

Recycling Technical Assistance Project  
#573

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

**RESTORING A PAY-AS-YOU-THROW SYSTEM TO SELF-SUFFICIENCY  
IN DOUGLASS TOWNSHIP**

AUGUST 2015

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



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## **1.0 STATEMENT OF PROBLEM**

Douglass Township (the Township, or Douglass) has operated a Pay-As-You-Throw (PAYT) weekly trash collection program for the last 24 years. Although the Township's population has increased in the past five years, the tonnage of recycling and trash collected has decreased. Douglass Township sampled neighborhoods and found that some residents are not participating in the trash program. The Township has sent letters to residents who are not using the trash program, without noticeable increase in participation. The Township has determined that some residents are taking their trash elsewhere. An inspection of local commercial dumpsters reveals illegal dumping is occurring; however, the business owners do not want to exert the effort to investigate and prosecute the illegal dumpers. The Township has approached businesses about the illegal dumping and encouraged locks on dumpsters, but the problem does not seem to be a serious concern for most businesses. The theft of services that is occurring - residents using the free recycling program but not paying for trash services - has created a budget deficit of around \$1,000 per year on average. See Appendix A for the 5-year Historic Waste Services Budget Analysis.

The Township requested aid in determining how to restore their PAYT program to self-sufficiency, increase program participation, and reduce theft of services and illegal dumping, while still encouraging waste reduction. Douglass is interested in a comparison of various fee structures and waste and recycling program modifications to improve program participation, and also possibly increase recycling pickup frequency from biweekly to weekly. Through the partnership between the Pennsylvania State Association of Township Supervisors (PSATS) and the Pennsylvania Department of Environmental Protection (PADEP), the Township was provided with technical assistance by KRF Environmental.

## **2.0 SCOPE OF WORK**

Task 1 – Project Organization – KRF Environmental (KRF) met with Douglass Township and developed a Scope of Work.

Task 2 – Data Gathering – KRF researched, calculated costs, and assessed the feasibility of various waste and recycling program fee structures and program modifications, including the addition of weekly recycling collection. KRF contacted other municipalities with PAYT programs to gather information on program details, participation, enforcement, education, costs, and common issues. KRF reviewed the illegal dumping ordinance and procedures and determined recommendations.

Task 3 – Report Writing – KRF produced this report detailing options for eliminating budget deficit and theft of services, and highlighting recommended strategies. Appendices include a historical budget analysis, a detailed financial analysis of each option, sample residential communication for the recommended change, a draft illegal dumping enforcement strategy, and a draft waste hauling services bid sheet.

Task 4 – Report Revision and Final Submission – KRF revised this report as necessary and submitted the final report.

## **3.0 EXISTING WASTE MANAGEMENT PROGRAM**

Douglass Township is a 15.4-square-mile Act 101-mandated municipality in Montgomery County, Pennsylvania with approximately 10,195 residents, serving approximately 3,400 households, according to Township records. The Township operates a PAYT system and offers free curbside recycling collection every other week, a drop-off recycling and yard-waste center open two days per week, paid-sticker bulk item pickup, and curbside leaf collection. Douglass charges residents \$2.60 per 40-gallon trash bag, sold at local stores, and \$10 per bulk item to fund the trash and recycling collection program. The Township contract with Advanced Disposal, set to expire October 2015, provides for weekly trash collection and every-other-week recycling collection, including paper, glass, aluminum and bimetallic cans, and plastics #1 through #7. The Township performs leaf collection in-house and operates a drop-off recycling center for residents, open Wednesdays from 1:00pm to 4:00pm and Saturdays from 9:00am to 2:00pm. The recycling center accepts corrugated cardboard, clothing and shoes, mixed papers, electronics, scrap metals, commingled and single stream recyclables, empty propane cylinders, rechargeable batteries, yard waste, and leaves. The recycling center has four part-time personnel and a recycling coordinator. The Township Public Works Department employs staff and owns vehicles required to facilitate yard waste and leaf collection. Businesses are responsible for contracting privately with a hauler for trash and recycling collection.

Douglass performs ongoing education and enforcement. The Township posts refuse and recycling information on its website and distributes information in newsletters. Douglass Township has an illegal dumping ordinance in place and Douglass sends a notice

via mail for any illegal dumping violation, or the code enforcement officer issues citations with the local District Justice, depending on the specific violation.

#### **4.0 SUGGESTED WASTE MANAGEMENT PROGRAM OPTIONS**

##### **4.1 Residential PAYT Waste Program Options**

KRF contacted other Pennsylvania municipalities with PAYT trash and recycling programs, researched PAYT options, discussed possible options with a Douglass Township representative, and determined a number of possible PAYT fee and structure modifications that address the concerns of the Township. KRF assessed options, provided below, that could restore the PAYT program to self-sufficiency, increase program participation, reduce theft of services and illegal dumping, while still encouraging waste reduction, and possibly allow for an increase in recycling collection frequency. The calculations and assumptions associated with each option are provided in Appendix B, Detailed Financial Analysis of Options. Figure 4.0 on page 5 provides a benefit comparison of the different options.

##### **4.1.1 Option 1: Maintain the Status Quo, but Increase Pay-Per-Bag Fees**

To address the budget deficit, the Township could simply raise the pay-per-bag fee. The current average annual budget deficit is \$927, which would only require a minute increase in fee. Major budget fluctuations are due to the Act 101 Recycling Performance Grant and Act 101 Recycling Development and Implementation Grant (refer to Appendix A). After reallocating grant awards to their intended years, the modified yearly budgets still reveal a maximum annual deficit of \$9,838. Using this maximum deficit as an upper limit, KRF determined the Township would need to raise the cost to from \$2.60 to \$2.67 per bag, or \$13.35 per 5-pack. If the Township wished to cover larger expenses, such as providing weekly recycling pickup as discussed in section 4.2.1, the cost would be an estimated \$3.23-per-bag, using a simple calculation as noted in Appendix B Option 1. In comparison, Penn Township in York County, Pennsylvania runs a successful PAYT program with weekly trash and recycling pickup, and charges \$3.50 per trashbag. While raising the bag cost between \$2.67 and \$3.23 would alleviate the deficit, it does not address theft of services, illegal dumping, or encourage residents who do not use the service to begin purchasing bags, although it may financially allow for increased recycling collection.

##### **4.1.2 Option 2: Maintain the Status Quo, but Increase Bulk Sticker Fees**

On average, the cost of trashing an item in Douglass Township is 37% landfill fee and 63% hauling fee. Therefore, at \$62 per ton for tipping fee, the actual cost to haul and dispose of a 180-pound sofa for example would be a little over \$15. However, the current bulk sticker cost is \$10. While most bulk items are not as large as a sofa, increasing the bulk item sticker fee would be a simple way to alleviate the budget deficit. If the bulk sticker price were raised to \$20 Douglass Township would receive an estimated \$7,426 more per year, which would easily cover the average annual deficit of \$927. Detailed calculations are shown in Appendix B. Many Townships have bulk sticker prices of \$20, \$30, or more. Many bulk items can be reused or recycled. Putting a higher price on bulk item pickup helps cover the actual cost of dumping heavy items at the landfill, and may encourage residents to seek alternate disposal methods such as donation of household items or recycling of white goods. Even if raising the bulk cost reduced sticker sales by 30%, the additional income would still be around \$3000. While raising the bulk sticker cost would alleviate the deficit and encourage reuse of bulk items, it does not address theft of services or illegal dumping. Nor does it financially allow for increased recycling collection, or encourage residents who do not use the service to begin purchasing bags.

##### **4.1.3 Option 3: Provide 32-gallon Trashcan Pickup for an Annual Fee and Continue the Pay-Per-Bag Fee for Extra Trash**

The Township could provide pickup of a 32-gallon trashcan for an annual fee. Either the Township could purchase a hot-stamped, bar-coded, 32-gallon trashcan for each household (henceforth referenced as Option 3A), or provide a special trashcan sticker to each resident and allow the residents to provide their own can, as long as it is 32-gallons or less (henceforth referenced as Option 3B). The Township spends an average of \$30,669.00 each year to purchase orange trash bags to sell to residents. Allowing residents to use a re-usable container for some of their trash could significantly reduce the Township's yearly material costs. The Township recently purchased, at \$13.49 per can, 32-gallon cans for recycling collection. If the Township purchased a 32-gallon trashcan for each household, the cost would be a one-time fee of \$45,866.00, equivalent to only \$4,586.60 per year over the 10-year life of the trashcan. The Township would need to assess whether the budget could support this large upfront cost.

Elizabethtown Borough in Lancaster County, Pennsylvania runs a PAYT program where the Borough provides each household with a sticker that residents can affix to a 32-gallon-or-less, resident-provided trashcan, and charges a \$160-per-household annual fee. Residents can purchase special bag tags for extra trash at \$2.00 per tag. The Borough also provides a sticker that residents can affix to a resident-provided recycling can. By requiring residents to provide their own cans and issuing tags, rather than bags, for extra trash, the Borough significantly limits its capital costs for the program and allows residents to select cans and bags to suit their needs. In Appendix B, calculations can be found for Option 3A, in which the Township purchases a 32-gallon can for each household, and Option 3B, in which the Township purchases stickers for residents to affix to a resident-provided 32-gallon-or-less trashcan of their choice. With Option B, the Township would save an estimated \$44,000 one-time material cost (or \$4,400 per year, assuming a 10-year trashcan lifespan) compared with Option A, and would allow residents to choose a smaller can if they wish.

Currently, the annual cost per household to use one bag per week at \$2.60 per bag is \$135.20. On average, each household uses 0.86 bags per week, thus the average annual cost per household for trash and recycling services is \$116.83. A 32-gallon trashcan is equivalent in volume to about one trashbag, so for households that require more volume, trashbags could still be purchased and used alongside the trashcans, similar to a tiered-rate PAYT system employed by many municipalities across the country. Assuming the Township charged \$115 per year per household on the tax bill, and 15% of households purchased one additional trash bag per week, the estimated net income to the Township would be between \$72,000 and \$77,000. Detailed calculations are shown in Appendix B. The additional income could be used to fund weekly recycling pickup, rather than every-other-week recycling pickup, as discussed in section 4.2.1. Charging an annual fee for trashcan pickup in addition to a pay-per-bag fee for extra trash would alleviate the deficit, eliminate theft of services, reduce illegal dumping, and compel all residents to use the services while still encouraging waste reduction.

#### **4.1.4 Option 4: Provide Tiered Trashcan Pickup Options for an Annual Fee and Continue the Pay-Per-Bag Fee for Extra Trash**

The Township could provide pickup of a 32-gallon or a 64-gallon trashcan for an annual fee. Similar to Option 3, could the Township could either purchase the trashcan for each household (henceforth referenced as Option 4A), or provide special trashcan stickers to each resident and allow the residents to provide their own cans, as long as it is their plan size (32-gallons or 64-gallons) or less (henceforth referenced as Option 4B). Stickers could have obvious can size designations, so trash collectors could easily identify a can as the appropriate size (e.g., “DOUGLASS TOWNSHIP 64 GALLONS”). Tiered trashcan pickup options provide the same benefits as Option 3, above, with the added financial benefits of even lower municipal cost to purchase trash bags, and control over pricing for residents who trash more than 32 gallons. While the Township could offer a discount for using a smaller trashcan or a penalty for using a larger trashcan, to minimize resident complaints of “unfair pricing,” KRF recommends keeping the same rate-per-volume program cost. Therefore, the cost of a 64-gallon weekly trash pickup (e.g., \$230) would be double that of a 32-gallon weekly trash pickup (e.g., \$115). In addition to the pay-per-bag fee for extra trash, this system is a combination of what the EPA refers to as multi-tiered and proportional pricing, as detailed on its PAYT webpage <http://www.epa.gov/osw/consERVE/tools/payt/top13.htm>. Assuming the Township charged \$115 per year for 32-gallons and \$230 per year for 64-gallons, if 500 households opted for 64-gallons and 5% of households purchased one additional trash bag per week, the estimated net income to the Township would be between \$130,000 and \$139,000. Detailed calculations are shown in Appendix B.

The additional income could be used to fund weekly recycling pickup, rather than every-other-week recycling pickup, as discussed in section 4.2.1. The Township could notify residents that program participation is mandatory and all households are enrolled in the 32-gallon program unless they request a larger can size. Even larger can size program options could be offered. Whatever the choices, one PAYT municipality noted the importance of visuals when notifying residents of can-size choices. An example of a flyer visually informing residents of choices is shown in Appendix C. Charging an annual fee for trashcan pickup in addition to a pay-per-bag fee for extra trash would alleviate the deficit, eliminate theft of services, reduce illegal dumping, and compel all residents to use the services while still encouraging waste reduction.

#### **4.1.5 Option 5: Charge an Annual Base Service Fee and Continue the Pay-Per-Bag Fee**

Since Douglass Township has determined that a number of households are using the free recycling pickup service without buying trash bags, the Township could start to charge an annual fee on the tax bill and continue to charge a per-bag fee. The average annual cost to run the recycling program, including employees, maintenance, and hauling (but not factoring grant and other

incomes) is \$172,682.88, or \$50.79 per household for 3,400 households. The average cost to run the trash program, including hauling and disposal is \$305,058.17, or \$2.00 per bag for the 152,775 bags purchased on average every year. If the Township assessed a \$50 waste services fee on the annual tax bill, and charged \$2.00 per trash bag, the net income would be an estimated \$77,407.00. The additional income could be used to fund weekly recycling pickup, rather than every-other-week recycling pickup, as discussed in section 4.2.1. Detailed calculations are shown in Appendix B. No increase in bag sales is assumed because the reduction in bag price from \$2.60 to \$2.00 does not represent a great enough drop in price to entice illegal dumpers to purchase trash bags. While charging an annual fee for waste services and reducing the pay-per-bag fee would alleviate the deficit and reduce theft of services, it likely would not reduce illegal dumping or significantly encourage residents who do not use the service to begin purchasing bags.

#### 4.1.6 Option 6: Charge an Annual Fee for a Base Number of Bags and Continue the Pay-Per-Bag Fee

Assuming each household would use at least one trash bag every two weeks, the Township could charge a \$65 waste services fee on the yearly tax bill, and then distribute the equivalent 25 trash bags to each household (25 x \$2.60 = \$65.00). This option encourages each households participation. Households can purchase additional bags, if needed. If this method led to a 10% increase in program participation, the Township could expect an estimated \$25,526.00 in net income. To collect enough income to provide for weekly recycling pickup, the household fee could be increased to \$80. The \$80 fee would still be accompanied by delivery of 25 trashbags, and the pay-per-bag fee for extra trash would remain \$2.60. Detailed calculations are provided in Appendix B. This option would require dedicated staff time for distributing the trashbags each year, or additional money for postage. The Township should take precautions to deliver the bags in a manner that prevents bags from being stolen, or residents could be required to pick up their 25 bags at the Township offices. Charging an annual fee for trashbag distribution would alleviate the deficit, address theft of services, reduce illegal dumping, encourage residents who do not use the service to at least partially begin participating, and possibly financially allow for increased recycling collection.

#### 4.1.7 Comparison of Residential PAYT Waste Program Options

In order to meet the stated goals of Douglass Township, provide residents with the lowest annual program cost, reduce material costs, and allow for weekly recycling collection, KRF recommends that Douglass Township provide 32-gallon or tiered trashcan pickup via sticker distribution for an annual fee, and charge a pay-per-bag fee for extra trash (Option 3B or 4B). The Township should determine the overall need for a larger-size trashcan plan, and offer a larger can if desired. As shown in Figure 4.0 below, these options provide for the lowest annual program cost per household, while generating enough revenue to support weekly recycling pickup. The Township could combine options 3B or 4B with option 2, to further encourage bulk waste reduction, if desired. If the Township can support the upfront cost of purchasing cans, KRF recommends Options 3A and 4A, as it is anticipated that residents would likely be more receptive to the program change.

Option No.	Estimated Net Income	Annual Cost for 32-gallons weekly	Alleviate Deficit	Eliminate Theft of Services	Reduce Illegal Dumping	Encourage Waste Reduction	Encourage Bulk Waste Reduction	\$ for Weekly Recycling Pickup
1	\$9,767	\$139	●			●		
2	\$6,500	\$135	●			●	●	
3A	\$72,366	\$115	●	●	●	●		●
3B	\$76,552	\$115	●	●	●	●		●
4A	\$130,595	\$115	●	●	●	●		●
4B	\$138,732	\$115	●	●	●	●		●
5	\$77,408	\$154	●	●		●		●
6A	\$25,527	\$135	●	●	●	●		
6B	\$76,526	\$150	●	●	●	●		●

Figure 4.0 Option Benefit Comparison

It is important to note, KRF recommends that no changes be made in fees or structure until after the Township receives bids on the new trash and recycling hauling contract, to begin in October 2015. As detailed in Section 4.4, the Township can procure costs for different options to make an informed decision about recycling collection frequency. Using the calculations in Appendix B as a guide, the Township can determine appropriate fees based on the actual hauling cost, once the contract is awarded. With the award of a new hauler contract, other specifics about the program may change as well. Any program changes and new



pricing can be advertised simultaneously. Douglass Township may assess the feasibility of these suggestions and choose the program that best fits the Township.

## **4.2 Curbside Recycling Program Improvement Options**

### **4.2.1 Increase Recycling Frequency**

Many PAYT communities attribute their program success to an easy-to-use recycling program, and many communities provide weekly recycling collection. Complementary hauling programs, such as recycling and yard waste pickup, are an integral part of a PAYT system, as they provide cost-reducing alternatives to trash disposal, and increase overall resident acceptance of the program. Some residents find that the volume of their recycling exceeds the volume of their trash on a weekly basis. Storing this recycling volume for two weeks may prove difficult for some households and lead to transport of the material elsewhere, such as commercial dumpsters or workplace recycling containers. It is likely safe to assume that by providing recycling collection only every-other-week, some volume of recycling is trashed or transported due to infrequent pickup and full recycling bins.

Douglass Township previously requested bids solely for once-per-week trash and every-other-week recycling collection, assuming that once-per-week recycling would be more expensive. However, some haulers prefer weekly regularity to simplify employee schedules, and so, economy of scale can help reduce the cost of additional recycling collections. While once-per-week recycling collection may be somewhat more expensive than every-other-week collection, there are also the added financial benefits of possible tipping fee reduction, and the increase of associated state recycling grant money. Residents may also be more accepting of a program structure or fee change as described in Section 4.1 if the change is accompanied by an increase in services (e.g., weekly recycling).

### **4.2.2 Provide or Allow Larger Recycling Receptacles**

The Township could allow for larger recycling receptacles, either instead of or in addition to increased recycling frequency. Douglass could apply for a Section 902 grant from PADEP for larger hot-stamped, bar-coded, recycling receptacles. Since not all residents will want a larger recycling can, the Township could advertise in the Recycling Newsletter that larger receptacles are available. In this case, it is important to keep a list of residences issued cans to prevent misuse of the cans and abuse of the system. This way the Township can charge a fee for additional or replacement cans for residences that have already been issued a can. Alternatively, the Township could simply purchase and issue recycling can stickers, encourage residents to purchase whatever size recycling can they desire, and have residents affix the recycling sticker to their can. At an estimated \$2,000 per 5,000 stickers, this is a much less expensive way to provide residents with the option to have a larger recycling can.

### **4.2.3 Offer TerraCycle® Recycling**

The Township recycling drop-off center currently collects many non-standard materials for recycling. To further give residents an option to divert waste, the Township may also consider hosting Terracycle® recycling at the center. Terracycle® is a fund-raising opportunity for institutions that agree to collect non-standard items for recycling, such as toothbrushes, baby food pouches, energy bar wrappers, binders, drink pouches, solo cups, writing instruments, and much more. The institution (i.e., the Township) receives money for the amount or weight of items recycled. Details about the program can be found at: [www.terracycle.com](http://www.terracycle.com). Terracycle® recycling would give residents an additional opportunity for waste diversion, while providing the Township with a small amount of additional income.

## **4.3 Illegal Dumping Control Options**

Keep Pennsylvania Beautiful® conducted a study of illegal dumping and found that many people do not believe they are illegally dumping when they place their trash in their employer's dumpster, a business's dumpster, or a neighbor's curbside trash, and many believe that the public has open access to any dumpster, regardless of the location. Just as citizens know that stealing cable service or a neighbor's water is illegal, residents should know that theft of waste hauler services is illegal per Pennsylvania Crimes Code Title 18 Section 3926 and per local ordinance.

The Douglass Township Waste and Recycling Materials Collection Ordinance 2009-01.1.206.F states "It shall be unlawful for any person to deposit for collection any solid waste including bulk items not generated at the address from which collection is made or to bring any solid waste into the Township or from one address to another in the township for the purpose of taking advantage of the collection service or to avoid the cost of collection." In Section 2009-01.1.215 "Enforcement and Violations of

Penalties” recycling violations are addressed, but no specific penalty is outlined for illegal dumping or theft of services. The Douglass Township Litter Ordinance Section 201 does not directly address illegal dumping by theft of services.

While Pennsylvania State Law clearly outlaws theft of services, the Township should ensure that the wording of their ordinance effectively prohibits theft of services and clearly addresses penalties or fines. The Waste and Recycling Materials Collection Ordinance Section 2009-01.1.215.C, rather than only addressing violations “regarding the separation of recyclable materials”, could be amended to clearly address any violation “regarding the acceptable disposal of waste and recycling.” It is important to note that KRF does not provide legal advice, and the Township should seek legal counsel from the Solicitor or another attorney concerning ordinance language.

Keep Pennsylvania Beautiful® recommends education as the best way to combat theft of services. Residents should be informed that depositing trash in a commercial dumpster or employer’s recycling is theft of services, and is illegal per PA state law and local Township ordinance. One Pennsylvania municipality noted that they have employees check commercial dumpsters and when they find a residential trashbag, it is easy to find contents that identify the original owner. Those illegal dumpsters are then sent a notice and assessed a fine. In addition to program restructuring to reduce illegal dumping, as discussed in Section 4.1, the Township can take steps to educate residents and streamline the penalty process. A Recommended Illegal Dumping Action Plan can be found in Appendix D.

#### **4.4 Hauler Contract Options**

There are many ways to structure a recycling program, and it is important that the Township choose a program structure that fits the Township’s needs, capabilities, and desires. Crafting a bid specification with multiple *optional* bid items will allow the Township to make an informed hauling program selection after receiving actual prices.

In the bid specifications, the Township may request separate trash collection and recycling collection bids, with the option of contracting with a hauler for one or more services. For example, the Township could request separate bids for optional bid items including once-per-week trash pickup, once-per-week recycling pickup, every-other-week recycling pickup, a combination once-per-week trash pickup with once-per-week recycling pickup, and a combination once-per-week trash pickup with every-other-week recycling pickup. After receiving the bids, the Township might find that “Hauler A” has the lowest bid for once-per-week trash pickup and “Hauler C” has the lowest bid for once-per-week recycling pickup, and those two prices combined are lower than the lowest bid for combined once-per-week trash pickup with once-per-week recycling pickup. The Township can choose the lowest bidder for each desired service, and end up with two different haulers and a more economical total service rate. See Appendix E for a Draft Bid Sheet. It is important to note that KRF does not provide legal advice, and the Township should seek legal counsel from the Solicitor or another attorney concerning bid specification language and structure.

## **5.0 RECOMMENDATIONS SUMMARY AND CONCLUSION**

- PAYT WASTE PROGRAM – Provide 32-gallon or tiered trashcan pickup via sticker distribution for an annual fee, and charge a pay-per-bag fee for extra trash. Consider purchasing the cans if the upfront cost is feasible. Finalize and advertise new program details only after receiving actual hauler bid option costs. Consider increasing bulk sticker fee.
- RECYCLING PROGRAM – Provide weekly recycling collection if financially feasible. Assess the need to provide stickers to residents who want to use resident-provided larger recycling cans. Consider Terracycle®.
- ILLEGAL DUMPING – Revise Ordinance to address illegal dumping fines. Educate residents about theft of services via the website and newsletter. Dedicate time to check dumpsters. Encourage businesses to report dumping. Assess fines.
- HAULER CONTRACT – Include optional bid items in the Hauler Contract as shown in Appendix E.

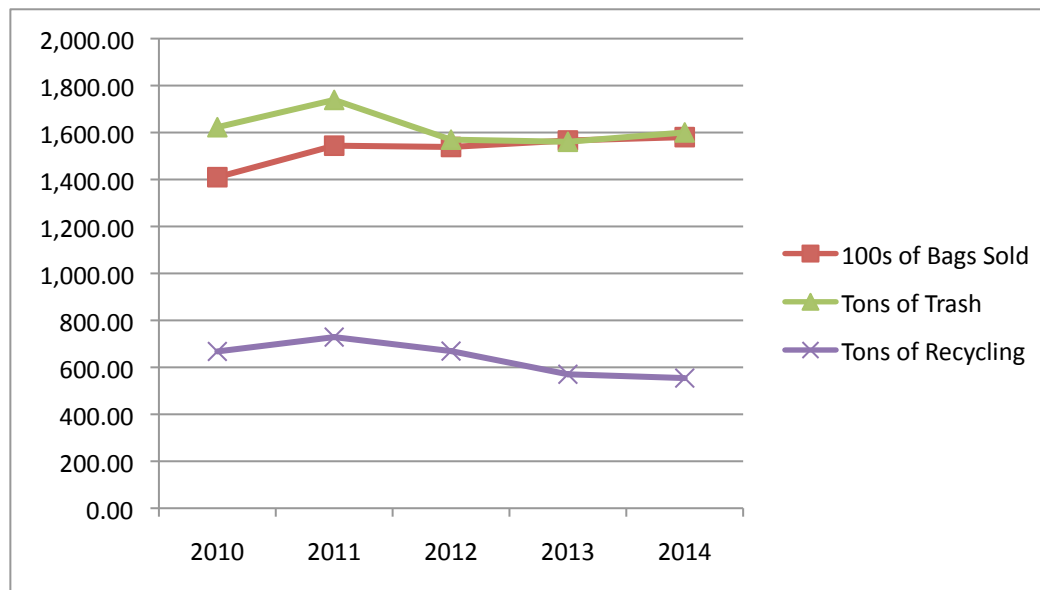
Ultimately, Douglass Township should choose the recycling program improvements it feels are feasible and best serve the Township and its residents. The Township should consult with the Solicitor or legal counsel to determine the appropriateness of these recommendations.

**Appendix A**

5-year Historic Waste Services Budget Analysis

**APPENDIX A****RTA #573 Douglass Township Historic Waste and Recycling Data**

	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>100s of Bags Sold</b>	1,409.80	1,543.93	1,538.54	1,566.10	1,580.42
<b>Tons of Trash</b>	1622.7	1738.93	1569.71	1560.61	1600.47
<b>Tons of Recycling</b>	667.68	728.78	669.19	570.39	554.25



**APPENDIX A****RTA #573 Douglass Township Budget Analysis based on Annual Budgets provided by Douglass Township**

	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>SUM 2010 - 2014</b>	<b>AVERAGE</b>	<b>MAX</b>
Trash Bag Sales	\$410,908.80	\$407,185.50	\$400,019.20	\$401,422.80	\$366,548.60		\$397,216.98	
Bags Purchased	158041.85	156609.81	153853.54	154393.38	140980.23		152775.76	
Average Bags purchased per week per household	0.89	0.89	0.87	0.87	0.80		0.86	
Bulk Sticker Sales Income	\$8,516.00	\$7,493.00	\$6,820.00	\$8,155.00	\$6,150.00		\$7,426.80	
Stickers Purchased	851.60	749.30	682.00	815.50	615.00		742.68	
Recycling Performance Grant	\$30,808.00	\$31,234.00	\$25,017.00	\$87,646.00	\$0.00		\$34,941.00	
Section 902 Grant	\$24,672.00	\$0.00	\$0.00	\$0.00	\$18,029.70		\$8,540.34	
Other Income	\$25,558.16	\$28,954.06	\$34,641.90	\$31,148.83	\$23,142.85		\$28,689.16	
<b>Total Income</b>	\$500,462.96	\$474,866.56	\$466,498.10	\$528,372.63	\$413,871.15	\$2,384,071.40	\$476,814.28	
							\$0.00	
Recycling Employee and Maintenance Costs	\$74,112.89	\$74,131.41	\$72,793.28	\$76,993.19	\$81,084.32		\$75,823.02	
Capital Purchases	\$0.00	\$24,966.00	\$0.00	\$0.00	\$28,398.30		\$10,672.86	
Trash Bag Costs	\$33,204.24	\$27,018.00	\$27,522.45	\$36,308.40	\$29,293.20		\$30,669.26	
Residential Trash & Recycling Hauling Costs	\$262,056.00	\$257,256.00	\$274,056.00	\$274,056.00	\$225,384.00		\$258,561.60	
Landfill Tipping Fees	\$100,508.27	\$101,198.47	\$99,724.59	\$107,030.72	\$101,609.50		\$102,014.31	
Average Tons of Trash per Household Annually	1621.10	1632.23	1608.46	1726.30	1638.86		1645.39	
<b>Total Expense</b>	\$469,881.40	\$484,569.88	\$474,096.32	\$494,388.31	\$465,769.32	\$2,388,705.23	\$477,741.05	
<b>Net Income</b>	\$30,581.56	-\$9,703.32	-\$7,598.22	\$33,984.32	-\$51,898.17	-\$4,633.83	-\$926.77	-\$9,838.68
<b>Net Income with Grant</b>								
<b>Reallocations*</b>	\$5,909.56	\$14,968.68	-\$7,598.22	-\$9,838.68	-\$8,075.17	Over 5 years, the total budget deficit was 4,633, or \$926 per year.		

\*The major budget fluctuations are due to the Recycling Performance Grant and Section 902 Grant offsets. The PADEP was late on performance grant payments, so none were received in 2010, but two rounds worth of performance grants were received in 2011. A capital purchase was made in 2013, but the Section 902 grant to fund the purchase was not received until 2014.

The largest deficit over the 5-year period was in 2010 equalling \$51,898.17, but that year the Section 904 grant was late and was received in 2011. Therefore half of the \$87,646 should be allocated to the 2010 balance, making the 2011 deficit an estimated \$9,838. The deficit of \$9,703 in 2013 is based on capital purchases paid for by the Section 902 grant received in 2014, making the actual net income for 2013 and 2014 positive. The largest modified annual deficit is an estimated \$9,838. The average annual deficit is \$926.

**Appendix B**

Detailed Financial Analysis of Options

**APPENDIX B**

Option 1: Maintain the Status Quo, but Increase the Cost of Trash Bags to \$2.67

	Var.	Average Annual Income/Expenses	Formulas
<i>Averages from Historical Data</i>	<b>INCOME</b>		
	A	Trash Bag Sales	\$397,216.98
	B	Bags Purchased	152775.76
		Average Bags per Week per Home	0.86
		Bulk Sticker Sales Income	\$7,426.80
		Stickers Purchased	742.68
		Recycling Performance Grant	\$34,941.00
		Section 902 Grant	\$8,540.34
		Other Income	\$28,689.16
	C	<b>Total Income</b>	\$476,814.28
	<b>EXPENSE</b>		
		Recycling Employee and Maintenance Costs	\$75,823.02
		Capital Purchases	\$10,672.86
		Trash Bag Costs	\$30,669.26
	Residential Trash & Recycling Hauling Costs	\$258,561.60	
	Landfill Tipping Fees	\$102,014.31	
	Average Tons of Trash per Household	1645.39	
D	<b>Total Expense</b>	\$477,741.05	
	<b>Net Income</b>	-\$926.77	
E	Largest Annual Budget Deficit	\$9,838.00	
<i>Changes to the Budget</i>	<b>TRASHBAGS</b>		
	F	New Cost per Bag to Resident	<b>\$2.67</b> (A + E) / B
	G	Estimated Income	\$487,508.58 C - A + (B * F)
	H	Estimated Expense	\$477,741.05 D
		<b>Estimated Net Income</b>	<b>\$9,767.54</b> G - H

## Notes:

- 1 Historical data averages used unless otherwise stated.
- 2 The new cost per bag should cover the largest annual budget deficit.
- 3 In this scenario, the bag cost should be kept as low as possible so as not to deter residents from purchasing bags. However, no increase in bag sales is predicted.
- 4 If the Township desired to increase the bag cost to cover weekly recycling pickup, the bag cost could be calculated as Cost-Per-Bag = (Current Average Trash Bag Sale Income + Largest Annual Budget Deficit + Cost for Additional Recycling Pickup) / Average Annual Bags Purchased.
- 5 If the cost for additional recycling pickup is 1/3 of the annual Trash & Recycling Hauling Cost, then the cost per bag to cover weekly recycling pickup would be \$3.23.

**APPENDIX B**

Option 2: Maintain Status Quo, but Increase Cost of Bulk Pickup to \$20

		Average Annual Income/Expenses	Formula
<i>Averages from Historical Data</i>	<b>INCOME</b>		
	Trash Bag Sales	\$397,216.98	
	Bags Purchased	152775.76	
	Average Bags per Week per Home	0.86	
	A Bulk Sticker Sales Income	\$7,426.80	
	Stickers Purchased	742.68	
	Recycling Performance Grant	\$34,941.00	
	Section 902 Grant	\$8,540.34	
	Other Income	\$28,689.16	
	<b>B Total Income</b>	<b>\$476,814.28</b>	
	<b>EXPENSE</b>		
	Recycling Employee and Maintenance Costs	\$75,823.02	
	Capital Purchases	\$10,672.86	
	Trash Bag Costs	\$30,669.26	
	Residential Trash & Recycling Hauling Costs	\$258,561.60	
Landfill Tipping Fees	\$102,014.31		
Average Tons of Trash per Home	1645.39		
<b>C Total Expense</b>	<b>\$477,741.05</b>		
<b>Net Income</b>	<b>-\$926.77</b>		
<i>Changes to the Budget</i>	<b>BULK PICKUP</b>		
	D Estimated Annual Income from \$20 Bulk Pickup	\$14,853.60	A * (20-10)
	E Estimated Additional Annual Income from \$20 bulk pickup	<b>\$7,426.80</b>	D - A
	Estimated Additional Annual Income from \$25 bulk pickup	\$11,140.20	
	F Income	\$484,241.08	B + E
	G Expense	\$477,741.05	C
	<b>Estimated Net Income</b>	<b>\$6,500.03</b>	F - G

## Notes:

- 1 Historical data averages used unless otherwise stated.
- 2 The new cost per bulk pickup should cover the average annual deficit.
- 3 In this scenario, the bag cost is kept the same, so as not to deter residents from purchasing bags. However, no increase in bag sales is assumed.



**APPENDIX B**

Option 3A: Provide Trashcans for an Annual Fee and Continue the Pay-Per-Bag Fee for Extra Trash

		Average Annual Income/Expenses	Formula	
Averages from Historical Data	<b>INCOME</b>			
	A	Trash Bag Sales	\$397,216.98	
	B	Bags Purchased	152775.76	
	C	Average Bags per Week per Home	0.86	
		Bulk Sticker Sales Income	\$7,426.80	
		Stickers Purchased	742.68	
		Recycling Performance Grant	\$34,941.00	
		Section 902 Grant	\$8,540.34	
		Other Income	\$28,689.16	
	D	<b>Total Income</b>	\$476,814.28	
	<b>EXPENSES</b>			
		Recycling Employee and Maintenance Costs	\$75,823.02	
		Capital Purchases	\$10,672.86	
	E	Trash Bag Costs	\$30,669.26	
	Residential Trash & Recycling Hauling Costs	\$258,561.60		
F	Landfill Tipping Fees	\$102,014.31		
	Average Tons of Trash per Home	1645.39		
G	<b>Total Expense</b>	\$477,741.05		
	<b>Net Income</b>	-\$926.77		
Changes to the Budget	<b>ESTIMATED TRASH AND RECYCLING AMOUNT CHANGES</b>			
	H	Additional Landfill Tipping Fee for 10% increase	\$10,201.43	0.1 * F
	<b>TRASHBAGS</b>			
	I	Cost per Bag to Resident	\$2.60	
	J	Cost to Township per trashbag	\$0.20	E / B
		Using Trash Can - Assuming 15% of homes use 1 extra bag per week		
	K	Using Trash Can - Cost to buy bags annually	\$5,323.81	J * (0.15*3400)*52
	L	Using Trash Can - Income from bag sales annually	\$68,952.00	I * (0.15*3400)*52
	<b>32-GALLON TRASHCAN</b>			
	M	Estimated Capital Cost of purchasing 3400 32-gallon logo trashcans at \$13.49	\$45,866.00	3400 * 13.49
	N	Estimated Cost/Year over 10 years of purchasing 3400 32-gallon trashcans	\$4,586.60	M/10
		Current Average Annual Program Cost to Residents	\$116.83	
		Annual cost of 32 gallon (vs 40 gallon at \$2.67)	\$111.07	
	P	Annual Program Cost for 32-gallon can	\$115.00	
	Q	Income from Residential Trashcan pickup @\$115	\$391,000.00	3400 * P
	R	Income	\$539,549.30	D - A + L + Q
	S	Expense	\$467,183.63	G - E + K + N + H
	<b>Estimated Net Income</b>	<b>\$72,365.67</b>	R - S	

## Notes:

- Historical data averages used unless otherwise stated.
- All households would pay an annual program fee in the yearly tax bill.
- The current average household program cost is \$116.83. At the rate of \$2.67 per 40 gallons, it would cost \$111.07 per year to throw away 32 gallons per week. An annual base rate of \$115 was chosen for this scenario, since it is a very low program rate and comparable to what Douglass residents are accustomed to paying.
- Since program participation is mandatory, a 10% increase in trash tonnage is assumed.
- Since some households will throw away more than 32 gallons per week, it is assumed that 15% of homes will use 1 extra bag per week.

**APPENDIX B**

Option 3B: Provide Trashcan Stickers for an Annual Fee and Continue the Pay-Per-Bag Fee for Extra Trash

		Average Annual Income/Expenses	Formula	
Averages from Historical Data	<b>INCOME</b>			
	A	Trash Bag Sales	\$397,216.98	
	B	Bags Purchased	152775.76	
	C	Average Bags per Week per Home	0.86	
		Bulk Sticker Sales Income	\$7,426.80	
		Stickers Purchased	742.68	
		Recycling Performance Grant	\$34,941.00	
		Section 902 Grant	\$8,540.34	
		Other Income	\$28,689.16	
	D	<b>Total Income</b>	\$476,814.28	
	<b>EXPENSES</b>			
		Recycling Employee and Maintenance Costs	\$75,823.02	
		Capital Purchases	\$10,672.86	
	E	Trash Bag Costs	\$30,669.26	
	Residential Trash & Recycling Hauling Costs	\$258,561.60		
F	Landfill Tipping Fees	\$102,014.31		
	Average Tons of Trash per Home	1645.39		
G	<b>Total Expense</b>	\$477,741.05		
	<b>Net Income</b>	-\$926.77		
Changes to the Budget	<b>ESTIMATED TRASH AND RECYCLING AMOUNT CHANGES</b>			
	H	Additional Landfill Tipping Fee for 10% increase	\$10,201.43	0.1 * F
	<b>TRASHBAGS</b>			
	I	Cost per Bag to Resident	\$2.60	
	J	Cost to Township per trashbag	\$0.20	E / B
		Using Trash Can - Assuming 15% of homes use 1 extra bag per week		
	K	Using Trash Can - Cost to buy bags annually	\$5,323.81	J * (0.15*3400)*52
	L	Using Trash Can - Income from bag sales annually	\$68,952.00	I * (0.15*3400)*52
	<b>32-GALLON TRASHCAN</b>			
	M	Estimated Capital Cost of purchasing 5,000 vinyl stickers for trashcans	\$2,000.00	
	N	Estimated Cost/Year over 5 years of purchasing stickers	\$400.00	M/5
		Current Average Annual Program Cost to Residents	\$116.83	
		Annual cost of 32 gallon (vs 40 gallon at \$2.67)	\$111.07	
	P	Annual Program Cost for 32-gallon can	\$115.00	
	Q	Income from Residential Trashcan pickup @\$115	\$391,000.00	3400 * P
	R	Income	\$539,549.30	D - A + L + Q
	S	Expense	\$462,997.03	G - E + K + N + H
	<b>Estimated Net Income</b>	<b>\$76,552.27</b>	R - S	

## Notes:

- 1 Historical data averages used unless otherwise stated.
- 2 All households would pay an annual program fee in the yearly tax bill.
- 3 The current average household program cost is \$116.83. At the rate of \$2.67 per 40 gallons, it would cost \$111.07 per year to throw away 32 gallons per week. An annual base rate of \$115 was chosen for this scenario, since it is a very low program rate and comparable to what Douglass residents are accustomed to paying.
- 4 Since program participation is mandatory, a 10% increase in trash tonnage is assumed.
- 5 Since some households will throw away more than 32 gallons per week, it is assumed that 15% of homes will use 1 extra bag per week.

**APPENDIX B**

Option 4A: Provide Trashcan Options for a Tiered Annual Fee and Continue the Pay-Per-Bag Fee for Extra Trash

		Average Annual Income/Expenses	Formula	
Averages from Historical Data	<b>INCOME</b>			
	A	Trash Bag Sales	\$397,216.98	
	B	Bags Purchased	152775.76	
	C	Average Bags per Week per Home	0.86	
		Bulk Sticker Sales Income	\$7,426.80	
		Stickers Purchased	742.68	
		Recycling Performance Grant	\$34,941.00	
		Section 902 Grant	\$8,540.34	
		Other Income	\$28,689.16	
	D	<b>Total Income</b>	\$476,814.28	
	<b>EXPENSES</b>			
		Recycling Employee and Maintenance Costs	\$75,823.02	
		Capital Purchases	\$10,672.86	
	E	Trash Bag Costs	\$30,669.26	
		Residential Trash & Recycling Hauling Costs	\$258,561.60	
F	Landfill Tipping Fees	\$102,014.31		
	Average Tons of Trash per Home	1645.39		
G	<b>Total Expense</b>	\$477,741.05		
	<b>Net Income</b>	-\$926.77		
Changes to the Budget	<b>ESTIMATED TRASH AND RECYCLING AMOUNT CHANGES</b>			
	H	Additional Landfill Tipping Fee for 20% increase	\$20,402.86	0.2 * F
	<b>TRASHBAGS</b>			
	I	Cost per Bag to Resident	\$2.60	
	J	Cost to Township per trashbag	\$0.20	E / B
		Using Trash Can - Assuming 5% of homes use 1 extra bag per week		
	K	Using Trash Can - Cost to buy bags annually	\$1,774.60	J * (0.05*3400)*52
	L	Using Trash Can - Income from bag sales annually	\$22,984.00	I * (0.05*3400)*52
	<b>32-GALLON TRASHCAN</b>			
	M	Estimated Capital Cost of purchasing 3400 32-gallon logo trashcans at \$13.49	\$45,866.00	3400 * 13.49
	N	Estimated Cost/Year over 10 years of purchasing 3400 35-gallon trashcans	\$4,586.60	M/10
	P	Annual Program Cost for 32-gallon can	\$115.00	
	Q	Income from 2900 Residential Trashcan pickups @\$115	\$391,000.00	2900 * P
	<b>64-GALLON TRASHCAN</b>			
	R	Annual Program Cost for 64-gallon can	\$230.00	2 * P
	S	\$83 each	\$41,500.00	500 * 83
	T	trashcans	\$4,150.00	S / 10
	U	Income from 500 Residential Trashcan pickups @\$230	\$115,000.00	500 * R
	V	Income	\$608,581.30	D - A + L + Q + U
	W	Expense	\$477,985.85	G - E + K + N + T + H
	<b>Estimated Net Income</b>	<b>\$130,595.45</b>	V - W	

## Notes:

- Historical data averages used unless otherwise stated.
- All households would pay an annual program fee in the yearly tax bill.
- If both 32-gallon and 64-gallon programs are offered, it is assumed that 500 households will enroll for 64-gallon cans, and 2900 households will enroll for 32-gallon cans.
- Since program participation is mandatory, and larger trash cans allow for bulkier waste, a 20% increase in trash tonnage is assumed.
- Since some households will throw away more than 32 gallons per week or 64 gallons per week, it is assumed that 5% of homes will use 1 extra bag per week.
- Although only 2900 32-gallon trashcans are assumed, the calculations allow for the purchase of 3400 32-gallon trashcans, so the Township has extra trashcans on hand.

**APPENDIX B**

Option 4B: Provide Trashcan Sticker Options for a Tiered Annual Fee and Continue the Pay-Per-Bag Fee for Extra Trash

		Average Annual Income/Expenses	Formula	
Averages from Historical Data	<b>INCOME</b>			
	A	Trash Bag Sales	\$397,216.98	
	B	Bags Purchased	152775.76	
	C	Average Bags per Week per Home	0.86	
		Bulk Sticker Sales Income	\$7,426.80	
		Stickers Purchased	742.68	
		Recycling Performance Grant	\$34,941.00	
		Section 902 Grant	\$8,540.34	
		Other Income	\$28,689.16	
	D	<b>Total Income</b>	\$476,814.28	
	<b>EXPENSES</b>			
		Recycling Employee and Maintenance Costs	\$75,823.02	
		Capital Purchases	\$10,672.86	
	E	Trash Bag Costs	\$30,669.26	
	Residential Trash & Recycling Hauling Costs	\$258,561.60		
F	Landfill Tipping Fees	\$102,014.31		
	Average Tons of Trash per Home	1645.39		
G	<b>Total Expense</b>	\$477,741.05		
	<b>Net Income</b>	-\$926.77		
Changes to the Budget	<b>ESTIMATED TRASH AND RECYCLING AMOUNT CHANGES</b>			
	H	Additional Landfill Tipping Fee for 20% increase	\$20,402.86	0.2 * F
	<b>TRASHBAGS</b>			
	I	Cost per Bag to Resident	\$2.60	
	J	Cost to Township per trashbag	\$0.20	E / B
		Using Trash Can - Assuming 5% of homes use 1 extra bag per week		
	K	Using Trash Can - Cost to buy bags annually	\$1,774.60	J * (0.05*3400)*52
	L	Using Trash Can - Income from bag sales annually	\$22,984.00	I * (0.05*3400)*52
	<b>32-GALLON TRASHCAN</b>			
	M	Estimated Capital Cost of purchasing 5000 vinyl stickers	\$2,000.00	
		Estimated Cost/Year over 5 years of purchasing 5000 vinyl stickers	\$400.00	M / 5
	P	Annual Program Cost for 32-gallon can	\$115.00	
	Q	Income from 2900 Residential Trashcan pickups @\$115	\$391,000.00	2900 * P
	<b>64-GALLON TRASHCAN</b>			
	R	Annual Program Cost for 64-gallon can	\$230.00	2 * P
	S	Estimated Capital Cost of purchasing 2500 vinyl stickers	\$1,000.00	
		Estimated Cost/Year over 5 years of purchasing 2500 vinyl stickers	\$200.00	S / 10
U	Income from 500 Residential Trashcan pickups @\$230	\$115,000.00	500 * R	
V	Income	\$608,581.30	D - A + L + Q + U	
W	Expense	\$469,849.25	G - E + K + N + T + H	
	<b>Estimated Net Income</b>	<b>\$138,732.05</b>	V - W	

## Notes:

- 1 Historical data averages used unless otherwise stated.
- 2 All households would pay an annual program fee in the yearly tax bill.
- 3 If both 32-gallon and 64-gallon programs are offered, it is assumed that 500 households will enroll for 64-gallon cans, and 2900 households will enroll for 32-gallon cans.
- 4 Since program participation is mandatory, and larger trash cans allow for bulkier waste, a 20% increase in trash tonnage is assumed.
- 5 Since some households will throw away more than 32 gallons per week or 64 gallons per week, it is assumed that 5% of homes will use 1 extra bag per week.
- 6 Although only 2900 32-gallon trashcans are assumed, the calculations allow for the purchase of 3400 32-gallon trashcans, or 5000 32-gallon stickers and 2500 64-gallon stickers, so the Township has extra trashcans on hand.

**APPENDIX B**

Option 5: Charge a \$50 Annual Program Fee in the Yearly Tax Bill and Reduce the Pay-Per-Bag Fee to \$2.00

		Average Annual Income/Expenses	Formula
Averages from Historical Data	<b>INCOME</b>		
	A	Trash Bag Sales	\$397,216.98
	B	Bags Purchased	152775.76
		Average Bags per Week per Home	0.86
		Bulk Sticker Sales Income	\$7,426.80
		Stickers Purchased	742.68
		Recycling Performance Grant	\$34,941.00
		Section 902 Grant	\$8,540.34
		Other Income	\$28,689.16
	C	<b>Total Income</b>	\$476,814.28
		<b>EXPENSES</b>	
	D	Recycling Employee and Maintenance Costs	\$75,823.02
	E	Capital Purchases	\$10,672.86
	F	Trash Bag Costs	\$30,669.26
G	Residential Trash & Recycling Hauling Costs	\$258,561.60	
	Landfill Tipping Fees	\$102,014.31	
	Average Tons of Trash per Home	1645.39	
H	<b>Total Expense</b>	\$477,741.05	
	<b>Net Income</b>	-\$926.77	
Changes to the Budget	<b>YEARLY TAX BILL FEE &amp; LOWER BAG COSTS</b>		
	I	Estimated Cost of Just Recycling Collection Hauling	\$86,187.20 G / 3
	J	Annual Total Recycling/ Yard Waste Expenses	\$172,683.08 D + E + I
		Recycling/ Yard Waste Expenses per Household	\$50.79 J / 3400
	K	Income from \$50 annual fee	\$170,000.00 50 * 3400
	L	Annual Trash Expenses	\$305,057.97 H - D - E - I
	M	Trash Expenses Per Bag Purchased	\$2.00 L / B
	N	Income from \$2 bags	\$305,551.52 2.00 * B
	P	Income	\$555,148.82 C - A + K + N
	Q	Expense	\$477,741.05 H
	<b>Estimated Net Income</b>	<b>\$77,407.78</b>	P - Q

## Notes:

- 1 Historical data averages used unless otherwise stated.
- 2 To separate annual program fees from bag fees, the annual program cost is calculated to cover all recycling and yard waste costs, and the trashbag fee is calculated to cover all trash collection and disposal costs.
- 3 All households would pay a \$50 annual program fee in the yearly tax bill to cover the recycling and yard waste services offered.
- 4 The residents would pay \$2.00 per bag to cover the costs of trash collection and disposal.
- 5 No increase in bag sales is assumed, since reducing the cost from \$2.60 to \$2.00 is not likely to prevent illegal dumpers from attempting to avoid disposal fees.

**APPENDIX B**

Option 6A: Charge a \$65 Annual Fee, Distribute Bags, and Maintain the Pay-Per-Bag Fee

		Average Annual Income/Expenses	Formula	
<b>Averages from Historical Data</b>	<b>INCOME</b>			
	A	Trash Bag Sales	\$397,216.98	
		Bags Purchased	152775.76	
		Average Bags per Week per Home	0.86	
		Bulk Sticker Sales Income	\$7,426.80	
		Stickers Purchased	742.68	
		Recycling Performance Grant	\$34,941.00	
		Section 902 Grant	\$8,540.34	
		Other Income	\$28,689.16	
	B	<b>Total Income</b>	\$476,814.28	
	<b>EXPENSES</b>			
		Recycling Employee and Maintenance Costs	\$75,823.02	
		Capital Purchases	\$10,672.86	
	C	Trash Bag Costs	\$30,669.26	
	Residential Trash & Recycling Hauling Costs	\$258,561.60		
D	Landfill Tipping Fees	\$102,014.31		
	Average Tons of Trash per Home	1645.39		
E	<b>Total Expense</b>	\$477,741.05		
	<b>Net Income</b>	-\$926.77		
<b>Changes to the Budget</b>	<b>ESTIMATED TRASH AND RECYCLING AMOUNT CHANGES</b>			
	F	Additional Landfill Tipping Fee for 10% increase	\$10,201.43	
	<b>TRASHBAGS</b>			
	G	Cost per Bag to Resident	\$2.60	
	H	Cost to Township per trashbag	\$0.20	
		Distributing 25 bags per household		
	J	Cost of 25 bags per year to residents	\$65.00	25 * G
	K	Income from \$65 annual fee	\$221,000.00	3400 * J
	L	Additional Bag income, assuming 10% increase	\$215,938.68	(1.1 * A) - K
	M	Estimated Total Bags purchased	168053.34	(K + L) / G
	N	Townships Cost of Bags Purchased	\$33,736.18	M * H
	P	Income	\$516,535.98	B - A + K + L
	Q	Expense	\$491,009.40	E - C + N + F
	<b>Estimated Net Income</b>	<b>\$25,526.58</b>	P - Q	

## Notes:

- 1 Historical data averages used unless otherwise stated.
- 2 All households would pay a \$65 annual fee in the yearly tax bill to receive 25 trashbags. Since illegal dumpers would be given trash bags to use, and at least partial participation would be mandatory, a 10% increase in overall bag purchases and landfill fees is assumed.

**APPENDIX B**

Option 6B: Charge an \$80 Annual Fee, Distribute Bags, and Maintain the Pay-Per-Bag Fee

		Average Annual Income/Expenses	Formula	
Averages from Historical Data	<b>INCOME</b>			
	A	Trash Bag Sales	\$397,216.98	
		Bags Purchased	152775.76	
		Average Bags per Week per Home	0.86	
		Bulk Sticker Sales Income	\$7,426.80	
		Stickers Purchased	742.68	
		Recycling Performance Grant	\$34,941.00	
		Section 902 Grant	\$8,540.34	
		Other Income	\$28,689.16	
	B	<b>Total Income</b>	\$476,814.28	
	<b>EXPENSES</b>			
		Recycling Employee and Maintenance Costs	\$75,823.02	
		Capital Purchases	\$10,672.86	
	C	Trash Bag Costs	\$30,669.26	
Z	Residential Trash & Recycling Hauling Costs	\$258,561.60		
D	Landfill Tipping Fees	\$102,014.31		
	Average Tons of Trash per Home	1645.39		
E	<b>Total Expense</b>	\$477,741.05		
	<b>Net Income</b>	-\$926.77		
Changes to the Budget	<b>ESTIMATED TRASH AND RECYCLING AMOUNT CHANGES</b>			
	F	Additional Landfill Tipping Fee for 10% increase	\$10,201.43	
	<b>TRASHBAGS</b>			
	G	Cost per Bag to Resident	\$2.60	
	H	Cost to Township per trashbag	\$0.20	
		Distributing 25 bags per household		
	J	Cost of 25 bags per year to residents	\$65.00	25 * G
	K	Income from \$65 annual fee	\$221,000.00	3400 * J
	L	Additional Bag income, assuming 10% increase	\$215,938.68	(1.1 * A) - K
	M	Estimated Total Bags purchased	168053.34	(K + L) / G
	N	Townships Cost of Bags Purchased	\$33,736.18	M * H
	<b>ADDITIONAL HOUSEHOLD FEE FOR WEEKLY RECYCLING</b>			
	P	Total Income excluding additional Household Fee	\$516,535.98	B - A + K + L
	Q	Expense	\$491,009.40	E - C + N + F
	R	Estimated Net Income excluding Household Fee	\$25,526.58	P - Q
	S	Estimated Maximum Cost of Additional Recycling Pickup	\$86,187.20	Z / 3
		Maximum per Household Fee to Cover Additional Recycling Pickup	\$17.84	(R - S)/3400
	U	Probable Necessary Household Fee to Cover Additional Recycling	\$15.00	
	V	Additional Income from Household Fee	\$51,000.00	U * 3400
	W	Total Income	\$567,535.98	P + V
X	Total Expense	\$491,009.40	Q	
	<b>Estimated Net Income</b>	<b>\$76,526.58</b>	W - X	

## Notes:

- 1 Historical data averages used unless otherwise stated.
- 2 All households would pay an \$80 annual fee in the yearly tax bill to receive 25 trashbags. Since illegal dumpers would be given trash bags to use, and at least partial participation would be mandatory, a 10% increase in overall bag purchases and landfill fees is assumed.

**APPENDIX B: Options Comparison Chart**

Option No.	Option	Estimated Net Income	Cost Per Household to Throw Away 32-Gallons Weekly	Alleviate Deficit	Eliminate Theft of Services	Reduce Illegal Dumping	Encourage Waste Reduction	Encourage Bulk Waste Reduction	Financially Allows for Weekly Recycling Pickup
1	Maintain the status quo, but increase cost of trash bags to \$2.67 each	\$9,767	\$139	●			●		
2	Maintain the status quo, but increase cost of bulk pickup to \$20	\$6,500	\$135	●			●	●	
3A	Provide a 32-gallon trashcan to each household, charge an annual fee of \$115 included in the yearly tax bill, and keep the \$2.60 pay-per-bag fee for extra trash	\$72,366	\$115	●	●	●	●		●
3B	Provide a 32-gallon trashcan sticker to each household, charge an annual fee of \$115 included in the yearly tax bill, and keep the \$2.60 pay-per-bag fee for extra trash	\$76,552	\$115	●	●	●	●		●
4A	Provide either a 32-gallon or 64-gallon trashcan to each household, charge an annual fee of \$115 or \$230, respectively, included in the yearly tax bill, and keep the \$2.60 pay-per-bag fee for extra trash	\$130,595	\$115	●	●	●	●		●
4B	Provide either a 32-gallon or 64-gallon trashcan sticker to each household, charge an annual fee of \$115 or \$230, respectively, included in the yearly tax bill, and keep the \$2.60 pay-per-bag fee for extra trash	\$138,732	\$115	●	●	●	●		●
5	Charge a \$50 annual fee included in the yearly tax bill and reduce the per-bag fee to \$2.00	\$77,408	\$154	●	●		●		●
6A	Charge a \$65 annual fee in the yearly tax bill and distribute 25 bags per household based on the fee, and maintain the \$2.60 pay-per-bag fee for extra trash	\$25,527	\$135	●	●	●	●		
6B	Charge a \$80 annual fee in the yearly tax bill and distribute 25 bags per household based on the fee, and maintain the \$2.60 pay-per-bag fee for extra trash	\$76,526	\$150	●	●	●	●		●



**Appendix C**

Draft Residential Communications



Dear Douglass Township Residents **PLEASE READ,**

Douglass Township is happy to announce that beginning **October 2015**, residents will have

**WEEKLY CURBSIDE RECYCLING COLLECTION** and a

**TIERED-RATE Pay-As-You-Throw WEEKLY CURBSIDE TRASH COLLECTION**

- Douglass has been offering Pay-As-You-Throw trash and **FREE recycling** for the past 24 years.
- Under this system, residents are only required to **pay for the amount of trash they produce.**
- To improve our services, we will now offer **weekly recycling and trashcan collection.**
- Each household will get a sticker to affix to a **32-gallon-or-less resident-provided trashcan.**
- In addition, Douglass Township **bags will still be available** for purchase to dispose of extra trash.
- One bag per week used to cost over \$135; the **new annual fee for trashcan collection will be \$115.**
- Upon request, the Township will **also provide recycling stickers** for residents who wish to use their own recycling can. **Recycling is free and unlimited.** See our website for recycling details.

	<b>\$115 Annual Fee Per Household</b>  <b>AND STILL...</b>	<b>32-gallon Trashcan sticker*</b> Each Household will receive one 32-gallon trashcan sticker to place on a 32-gallon-or-less resident-provided trashcan of your choice to use for weekly curbside trash. <b>Free, unlimited recycling.</b>
	<b>\$2.60 per bag for extra trash</b>	Residents may still purchase Douglass Township trashbags to dispose of extra trash.

\*Each household must participate in the trashcan program. The annual waste services fee will be included in the yearly tax bill. Do not stack materials over the top rim of the trashcan. Overflowing trashcans will not be collected. Recycling cans containing trash will not be collected.

Each household will receive a trashcan sticker prior to October 2015. Residents are responsible for providing a can. **PLEASE VISIT** our website for FAQs or **CONTACT** the Douglass Township offices at (610) 367-6062 or [wastecollection@douglasstownship.org](mailto:wastecollection@douglasstownship.org) with questions. Thank you for your support!

Please visit [www.douglasstownship.org/recycling/trashcanplan](http://www.douglasstownship.org/recycling/trashcanplan) for more details.





Dear Douglass Township Residents **PLEASE READ AND RESPOND,**

Douglass Township is happy to announce that beginning **October 2015**, residents will have

**WEEKLY CURBSIDE RECYCLING COLLECTION** and a

**TIERED-RATE Pay-As-You-Throw WEEKLY CURBSIDE TRASH COLLECTION**

Douglass Township has been offering Pay-As-You-Throw trash and FREE recycling for the past 24 years. Under this system, residents are only required to pay for the amount of trash they produce. We are constantly looking to improve the services we offer, so we are proud to offer weekly recycling collection and a choice of one of the following options.

	<p><b>\$115 Annual Fee Per Household</b></p> <p><b>OR</b></p>	<p><b>32-gallon Trashcan*</b> Each Household will receive one stamped, bar-coded 32-gallon trashcan to use for weekly curbside trash. <b>Free, unlimited recycling.</b></p>
	<p><b>\$230 Annual Fee Per Household</b></p> <p><b>OR</b></p>	<p><b>64-gallon Trashcan*</b> Upon request, a Household can opt to receive one stamped, bar-coded 64-gallon trashcan to use for weekly curbside trash. <b>Free, unlimited recycling.</b></p>
	<p><b>\$345 Annual Fee Per Household</b></p> <p><b>PLUS</b></p>	<p><b>96-gallon Trashcan*</b> Upon request, a Household can opt to receive one stamped, bar-coded 96-gallon trashcan to use for weekly curbside trash. <b>Free, unlimited recycling.</b></p>
	<p><b>\$2.60 per bag</b></p>	<p>No matter which size trashcan you choose, residents may still purchase Douglass Township trashbags to dispose of extra trash.</p>

\*Each household must participate in one of the three trashcan program options. Do not stack materials over the top rim of the trashcan. Overflowing trashcans will not be collected.

Each household will receive a 32-gallon trashcan prior to October 2015, unless a different size is requested. To request a 64-gallon or 96-gallon trashcan instead, PLEASE CONTACT the Douglass Township offices at (610) 367-6062 or [wastecollection@douglasstownship.org](mailto:wastecollection@douglasstownship.org) by August 15<sup>th</sup>. After August 15<sup>th</sup>, a materials fee will be charged for a trashcan size change request. Trashcans are property of Douglass Township and remain with the property in the event of a move. Please see [www.douglasstownship.org/recycling/trashcanplan](http://www.douglasstownship.org/recycling/trashcanplan) for more details. Thank you for your support.

**Appendix D**

Recommended Illegal Dumping Action Plan

Dougllass Township Illegal Dumping Action Plan

1. Clarify Illegal Dumping Policy: Revise the Waste and Recycling Materials Collection Ordinance to clearly define the penalties and fines for illegal dumping and theft of services.

The Dougllass Township Waste and Recycling Materials Collection Ordinance 2009-01.1.206.F states “It shall be unlawful for any person to deposit for collection any solid waste including bulk items not generated at the address from which collection is made or to bring any solid waste into the Township or from one address to another in the township for the purpose of taking advantage of the collection service or to avoid the cost of collection.” In Section 2009-01.1.215 “Enforcement and Violations of Penalties” recycling violations are addressed, but no specific penalty is outlined for illegal dumping or theft of services.

While Pennsylvania State Law clearly outlaws theft of services, the Township should ensure that the wording of their ordinance effectively prohibits theft of services and clearly addresses penalties or fines. The Waste and Recycling Materials Collection Ordinance Section 2009-01.1.215.C, rather than only addressing violations “regarding the separation of recyclable materials,” could be amended to clearly address any violation “regarding the acceptable disposal of waste and recycling.” It is important to note that KRF does not provide legal advice, and the Township should seek legal counsel from the Solicitor or another attorney concerning ordinance language.

2. Educate Residents: Post Illegal Dumping laws and penalties on the website and in the Waste and Recycling Newsletter. Example text is shown below.

“Unfortunately, many people do not believe they are illegally dumping when they place their trash in their employer’s dumpster, a business’s dumpster, or a neighbor’s curbside trash, and many believe that the public has open access to any dumpster, regardless of the location. These are false assumptions. Just as stealing cable service or a neighbor’s water is illegal, theft of waste hauler services is illegal per Pennsylvania Crimes Code Title 18 Section 3926 and per local ordinance. The Dougllass Township Waste and Recycling Materials Collection Ordinance 2009-01.1.206.F states ‘It shall be unlawful for any person to deposit for collection any solid waste including bulk items not generated at the address from which collection is made or to bring any solid waste into the Township or from one address to another in the township for the purpose of taking advantage of the collection service or to avoid the cost of collection.’ **If anyone in Dougllass Township is found transporting or dumping their residential trash to another address, place of business, or commercial dumpster, they are liable to be fined between \$50 and \$300 per offense.**”

3. Educate Businesses: Send a note to inform businesses that they should be aware of illegal dumping. Encourage businesses to contact the Township if they see any suspicious activity or find foreign trash in their dumpster. Assure businesses that they do not have to prosecute violators, and if they report anything, the Township will take the responsibility to investigate, notify, and penalize the violator.

4. Check Dumpsters Regularly – Where possible, check commercial dumpsters for illegal dumping. Often, items in the trash will contain identifying material such as an address or name. Notify and assess fines as outlined in the Waste Collection Ordinance.

**Appendix E**

Example Waste Hauler Services Bid Sheet

**BID SHEET**  
 (See Section X for explanation of Options)

<b>All bids are annual lump-sum.</b>	<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 1, 2, &amp; 3 TOTAL</b>	<b>YEAR 4 (AT TOWNSHIP OPTION)</b>	<b>YEAR 5 (AT TOWNSHIP OPTION)</b>
Option 1: Once-per-Week Trash Only Collection						
Option 2: Once-per-Week Recycling Only Collection						
Option 3: Every-other-Week Recycling Only Collection						
<b>COMBINATION OPTIONS 4 &amp; 5</b>						
Option 4: Combination Once-per-week Trash and Once-per-Week Recycling Collection						
Option 5: Combination Once-per-Week Trash and Every-other-Week Recycling Collection						



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