Solid Waste Collection Study

The City of Hyattsville
4310 Gallatin Street
Hyattsville, Maryland 20781



SCS ENGINEERS

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11260 Roger Bacon Drive
Reston, VA 20190
703-471-6150

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1 INTRODUCTION

The City of Hyattsville contracted with SCS Engineers (SCS) to evaluate three components of their waste collection system:

1. **Curbside Collection** - SCS reviewed summary data, interviewed staff, and observed collection operations to recommend ways to improve efficiency and cost effectiveness of the program.
2. **Inclusion of Multi-Family Properties** - SCS evaluated equipment and labor needs to expand existing waste collection operations for single-family homes to multi-family properties.
3. **Implementation of a Pay-As-You-Throw (PAYT) System** - SCS evaluated costs, benefits, and challenges of implanting a PAYT system for curbside trash collection.

2 CURBSIDE COLLECTION OPERATIONS

City of Hyattsville's Solid Waste Division provides for an integrated waste management system, which includes:

- **Residential Curbside Collection** of household trash, bulk waste (including white goods), yard waste, and food scraps to 3,419 single family residences;
- **Drop-Off Services** for used motor oil and antifreeze at the Department of Public Works Operations Center, Monday through Friday, 7:30 am to 3 pm. Twice a year, the City also accepts electronics and paint (in original containers) for recycling.
- **Leaf Collection** during November through January each year.

The Solid Waste Division also provides for trash collection in City parks and public spaces. Curbside recycling collection services are provided by Prince George's County.

SCS personnel reviewed available data, interviewed drivers, and observed curbside collection operations to make recommendations to improve efficiency and cost effectiveness. Following is a brief discussion on existing services and with recommendations for improvement.

HOUSEHOLD TRASH

The City's regular weekly collection of household trash is a cart-based program that operates Tuesday through Friday. Trash collection uses four trucks on each day, three large trucks and one smaller truck for smaller streets. According to interviews with personnel, the trucks usually finish their route in one load. When one truck fills up without finishing the route, other trucks are called in to help finish.

Exhibit 1 presents a map of the collection areas for each day of the week. Table 1 presents the number of single family homes that are serviced each collection day.

Exhibit 1. Household Trash Collection Service Map

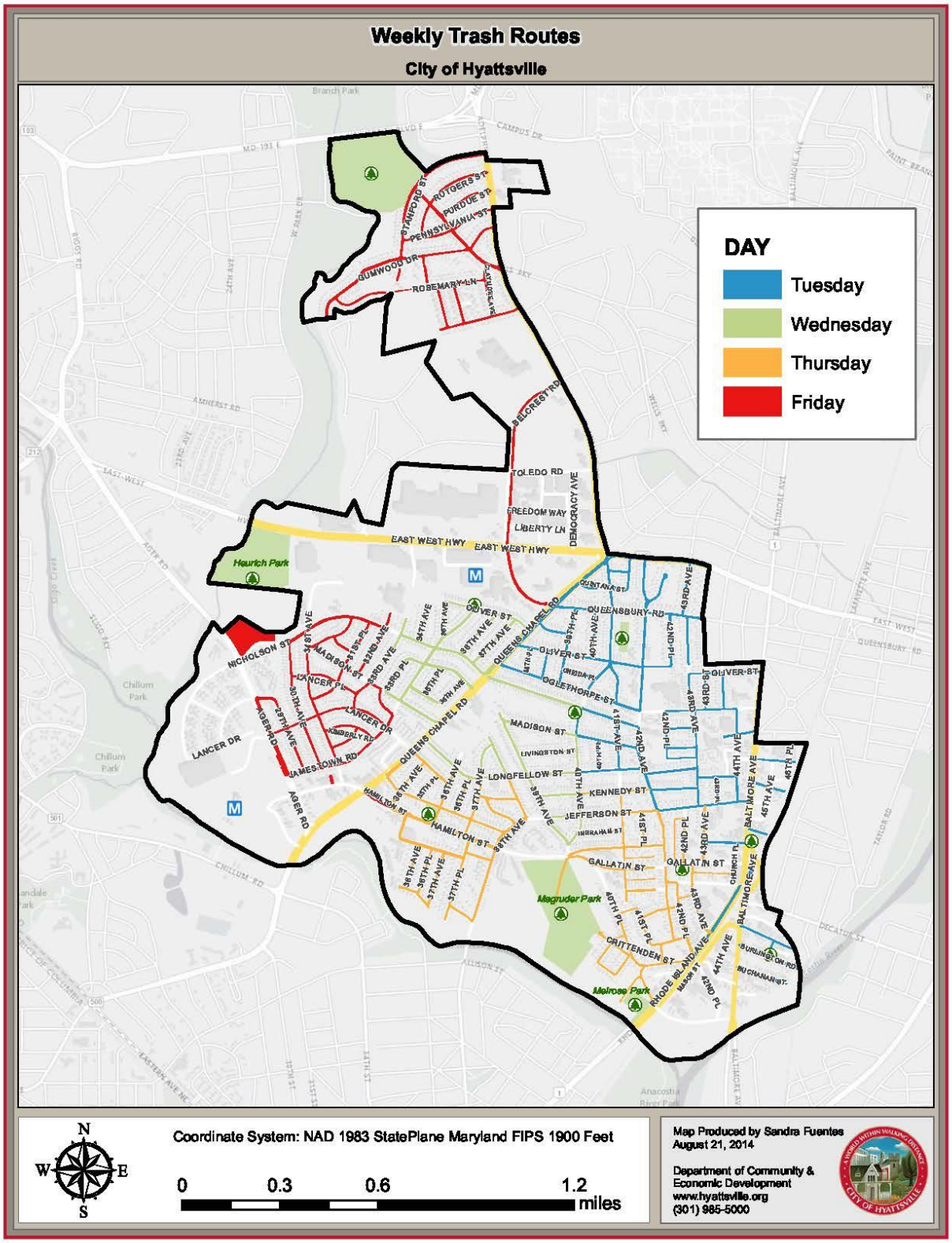


Table 1. Number of Single-Family Homes by Day of Week

Collection Day	Number of Homes
Tuesday	934
Wednesday	812
Thursday	817
Friday	856
Total	**3,419**

The City does not collect hazardous materials, automobile parts, or construction debris with this collection program. Hazardous materials can be dropped off at the Department of Public Works Operation Center or the Prince George's County Household Hazardous Waste Acceptance Site.

The quantities of household trash generated weekly and annually are presented in Table 2. On average, single family residents generated 703 pounds per capita annually.

Table 2. Household Trash by the Numbers

Tons per week [1]	63.5
Tons per year	3,303
Pounds per year	6,605,227
Pounds per Household per Year [2]	1,932
Average Persons/Household [3]	2.75
Pounds/Household/Person	702.5

[1] Based on data between 6/27/2019 and 3/25/2020

[2] Annual tons divided by number of homes (3,419)

[3] From US Census QuickFacts

The following recommendations will improve the efficiency, safety, and equity of this program:

- **Require Containerization in City-Issued Carts –** The City should avoid collection of materials that are placed next to carts for disposal, which makes collection less efficient and poses safety risks to collection staff. Limiting collection to the material placed inside the City-issued refuse cart provides for a more equitable collection system for all residents. Non-standard containers often do not fit the mechanical tipping system of the truck, which requires collection staff have to lift them manually. This increases the risk of injury due to heavy lifting.

- **Allow Additional City-Issued Refuse Carts for a Fee –** Residents that require additional disposal capacity (more than can fit in their City-issued refuse cart) should purchase additional carts from the City. Additional carts can be purchased for a one-time fee of $50 and remain the property of the City of Hyattsville.

  The Solid Waste Division is currently funded through general taxes; therefore trash collection services are not apportioned by household. If the City adapts a PAYT program (discussed later in this report), it may consider charging each household according to its trash collection capacity. In this case, a household with two collection carts would pay a

higher rate each month (up to double that for a household with only one trash cart) for curbside collection services. This method typically improves equity because homes that generate more trash pay more for the additional service of collecting and disposing their trash.

- **Inventory Carts –** The City should set up a program for tracking the number of carts issued per residence. Such a program will help the City identify and monitor households that require additional trash capacity, and address damaged, lost, or stolen carts.

BULK WASTE

Bulk waste collection is limited to four items per pickup and four pickups annually. Bulk waste is collected on the first and third Wednesdays of each month. Residents must schedule a pickup in advance and the City limits collection to 25 households each collection day. Construction debris, hazardous waste, and landscaping debris are not accepted.

The City also operates Bulk Waste Pop-up Days for residents to drop off bulky materials.

- **Encourage Residents to Use Established Programs for Excess Service Needs** – Both the City and Prince George's County operate programs for residents to use, such as:
  - Clean up events at the Public Works Facility on multiple Saturdays in spring and fall.
  - The Brown Station Road Sanitary Landfill in Upper Marlboro, MD.

- **Continue to Skip Bulk Waste Collection for Setouts of More than Five Items per Collection –** The City's recent practice of skipping collection for bulk waste collection requests when there are more than five items setout is recommended to maintain equitable levels of service among residents.

Electronics and White Goods

Electronics and white goods collected from residents represent a small fraction of the total amount of materials collected by the City; however, they represent the most expensive materials to collect, prepare, and dispose. These materials are collected on demand. The City also provides two days a year for E-Recycling days for residents to drop off recyclable electronics. SCS recommends the following to balance quality service with the need to control costs:

- **Manage Collection Within the Bulky Refuse Program** – Electronic items and white goods should count towards the bulky refuse collection limit of four per year and four items per collection. These materials must be kept separate from trash, which requires that the City utilize additional equipment and staff.

- **Charge a Fee for Curbside Collection of Televisions and Computer Monitors and Items with Refrigerants** – The City incurs added cost from their vendors for preparing and managing materials containing refrigerants and cathode ray tubes, such as televisions and computer

monitors. Residents who require collection services for these materials should be required to pay a $25 fee to offset this additional cost.

YARD WASTE AND COMPOSTABLE ORGANICS

Yard waste and compostable organics are collected with three trucks each Monday. Common materials are leaves, brush, grass clippings, and tree branches. These materials are hauled to the Prince George's County Compost Facility. Residents use a variety of containers for collection, including 5-gallon buckets for food scraps, traditional trash cans and carts for yard waste. Bamboo, dirt, stumps, treated lumber, and pallets are not accepted.

- Encourage Use of City-Purchased Yard Waste Cart, Paper Bags, or Bundles – Use of appropriate containers or bundles allow for safe and efficient collection.

- Limit Curbside Collection to Five Bags or Bundles – The City should establish a five bag or bundle limit per collection day to control the time and effort it takes to collect these materials. Some households were observed to set out about 20 kraft bags of yard waste.

- Limit Weight of Bags and Bundles to 50 Pounds – Weight restrictions on bags and bundles will facilitate safe collection by staff. Length of items should be limited to 5 feet.

- Prohibit Use of Personal Containers – Personal containers for woody yard waste are not compatible with the collection vehicle's cart tipper and most do not have lids to prevent accumulation of precipitation.

3 MULTI-FAMILY COLLECTION

As part of this study, the City would like to explore expansion of their current residential waste collection services to include multi-family properties. Currently, multi-family properties contract with a private hauler to collect waste materials, which includes household trash and recycling. Prince George's County provides for the collection of recyclables from single-family homes but requires multi-family properties to contract with a private hauler to collection recyclables.

COLLECTION METHODS

Waste from small multi-family properties (usually between two and eight dwelling units) is often collected in carts using rear-load waste collection vehicles in similar fashion to collection from single family homes.

Larger multi-family properties (more than eight dwelling units) typically collect waste in one or more dumpsters depending on the type of building (garden style or high rise) and the number of dwelling units. Waste from larger multi-family properties is typically collected using front-load collection vehicles, which have hydraulic forks on the front to lift dumpsters so their contents fall into the vehicle's hopper.

Example of a Front Load Waste Collection Vehicle

The Department of Community and Economic Development provided a listing of multi-family properties in the City and the estimated number of dwelling units. SCS estimated annual quantities of household trash associated with each multi-family property and number and size of collection containers needed for once-per-week collection. Household trash generation rates and container capacity needs are based on a recent study SCS conducted for Montgomery County with the following findings:

- 30.8 pounds of trash are generated per dwelling week per week; and
- 0.25 cubic yards of weekly trash capacity is needed per dwelling unit.

SCS further assumed that multi-family properties with eight or less dwelling units would be serviced with carts and collected using rear-load waste collection vehicles, and larger multi-family properties (more than eight dwelling units) would be serviced with dumpsters and collected with a front-load waste collection vehicle.

Cart Collection

There are 21 multi-family properties with eight or fewer dwelling units per property. 96-gallon collection carts can contain approximately 0.5 cubic yards. Table 2 presents the weekly quantity of household trash generated for each property and the required number of carts needed to accommodate once-per-week collection. In most situations, the number of carts required was rounded up in order to provide sufficient capacity.

Table 3. Weekly Cart Collection for Small Multi-Family Properties (8 or Fewer Dwelling Units per Property)

	Apartment Complex Name	Address	Number of Dwelling Units	Weekly Trash Generation[1] (lbs)	Weekly Trash Capacity Needs[2] *(cy)*	Number of Trash Carts[3]
1	3516 Longfellow St.	3516 Longfellow Street	2	61.6	0.5	1
2	Associated Builders Apartments	4903 Baltimore Avenue	2	61.6	0.5	1
3	4217 Jefferson St.	4217 Jefferson Street	3	92.4	0.8	2
4	4300 Jefferson St.	4300 Jefferson Street	3	92.4	0.8	2
5	5504 43rd Ave.	5504 43rd Avenue	3	92.4	0.8	2
6	6108 41st Ave.	6108 41st Avenue	3	92.4	0.8	2
7	6112 41st Ave.	6112 41st Avenue	3	92.4	0.8	2
8	6120 41st Avenue	6120 41st Avenue	3	92.4	0.8	2
9	Joines Apartments	6110 41st Avenue	3	92.4	0.8	2
10	3607 Longfellow St.	3607 Longfellow Street	4	123.2	1.0	2
11	4100 Queensbury Rd.	4100 Queensbury Road	4	123.2	1.0	2
12	4112 Queensbury Rd.	4112 Queensbury Road.	4	123.2	1.0	2
13	Minott Apartments	4114 Queensbury Road	4	123.2	1.0	2
14	4206 Queensbury Rd.	4206 Queensbury Road	5	154.0	1.3	3
15	Burtumesk, LLC.	4202 Queensbury Road	5	154.0	1.3	3
16	Jk Investors, LLC.	4200 Queensbury Road.	5	154.0	1.3	3
17	Seibert 1, LLC.	5806 42nd Avenue	5	154.0	1.3	3
18	5706 42nd Ave.	5706 42nd Avenue	6	184.8	1.5	3
19	Seibert 2, LLC.	4111 Nicholson Street	7	215.6	1.8	4
20	JJM 41st Avenue, LLC.	6124 41st Avenue	8	246.4	2.0	4
21	Seibert 3, LLC.	4102 Queensbury Road	8	246.4	2.0	4
Total			**90**	**2,772 (1.4 tons)**	**22.5**	**51**

[1] Assumes 30.8 pounds of trash per dwelling unit

[2] Assumes 0.25 cubic yards of trash capacity needed per dwelling unit

[3] Assumes 96-gallon trash carts

As presented in Table 2, servicing these 21 properties with 90 dwelling units would require 51 carts to collect about 1.4 tons each week. This amount of waste can be collected with less than one route and can be accommodated using the City's existing collection staff and equipment.

Front-Load Dumpster Collection

There are 26 multi-family properties with more than eight dwelling units per property. Dumpsters with capacity of between four and eight cubic yards can be used to collect household trash generated from these properties. Table 3 presents the weekly quantity of household trash generated for each property and the required number of dumpsters by size needed to accommodate once-per-week collection. The number of dumpsters required was rounded up in order to provide sufficient capacity. The dumpster size and/or the number of dumpsters needed each week was rounded up in order to provide sufficient capacity.

Table 4. Weekly Dumpster Collection for Large Multi-Family Properties
(More than 8 Dwelling Units per Property)

	Apartment Complex Name	Address	Number of Dwelling Units	Weekly Trash Generation[1] (lbs)	Weekly Trash Capacity Needs[2] (cy)	Number of Dumpsters		
						4-CY	6-CY	8-CY
1	Salvatory Court	5700 42nd Place	11	339	2.8	1		
2	The Oliver/6030 42nd Ave., LLC.	4125 Oliver Street	17	524	4.3		1	
3	Princess Ann Apartments	5103 43rd Street	18	554	4.5		1	
4	Franklins Apartments	4310 Jefferson Street	21	647	5.3		1	
5	Royal Oaks Apartments, LLC.	4107 Oglethorpe Street	21	647	5.3		1	
6	Oliver Gardens Apartments	6103 42nd Avenue	26	801	6.5			1
7	Queensbury Park Apartments	6104 42nd Avenue	28	862	7.0			1
8	Renaissance Square Artist Housing	4307 Jefferson Street	44	1,355	11.0			2
9	Parkview Manor Apartments	5040 38th Avenue	53	1,632	13.3			2
10	Garfield Court Apartments	5715 43rd Avenue	60	1,848	15.0			2
11	Hyattsville House	6000 42nd Avenue	65	2,002	16.3			3
12	Castle Manor Apartments	5309 38th Avenue	68	2,094	17.0			3
13	Madison Park Apartments, LLC.	5902 31st Avenue	91	2,803	22.8			3
14	Signature Courtyard Park Apts.	4201 Oglethrope Street	94	2,895	23.5			3
15	Top Of The Park Apartments	4009 Gallatin Street	107	3,296	26.8			4
16	Landon Court Apartments	3601 Gallatin Street #713	116	3,573	29.0			4
17	Friendship Arms Apartments	5805 42nd Avenue	151	4,651	37.8			5
18	Prince George Apartments	3900 Hamilton Street	156	4,805	39.0			5
19	North Pointe Apartments	5720 29th Avenue	234	7,207	58.5			8
20	Palette At The Arts District	5500 Baltimore Ave.	243	7,484	60.8			8
21	Vie At University Towers, LLC.	6515 Belcrest Road.	244	7,515	61.0			8
22	Hamilton Manor Apartments	3342 Lancer Dr.	245	7,546	61.3			8
23	Mosaic At Metro	6210 Belcrest Dr.	260	8,008	65.0			9
24	The Edition Apartments	3401 East West Hwy	351	10,811	87.8			11
25	Post Park Apartments	3300 East West Hwy.	396	12,197	99.0			13
26	Kirkwood Apartments	2731 Nicholson Street	665	20,482	166.3			21
Total			**3,785**	**116,578 (58.3 tons)**	**946.3**	**1**	**4**	**124**
						129		

[1] Assumes 30.8 pounds of trash per dwelling unit

[2] Assumes 0.25 cubic yards of trash capacity needed per dwelling unit

[3] Assumes 96-gallon trash carts

As presented in Table 3, servicing these 28 properties with 3,785 dwelling units would require 129 dumpsters to collect about 58.3 tons each week. This equates to 11.7 tons per day when collecting five days per week or 14.6 tons per day when collecting four days per week. Front-load collection vehicles can collect between 10 and 14 tons per day, depending on hopper dimensions and compaction. We estimate that a single front-load collection vehicle can collect household trash from large multi-family properties over a five day collection week.

The number of dumpsters for household trash is conservative since it does not factor in property layout and space allocated for trash containers. Some multi-family properties may have limitations on the size and locations of trash dumpsters, which could affect the number of dumpsters needed at each property and/or the frequency of collection.

COLLECTION COSTS

City-managed collection of household trash from multi-family properties requires an initial capital investment for front-load collection vehicles and trash collection containers (carts and dumpsters). We have assumed that the City's existing system could accommodate trash collection at the 21 small multi-family properties that are assumed to use carts for household trash.

While a single front-load collection vehicle can likely accommodate collection the quantities of household trash generated by larger multi-family properties (more than eight dwelling units), a second front-load collection vehicle would be required as back-up for downtime from maintenance and occasional repairs. Front-load collection vehicles have an average lifespan of seven years although that can often be extended with routine maintenance.

Table 4 presents a range for the initial capital investment and annual amortization (assumed at five percent over seven years).

Table 5. Capital Investment for Collection of Household Trash at Multi-Family Properties (More than 8 Dwelling Units per Property)

Equipment		Units	Cost per Unit			Total Cost		
Front-Load Collection Vehicles		2	$200,000	to	$350,000	$400,000	to	$700,000
Dumpsters	- 4 cy	1	$1,000	to	$1,200	$1,000	to	$1,200
	- 6 cy	4	$1,100	to	$1,300	$4,400	to	$5,200
	- 8 cy	124	$1,400	to	$1,600	$173,600	to	$198,400
Carts (96-gallon)		51	$50	to	$60	$2,550	to	$3,060
Total Capital Costs						**$581,550**	**to**	**$907,860**
Annual Cost (amortized at 5% for 7 years)						$100,503	to	$156,896

Annual operation and maintenance costs associated with multi-family trash collection include the following:

- **Driver** – It is assumed that a single driver working for five days per week can collect waste from large multi-family properties. An annual salary of $60,000 is estimated since this position will require a strong safety record and skill to maneuver the vehicle in tight spaces.

- **Fuel** – It is assumed that the front-load collection vehicle will be driven an average of 75 miles per day to collect waste at multi-family properties and drive to the Prince George's County Brown Station Landfill for disposal.

- **Landfill Disposal** – It is estimated that small multi-family properties generate 1.4 tons per week and large properties generate 58.3 tons per week, for a combined total of 59.7 tons per week or 3,103 tons per year.

- **Truck Maintenance** – In addition to hopper compaction, front-load collection vehicles must also be able to lift dumpsters weighing up to 8,000 pounds; hence, maintenance costs are higher than rear-load collection vehicles. However, investments in regular and routine maintenance will extend the life of the collection vehicle.

- **Dumpster Cleaning/Repair** – Dumpsters will eventually need to be cleaned, repainted and have minor holes patched.

Table 6. Annual Operation and Maintenance Costs

Operation & Maintenance	Cost per Unit	Units	Total Cost
Driver	$60,000	1	$60,000
Fuel (per mile) [1]	$1.10	19,500	$21,450
Landfill Disposal (per ton)	$70	3,103	$217,217
Truck Maintenance (per vehicle)	$35,000	2	$70,000
Dumpster Cleaning/Repair	$5	129	$645
Total Capital Costs			**$309,312**

[1] Assumes 75 miles/day, 5 days/week, 52 weeks/year

Total annual costs related to collection of household trash from multi-family properties is between $409,000 and $467,000 annually. Options that could lower costs to the City include:

- Providing collection service to only small multi-family properties that use carts
- Requiring that multi-family properties purchase or lease their own trash containers

Additional considerations and expenses that are not included above:

- Assessment of container needs at each multi-family property
- Training of Solid Waste Division staff (drivers, support staff, customer service)
- Leasing of front-load collection vehicles

PRACTICES OF OTHER JURISDICTIONS

Municipal household trash collection services for multi-family properties is usually limited to carts and/or 35-gallon bags that can be collected with rear- or side-load vehicles (similar to that used for single-family homes). Multi-family properties that use dumpsters for trash collection are usually serviced by private haulers.

Municipal Collection that Excludes Multi-Family Properties

The following municipalities use municipal crews to collect from single family homes but exclude collection from multi-family properties:

- The City of Rockville, MD
- The City of Fairfax, VA
- The City of Seattle, WA (phasing out multi-family collection)

The following municipalities contract for collection of household trash from single family homes without provisions for collection from multi-family properties:

- City of Falls Church, VA
- Montgomery County, MD

Municipal Collection with Limited Service for Multi-Family Properties

The following municipalities use municipal crews to collect from single family homes and provide limited service to multi-family properties:

- The City of Takoma Park, MD (multi-family properties up to 12 dwelling units)

- The District of Columbia (multi-family properties up to six dwelling units)
- The City of Philadelphia, PA (multi-family properties up to two dwelling units)

The following municipalities contract for collection of household trash from single family homes with limited service to multi-family properties:

- Arlington County, VA (multi-family properties up to two dwelling units)
- St Paul, MN (multi-family properties up to four dwelling units)

Municipal Collection for Multi-Family Properties Using Carts

The following Maryland cities provide municipal collection of household trash from multi-family properties that use carts without limitations on the number of dwelling units.

- City of Laurel, MD
- City of Frederick, MD

The City of Frederick will collect up to 320 gallons per week (collection service provided Wednesday through Saturday) to multi-family properties and commercial establishments. Household trash may be set out in carts or 35-gallon trash bags.

The City of Laurel does not limit the quantity of household trash collected from multi-family properties, but they do charge each property for the number of carts serviced. Multi-family properties get five free toters each month. Every toter emptied after the fifth one is billed at $5.86 per toter. If a business has multiple toters, only those that have trash and are emptied will be counted for billing. For example, a multi-family property that receives once weekly collection from a single toter (four to five collections per month) will not receive a bill. A multi-family property that receives five collections per week (Monday through Friday) will use their free disposal in the first week and will be charged $5.86 per cart for the remainder of the month.

Municipal Collection for All Multi-Family Properties

The following cities provide municipal collection of household trash from all multi-family properties.

- City of Berkeley, CA (using municipal crews)
- City of Costa Mesa, CA (through a non-exclusive franchise agreement)
- City of Charlotte, NC (through a municipal contract for multi-family properties only)

4 PAY-AS-YOU-THROW (PAYT)

Pay-As-You-Throw, commonly called PAYT, is a solid waste rate strategy that charges households solid waste collection and disposal fees commensurate with the amount of waste they place curbside for collection or transport to a disposal facility. Simply stated, the more waste a household produces, the more the household must pay for service. Appropriately priced PAYT programs create a financial incentive for consumers to produce less waste, and thereby promoting improved reduction, re-use, and recycling.

The amount of waste is typically measured and billed according to a volumetric measurement (i.e., cubic yards, per bag, per bin). According to PayAsYouThrow.org, there are more than 7,100 communities across the U.S. that have PAYT programs.

PAYT APPROACHES

PAYT systems can take many forms. Rate structures and the type and size of containers are often related, and combinations of techniques are often used.

Bag Programs

Households purchase specially marked bags that must be used to set out waste on collection day or for acceptance at the disposal facility. The annual cost to the resident is directly proportional to the number of bags purchased and used. This approach is used by many communities in the Northeast US (Maine, Massachusetts, New Hampshire). The advantages and disadvantages of PAYT bag programs are presented in Exhibit 1.

Exhibit 2. Advantages and Disadvantages of a PAYT Bag Program

Advantages	Disadvantages
• Easy to understand • Promotes a stronger reduction incentive as fees are based on small waste increments • Lower accounting and management cost as no billing system needed • Lower distribution, storage, and inventory cost • Collection is often faster than non-automated collections • Opportunities to capture other revenue through advertising	• Greater revenue uncertainty. Fluctuation based on bag sales • Additional labor and management expense to sell bags • Customers may perceive bags as an inconvenience • Bags are more expensive than tags or stickers • Incompatible with automated and semi-automated collection systems which can lead to worker injury • Bags are more susceptible to overstuffing, damage, tearing, etc. which causes handling problems • Bags are subject to overstuffing which causes tea

Sticker or Tag Programs

PAYT sticker and tag programs are similar to the bag system in that residents purchase special tags or stickers that are affixed to each can, bag, bundle, or bulky item to be collected. Most communities with PAYT sticker and tag programs also offer cart-based collection options. The advantages and disadvantages of PAYT sticker/tag programs are presented in Exhibit 3.

Exhibit 3. Advantages and Disadvantages of a PAYT Sticker/Tag Program

Advantages	Disadvantages
• Easy to understand and less expensive to implement than bag or cart program. • Promotes a stronger reduction incentive as fees are based on small waste increments • Lower accounting and management cost as no billing system needed • Lower distribution, storage, and inventory cost	• Greater revenue uncertainty. Fluctuation based on tag/sticker sales • Additional labor and management expense to sell tags/stickers • Customers may perceive tags/stickers as an inconvenience • Tags/stickers are subject to weather impacts (e.g., adherence problems) • Incompatible with automated and semi-automated collection systems which can lead to worker injury • Tags/stickers are not as noticeable as other PAYT methods which can slow collection for checking tags/stickers and managing enforcement

Variable Cart Programs

In this system, households register for a specific size of cart or number of carts in which to place their household trash depending on their estimated waste generation. Typical cart sizes are either 64 or 96 gallons. A collection and/or disposal fee is charged commensurate with the container size or the number or containers. Under this scenario, the household gains control in choosing the waste disposal volume (and related cost) that best suits their historical disposal habits. Variable cart programs are currently operated in many areas of the U.S. and mesh well with automated collection. The advantages and disadvantages of PAYT sticker/tag programs are presented in Exhibit 4.

Exhibit 4. Advantages and Disadvantages of a Variable Cart Program

Advantages	Disadvantages
• Program revenues are relatively stable and easier to forecast • Collection carts are compatible with automated and semi-automated collection vehicles	• Potentially higher implementation costs if providing carts • Less incentive to reduce waste disposal as customers have already subscribed to a fixed volume • Billing and tracking systems are relatively more complex to manage various cart sizes

Hybrid Programs

This is an approach to PAYT that typically blends any of the above rate structures. In this system, households only pay for waste beyond a specified "base" set out volume. They pay a fixed bill or a tax bill that entitles them to a first cart or bag (or set number of bags). Then, additional waste is charged on a per bag, per sticker, or per cart system as described above.

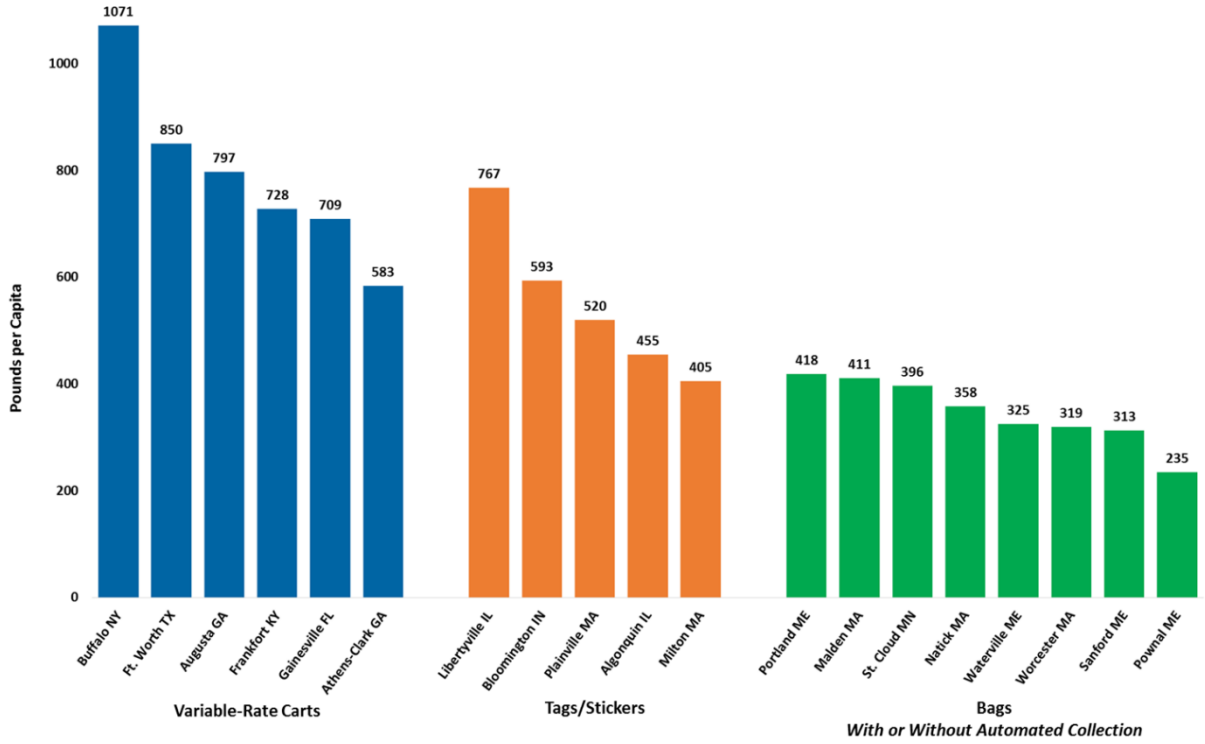
PAYT BENEFITS

In 2006, the EPA reported that on average, communities that implement PAYT programs reduce their solid waste disposal by 17 percent. About one-third of this decline is attributed to increased recycling, one-third is attributed to increased composting, and one-third attributed to residents reducing the quantity of waste generated.

More recently, the Town of New Windsor in Carroll County, MD implemented a PAYT pilot program in 2018. After two months, the Town measured a 41 percent decrease in trash quantities and a 35 percent increase in recycling quantities. Similar results have been experienced by numerous communities with PAYT programs.

Exhibit 5 presents a graphic from the PayAsYouThrow.org website which presents average trash per capita for various cities using bag, tag/sticker, and variable cart PAYT programs. From Table 2 above, City residents currently generate about 703 pounds of trash per capita annually, which is on the low end of those communities with variable cart PAYT programs but on the high end of communities with tag/sticker or bag programs

Exhibit 5. Annual Trash per Capita for PAYT Programs



Based on the range of waste disposal reductions reported by various studies, implementation of a PAYT program in the City of Hyattsville could reduce waste disposal between 17 and 41 percent, or by 561 to and 1,354 tons per year as shown in Table 7.

Table 7. Trash Reduction and Associated Landfill Disposal Costs

Metric	Current Disposal	Waste Reduction	
		17%	41%
Annual Landfilled Tons	3,303	2,741	1,949
Reduction due to PAYT Program	- -	561	1,354
Avoided Landfill Disposal Cost	- -	**$39,301**	**$94,785**

[1] Based on landfill tipping fee of $70/ton

PAYT FEES

Most communities structure rates so that higher waste volumes result in higher monthly fees to the residential households. The cities of San Jose and Oakland, CA and Austin, TX distribute the entire cost of the solid waste program (administration, public education, collection, and disposal) by the size of the trash collection cart as shown in Table 8.

Table 8. PAYT Cost per Cart in other Municipalities

City	Monthly Cost per Household			
	96-Gallon Cart	64-Gallon Cart	32-Gallon Cart	20-Gallon Cart
San Jose, CA	$137.31	$91.54	$45.77	*
Oakland, CA	$138.62	$92.29	$52.36	$46.13
Austin, TX [2]	$48.00	$27.55	$22.40	$21.15

* No 20-gallon cart available but extra garbage sticker cost is $6.25 each

[2] Includes base fee of $17.30 plus $0.16 per gallon ($0.32 per gallon for 96-gallon cart)

PAYT IMPLEMENTATION

Because PAYT charges more for increased waste disposal, some residents will be assessed a smaller fee for service but others will be assessed a greater fee for service. Suggesting a change to the current system could be met with strong public opposition, especially those who will be required to pay increased fees. Therefore, the public should be involved in the process that ultimately structures the new system. The City should provide residents with information about the purpose of the change, what the City hopes to achieve through the change, and how the new program will work. Implementation involves the following actions:

1. Assess setout rates – The City should how much trash is currently set-out per household on average. This could be the number of bags or cans per household.

2. Decide on fee structure - The fee structure will need to cover the cost of the waste collection system including administration, collection, public education, and disposal. Additionally, the number and sizes of containers will need to be decided. For example, will all residents be offered a choice of a 32-, 64-, or 96-gallon containers?

3. **Develop public education campaign** – The new PAYT will need to be promoted to the residents. Residents should be kept informed of the need for the PAYT program and how it will operate. The City should use a multitude of media to promote the new PAYT program (website, signs, brochures, letters to civic groups and HOAs, etc).

4. **Develop a campaign to prevent recycling contamination and illegal dumping** – An increase in recycling contamination can be prevalent as residents try to save costs but use their recycling carts for excess trash. The City will need to develop procedures to identify and prevent trash disposal in recycling or yard waste carts. Enforcement and penalties will also need to be established.

5. **Develop method to annually assess impact of PAYT program** – The City will want to track reductions in household trash as PAYT programs are implemented. Because the City does not manage recycling collection, coordination with Prince George's County should be established to assess increases in recycling quantities. The City should also monitor for increases in bulk waste and organics.

PAYT IMPLEMENTATION COSTS

Capital costs for PAYT implementation were estimated based on a variable-size cart program structure. Assuming that half of the household served will require a new cart or an additional cart, the capital investment in the program is estimated in Table 9.

Table 9. Estimated Capital Cost for Variable Sized Cart PAYT Program

Metric	Current Disposal
Number of Households Served	3,419
Number of Carts Required [1]	1,710
Cost per Cart	$50
Total Cart Cost	**$85,475**
Amortized at 5% over 10 years	$11,069

[1] Assumes half of households served will need either a new cart or an additional cart

Similar to variable sized cart programs, costs for bag programs will need to assess type and size of pre-printed bags, retail distribution of bags, administrative and public education programs.

PAYT RISKS

The Covid-19 pandemic stressed many trash collection programs with variable trash quantities and waste types. In a PAYT residents have to pay more to throw away larger quantities; therefore, trash can end up being stockpiled or placed in carts or bags for recycling, yard waste, or organics.. Although PAYT programs can reduce waste quantities disposed, they can also increase contamination rates in recycling and compostable organics or lead to illegal dumping.