhanced environmental stewardship	63	96	141	339	226	302	99	4.48	1266
Compliance with State regulations	28	27	52	91	301	266	501	5.70	1266
Fewer trash trucks on Borough roads	257	138	164	159	171	281	96	3.85	1266
Same day pickup for an entire neighborhood	50	153	152	193	152	182	384	4.84	1266
								answered question	1267
								skipped question	354

15. What is your contact information?

Answer Options	Response Percent	Response Count
Name	98.9%	1602
Address	98.2%	1590
Phone Number	83.7%	1355
Email	60.9%	986
answered question		1619
skipped question		2