



CARLISLE SOLID WASTE MUNICIPALIZATION

Subcommittee Research Results

INTRODUCTION

Historical Background

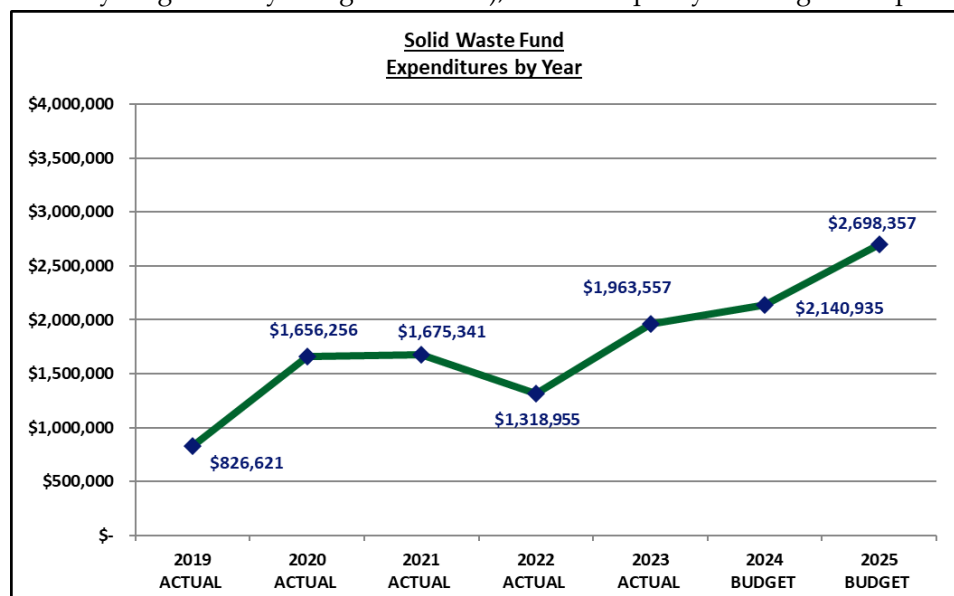
The Borough's "Pay as You Throw" (PAYT) program was implemented over 30 years ago as a response to Pennsylvania's 1988 Municipal Waste Planning Recycling and Waste Reduction Act (Act 101) that requires larger municipalities, like Carlisle, to provide curbside recycling. The PAYT program was designed to incentivize residents to generate less household trash and recycle more. Over the years the recycling market provided revenue to trash collectors who were able to subsidize the costs that were passed on to the municipality. The recycling market saw a substantial shift in 2018.

Worldwide Recycling Market Shift

In 2019, the Borough began its process of seeking bidders for a 3-year Trash and Recycling Collection Program. It was noted that since the last contract award for years 2017 through 2019, the worldwide recycling market had dramatically changed. In FY 2017, the Borough's hauler was paid by the recycling center approximately \$20.00 per ton for our recycling. A year later, China (one of the recycling industry's largest markets), enacted a policy banning the import of most plastics and other materials that did not meet strict "lack of contamination" requirements. As demonstrated in the following Graph, the Borough was directly impacted by this change starting in 2020, when the Borough renewed its contract. The results nearly doubled the cost of the program. As a result, the Borough's waste management program was modified for the new contract to take a hybrid approach to waste collection.

Designing a Hybrid Program

At the end of the 2020-2023 program, the Borough was seeking to modify its program to ensure that rates were able to be kept as low as possible in the form of revenue security to vendors. This came in the form of establishing a fixed quarterly fee that would be charged to all customers required to participate in the program. It was noted that there were cases in the Borough where customers were opting to utilize the Borough's recycling program and choosing not to participate in the Borough's trash program by disposing of their trash elsewhere. Under the PAYT program the Borough was unable to ensure that recycling only customers were paying into the program. To adjust for this program usage, the implementation of the Hybrid program ensured that every household that should be participating in the Borough's program, as required by Borough Code, was participating by billing a controlled and



fixed quarterly fee on their utility bills. The Borough began including the fixed quarterly fee on customer utility bills while continuing to sell Tags (which replaced Trash Bags) to those customers that required more than the allotted weekly trash service. The significant drop in costs in 2022 was a result of resellers like Walmart and convenience stores stopping their purchase of trash tags as our program began to transition to this hybrid approach.

Current Program

The Borough's current program is a hybrid program where all customers are charged a uniform quarterly fee for service, with the option to purchase trash tags for waste that exceeds the weekly allotment of 1 trash bag/1 container. The Borough only received one bid and awarded the contract to that bidder, Waste Connections. The Borough's contract was initially for 2023 through 2025, but Borough Staff recommended that we extend the contract by 2 years to allow additional time to evaluate our Waste Management Program and, if feasible, implement an alternative program. The current contract includes 7% rate increases for each year of the contract.

Municipalization Study

Due to the Borough only receiving one bid during the last contract period, it has become evident that there is insufficient competition in the market to allow for adequate competitive bidding. As a result, the Borough has little control over the rates received for this necessary service. Based on this fact, the Borough has opted to research implementing an internal Waste Management Program with the intent of determining whether a more affordable solution could be provided at an intended higher level of service. At a minimum, such an evaluation would allow the Borough the opportunity to determine if the rates currently being charged are considered reasonable based on market costs.

Sustainable Resources Consulting Study

The Borough initially contracted the services of Steven Deasy, owner of Sustainable Resources Consulting, to provide an initial evaluation of whether a municipal program could be realistic for Carlisle. Mr. Deasy presented to Borough Council on September 4, 2024, reporting that the Borough could achieve Long-Term Cost Savings and implement Collection System Improvements should the Borough opt to internally manage this Waste Management Program. He recommended a more robust study be undertaken to determine actual feasibility under the Borough's current programming.

2025 Subcommittee on Solid Waste Municipalization

Building on to the Sustainable Resources Consulting Study, Borough Council gave the directive for a Subcommittee to be formed to perform an in-depth analysis on developing a Borough Operated Waste Management Program. This was intended to consider the potential costs of the program and the level of service we could offer. The committee consisted of:

- Borough Council Members | Cate Mellen; Jeff Stuby
- Borough Staff Members | Jeff Bergsten; Jason Cohen; Corey Flythe; Richard Juday
- Community Members | Jimmy Evans; Deb Fulham-Winston (Former Councilor)

The committee met on a weekly to bi-weekly basis to go over the research that has been conducted to date, gain an understanding of the current program's strengths and weaknesses, and begin designing a Waste Management Program that would work for the Borough of Carlisle. After several meetings and interviews with industry experts, a competitive program was developed. The committee then began obtaining quotes and projecting the costs of implementing the designed program.

Designing a Waste Management Program

The committee identified several factors that needed to be considered when designing a competitive program. These factors consisted of:

- Staffing
- Vehicle Purchases
- Containers & Tags
- Infrastructure
- Tipping Contracts
- Other Operational Expenses
- Financial Policies & Practices

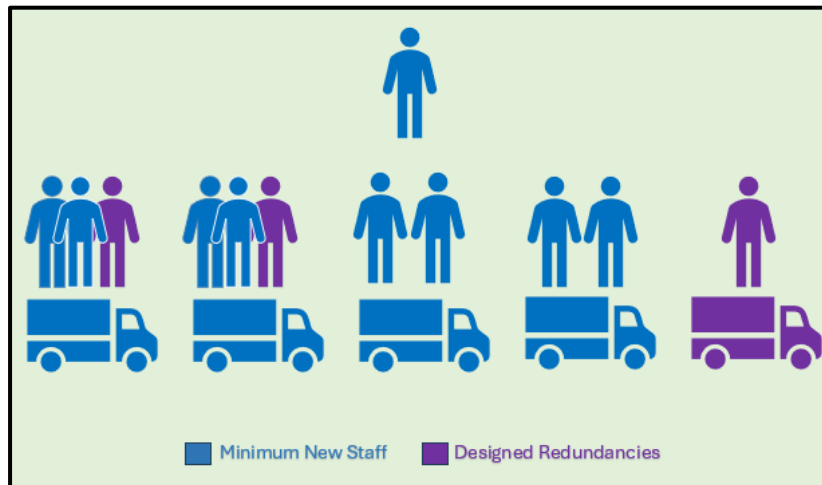
The internal Waste Management Program, as designed, is described in detail throughout this report.

STAFFING

The primary cost driver for this new program is the costs associated with the wages and benefits to fully staff the program. Remaining consistent with the Borough's responsible budget practices, the committee recommended taking a conservative approach to anticipating program needs. This included building in "designed redundancies" which will be evaluated as the program matures, and actual needs are determined. Waste Management is a vital service requiring sufficient staffing to ensure successful program operations during planned or even unexpected employee absences. This requires a balance between minimum staffing and overstaffing levels. Additionally, the committee built the program assuming that every new hire will require Family Medical Insurance, the costliest benefit offered at the Borough.

Positions

The following positions are anticipated as being needed and are built into the costs of the designed program.



Director of Transportation and Waste Management (1 Full-Time)

This position already exists and is anticipated to oversee any newly implemented Waste Management programs. Note: Budgeting for this position is accounted for in the "Shared Administrative Costs" section given duties of this positions are shared amongst all funds.

Administrative Assistant (1 Part-Time)

This position already exists and is anticipated to be the primary point of contact for customers who may have concerns regarding their Waste Management services. Note: Budgeting for this position is accounted for in the "Shared Administrative Costs" section given duties of this positions are shared amongst all funds.

Operations Manager (1 Full-Time)

This will be a newly created position expected to be filled by 1 full-time employee. The Operations Manager will be responsible for the onboarding, development, coaching, mentoring, and performance management of all drivers and loaders within the organization. This position will also assist in the management and design of routes or route changes.

Truck Driver (4 Full-Time)

These will be newly created positions expected to be filled by 4 full-time employees. The Truck Driver will be required to have a CDL (B) or higher and will be responsible for safely operating and maintaining a collection truck.

Loader (6 Full-Time)

These will be newly created positions expected to be filled by 6 full-time employees. Two of these employees are anticipated to be designed redundancies to support the program. The Loader will assist the Truck Drivers on specified routes and manually collect solid waste and transport it to the appropriate disposal sites. Loaders will have the opportunity and will be encouraged to obtain a CDL (B) or higher allowing them to move to the Hybrid Driver/Loader position.

Hybrid Driver/Loader (1 Full-Time):

This will be a newly created position expected to be filled by 1 full-time employee. This is a redundancy designed to fill in for either Truck Drivers or Loaders as needed. It is anticipated that after the initial program implementation, Loaders will be encouraged to become certified and move into this position.

Designed Redundancies

The Committee interviewed a prior waste management employee who used to work on routes for the Borough, but now actually works in the Borough's Water Resources Department. Based on that conversation, the historical daily requirements to serve the Borough were 2 Recycling Trucks and 1 Garbage Truck each containing only 1 Driver and 1 Loader. This was during a time when the Borough operated strictly on a pay-as-you-throw model. In 2023, the Borough switched its model to billing all required participants a quarterly fee which changed the demand for service. The primary change to the program resulted in participants that had avoided using the Borough's program in the past were now paying for the waste management program and likely to start participating. Additionally, the Borough has changed to allow customers to utilize 35-gallon containers in place of setting out 1 bag. These program changes are likely to modify the speed at which the Loaders can operate, and the quantity of waste collected.

The committee has proposed 2 Recycling Trucks and 2 Garbage Trucks for minimum operations and 1 additional interchangeable vehicle for redundancy. Staffing redundancies include the addition of 2 additional loaders (1 each for the garbage trucks) and 1 hybrid position that would be a floating loader assisting on whichever crew was short. This hybrid position would also be able to drive the 5th garbage truck on heavy waste generating days or to assist on days where there is significant bulk waste.

Projected Costs

For each of the newly created positions, we projected the anticipated costs over a 10-year period, assuming all designed redundancy positions remain in place. For budgeting purposes, the positions were costed out to show the market midpoint wage of each position, as well as assuming family medical benefit coverages. Please note that the already existing positions of Director of Transportation and Waste Management as well as the Administrative Assistant position are included in the "Shared Administrative Costs" section of our analysis and not shown here given they are already accounted for in our budget.

Operations Manager (1 Full-Time Position)			
Budget Costs	Per Employee Year 1 Total	Year 1 Projected Program Totals	Year 10 Projected Program Totals
Yearly Wage	\$ 76,000	\$ 76,000	\$ 99,163
Yearly Medical	53,000	53,000	82,220
Yearly Dental	1,100	1,100	1,706
Yearly Vision	150	150	233
Yearly Life Insurance	150	150	233
Disability Insurance	1,526	1,526	2,367
Workers Compensation	3,900	3,900	6,050
FICA	5,814	5,814	7,586
Pension (6.5%)	4,940	4,940	6,446
Total	\$ 146,580	\$ 146,580	\$ 206,004

Truck Driver (4 Full-Time Position)			
Budget Costs	Per Employee Year 1 Total	Year 1 Projected Program Totals	Year 10 Projected Program Totals
Yearly Wage	\$ 52,000	\$ 208,000	\$ 271,393
Yearly Medical	53,000	212,000	328,882
Yearly Dental	1,100	4,400	6,826
Yearly Vision	150	600	931
Yearly Life Insurance	150	600	931
Disability Insurance	600	2,400	3,723
Workers Compensation	2,500	10,000	15,513
FICA	4,000	15,912	20,762
Pension (6.5%)	3,400	13,520	17,641
Total	\$ 116,858	\$ 467,432	\$ 666,600

Loader (6 Full-Time Position)			
Budget Costs	Per Employee Year 1 Total	Year 1 Projected Program Totals	Year 10 Projected Program Totals
Yearly Wage	\$ 46,000	\$ 276,000	\$ 360,117
Yearly Medical	53,000	318,000	493,322
Yearly Dental	1,100	6,600	10,239
Yearly Vision	150	900	1,396
Yearly Life Insurance	150	900	1,396
Disability Insurance	600	3,600	5,585
Workers Compensation	2,500	15,000	23,270
FICA	3,519	21,114	27,549
Pension (6.5%)	2,990	17,940	23,408
Total	\$ 110,009	\$ 660,054	\$ 946,282

Hybrid (1 Full-Time Position)			
Budget Costs	Per Employee Year 1 Total	Year 1 Projected Program Totals	Year 10 Projected Program Totals
Yearly Wage	\$ 49,000	\$ 49,000	\$ 63,934
Yearly Medical	53,000	53,000	82,220
Yearly Dental	1,100	1,100	1,706
Yearly Vision	150	150	233
Yearly Life Insurance	150	150	233
Disability Insurance	600	600	931
Workers Compensation	2,500	2,500	3,878
FICA	3,749	3,749	4,891
Pension (6.5%)	3,185	3,185	4,156
Total	\$ 113,434	\$ 113,434	\$ 162,182

Total All New Positions			
		Year 1 Projected Program Totals	Year 10 Projected Program Totals
Total		\$ 1,387,500	\$ 1,981,069

Potential Savings

The Committee recommends designing redundancies throughout the initial program to provide additional funding coverage for unknown or unexpected costs. However, certain aspects of this program, as designed, are likely not to be as costly as we are anticipating. These areas of potential savings are shown below:

Wages

The Borough budgets all new positions assuming that new employees will come in at the midpoint wage point for these positions, however, the experience of each new employee will dictate the level at which they are paid, with less experienced individuals falling under budget and more experienced individuals coming in above budget. Historically, budgeting the midpoint position for new positions has helped to offset the range of wage levels that we can expect.

Medical Coverage

The Borough budgets all new positions assuming that every position will be filled with employees who require family medical coverage, the costliest benefit offered. Historically, the Borough only sees about 30% of non-uniform employees needing full family coverage and approximately 50% of total employees needing either family medical coverage or employee and children coverage. The Borough does not offer medical coverage to Spouses that are able to get insurance through their own employer.

Designed Redundancies

As previously identified, the Borough has built redundancies into the level of staff we anticipate needing. As a result, as the program matures and the positions open, the need to fill these positions will be evaluated and could lead to additional savings compared to the program as currently designed.

VEHICLE PURCHASE

The purchase of a Garbage/Recycling Truck consists of purchasing two separate pieces of equipment. The first is deciding what type of garbage/recycling compaction is needed and then finding a Truck/Chassis that can accommodate it. For the purposes of this study, we designed two different trucks to identify the varied costs that may be included.

Comparison to the Sustainable Resources Consulting Study

The initial study included costs for the purchase of 4 vehicles. Our costs include the purchase of 5 vehicles so that the Borough has sufficient coverage should a vehicle be out for maintenance needs or should the vehicle be needed in periods of high waste generation.

Projected Replacement Schedule

The vehicles are estimated to be replaced between a 5-to-10-year span, with an initial replacement schedule consisting of one replacement at 5 years, 7 years, and 9 years. It is anticipated that garbage trucks will be the first to need replaced based on usage and recycling vehicles anticipated to last longer. The 5th vehicle would be rotated into regular usage as vehicles are replaced.

Rear Loader:

This product is assumed to include two tippers and would enable the Borough to operate on a two-man crew (1 Driver/1 Loader) if needed. For costing purposes, we proposed outfitting both Garbage Trucks with a 3-Person crew (1 Driver / 2 Loaders) and both Recycling Trucks with a 2-Person Crew (1 Driver / 1 Loader) with 1 Hybrid Position that would fill in as a Driver or Loader as needed. The rear loaders are capable



of handling bulk items, with the only limitation being the abilities of the crew needing to lift the items into the truck.

Demonstration of Standard Two Tipper System:

The vehicle proposed will include two tippers, this will allow the two loaders to simultaneously dump containers into the backs of the trucks. A demonstration of a two-tipper system can be found here:

<https://youtu.be/X9n7QS28X5E?si=2eD6ASOPStOKPdqs&t=29>

Demonstration of exact truck, with Bulk Item Adapter.

While not recommended as part of this waste management program design, there are alternative vehicle designs that would provide specific bulk item solutions. The downside to such a design is that it is a specialized vehicle that would not be usable for tipping waste/recycling containers. An example of this can be found here:

<https://youtu.be/4QwFAY8Akj4?si=DVS0ww-aezWsyJm5&t=250>

Project Costs for a Rear Loader

The committee has designed this proposed program to include a standardization of a single type of rear loading vehicles for recycling and garbage. This will allow a level of redundancy in that the vehicles can be used interchangeably during periods of significant need, or if there are periods of heavy bulk items, we could utilize any of the vehicles to collect the bulk items. As the end-of-life approaches (planned for 5 years), the types of replacement vehicles could be considered and adjusted to meet identified needs.

Rear Loader Cost	
Chassis	\$ 175,000
25 Yd. Rear Loader (with Cart Tipper)	\$ 145,000
Subtotal Per Vehicle	\$ 320,000
Total (Subtotal x 5 Vehicles)	\$1,600,000
Yearly Debt Service:	\$ 360,000

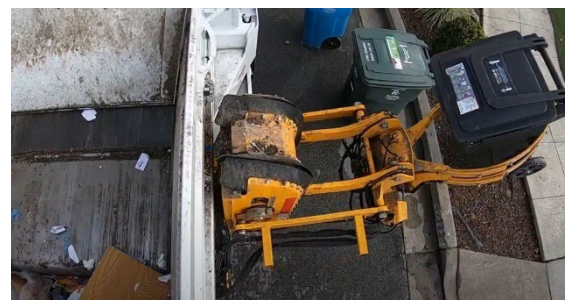
Side Loader:

This product is automated with cameras and could be managed by a 1-person crew (1 Driver). However, for collecting non-contained trash bags, we would propose a minimum of a 2-person crew (1 Driver / 1 Loader). It should be noted that a Side Loader is insufficient for collecting Bulk Items and would not be capable of directly accepting loose bagged items outside of containers. For tagged bags, a Loader would have to utilize nearby containers to load the items into and then use the lift to pick up that repacked container. For this reason, the committee would only recommend a Side Loader if it were coupled with other Rear Loader Trucks.

The Side Loader is capable of picking up any sized container and can change the size of container from house to house should the program be designed with alternative sized containers. The Side Loader arm can also be managed from controls inside the vehicle by the driver, or alternative controllers nearer the tire to allow the driver to jump in and out of the vehicle and still operate the arm.

Demonstration of the Automation Capabilities:

<https://www.youtube.com/watch?v=QfFISvmsx3c&t=76s>



Project Costs for a Side Loader

The committee is not recommending the purchase of a Side Loader initially, however, it is recommended that as the program matures, it be considered as a replacement should the Borough find an efficient use for it.

Side loader	
Chassis	\$ 175,000
29 Yd. Side Loader (with Cart Tipper)	\$ 210,000
Subtotal Per Vehicle	\$ 385,000
Total (Subtotal x 5 Vehicles)	\$1,925,000
Yearly Debt Service:	\$ 430,000

Future Opportunities:

As the program matures, the Borough might consider replacing the 5th vehicle with an alternative vehicle designed to advance the program and offer other revenue generating services. This could include purchasing a vehicle that can accommodate commercial dumpsters to allow the Borough to offer its services to non-residential customers.

CONTAINERS & TAGS

To ensure optimal safety and overall quality of life for our Loaders, the Committee is proposing that we require all customers to utilize a Borough issued trash container and Borough issued recycling container (exception discussed below). Such a process will reduce, but not eliminate, the amount of lifting that the crew will need to perform on a given shift by utilizing the truck's built in rear loader lifting system. Under the existing contract, customers use a 35-gallon recycling container (with a smaller option available if necessary) and can utilize their own selected 35-gallon trash container (not designed for rear lifting).

Container Sizing

The Committee is recommending that the program be designed to provide each customer with one 35-gallon trash receptacle to match the existing 35-gallon recycling containers. As noted in the chart on the right, the U.S. EPA has translated gallons in Uncompacted Municipal Solid Waste to Pounds. This suggests that the recommended base level container will allow approximately 48 pounds worth of solid waste. This would be 8 pounds more than the currently allowed 40-pound limit. Additionally, the committee also suggested considering making larger sizes available to customers who can accommodate the containers, while charging them a higher quarterly fee to account for this additional waste generation. For purposes of the analysis, the committee assumed the program included 100% participation in the container program.

Uncompacted Municipal Solid Waste Weight (U.S. EPA)		
Volume in Cubic Yards	Volume in Gallons	Weight in Pounds
1	202	275
0.47035751	95	129
0.32182356	65	89
0.2280093	45	61
0.17328961	35	48

Trash Tags

The Borough currently offers trash tags at an additional per tag fee that will allow current customers the ability to dispose of additional trash outside of their 1 weekly bag. The committee is proposing that every loose bag of trash that is set outside of the Borough provided trash container be required to have a tag.

Container Exception

For customers that are unable to accommodate a 35-gallon trash container, the customer would have the opportunity to appeal to the Borough Engineer (similar to the current program) and seek alternative options. The Committee's initial proposal would be to offer the alternative option of receiving 52 tags per year in place of a Borough issued container. No adjustments to the quarterly rate were accounted for in this recommendation.



Projected Costs

The proposed waste management program assumes the purchase of 12,000 new containers. This includes providing new recycling containers and new trash containers to each customer with replacements available for purchase. The cheapest version of container is limited to basic colors and was built into the current program. However, there are a variety of colors available depending on the selected vendor with the most expensive color (Pink) being about \$195,600 (or 52%) more expensive than base colors, not considering debt service.

The current recycling containers are, based on the 2020 – 2022 contract, owned by Waste Connections and may end up being returned to the contractor at the end of the current service contract.

Basic Color Container Cost (Assumed 12,000 Units)		
Container Type	Total Cost	Yearly Debt Service
35 Gallon Container (Current Program)	\$ 374,400	\$ 83,000
45 Gallon Container	\$ 403,200	\$ 90,000
65 Gallon Container	\$ 510,000	\$ 113,000
95 Gallon Container	\$ 552,000	\$ 123,000

Pink (Most Expensive Color) Container Cost (Assumed 12,000 Units)		
Container Type	Total Cost	Yearly Debt Service
35 Gallon Container (Current Program)	\$ 570,000	\$127,000
45 Gallon Container	\$ 591,000	\$131,000
65 Gallon Container	\$ 738,000	\$164,000
95 Gallon Container	\$ 810,000	\$180,000

Potential Savings

The following potential savings may be available:

Using Existing Recycling Containers

Should Borough Council decide to move forward with an internal waste management program, Borough staff would meet with the current contractor to determine the possibility keeping or purchasing the existing recycling containers. Such a purchase would reduce both the cost of having to supply new recycling containers but also the labor to furnish and deliver new recycling containers.

Note: As designed, the Waste Management Program assumes that new containers will be purchased and provided to customers and is not counting on the current vendor allowing the Borough to utilize the existing containers.

INFRASTRUCTURE

In consideration of Infrastructure needs, the Borough evaluated the need for housing of our vehicles. It is anticipated that vehicle storage will be maintained at the Public Works Garage. Based on the nature of the vehicles, it was determined that the best method for storing the vehicles would be in a 3-sided structure that would allow for adequate ventilation. This structure is currently proposed to be a prefabricated building with lighting and electrical receptacles.

Based on initial estimates received, the committee has designed the proposed waste management program to incorporate \$100,000 in costs to build such a facility with a yearly debt service totaling approximately \$25,000 per year for 5 years.



Future Potential Opportunities

Additional infrastructure that could be considered in the future, which is not built into the cost of this initial waste management program consists of:

Vehicle Washing Facilities

The Borough has considered a Vehicle Washing Station for existing Borough Vehicles in the past but has yet to install such infrastructure which would consist primarily of the plumbing necessary to wash the vehicles, and a built-in catch basin where contaminated runoff would be stored. The contaminated water would then be pumped out and transported to a treatment facility.

This facility is not built into the initial waste management program, and instead the program is designed to utilize existing truck washing businesses to clean the outside of the Garbage/Recycling trucks, as necessary. The Committee spoke to Blue Beacon Truck wash located on the Harrisburg Pike who is the closest truck wash available (9 minutes one-way). The Committee also spoke to a Fleet Clean out of Harrisburg which specializes in coming to the Borough's facility, cleaning the trucks, and removing the contaminated water on a recurring and scheduled basis.

Recycling Transfer Station

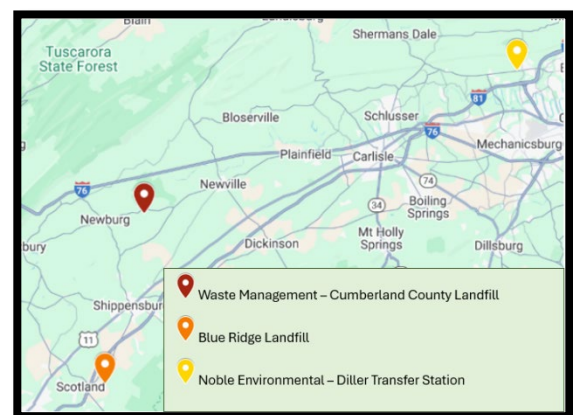
The Borough could reduce the number of miles traveled by building a Transfer Station at one of its existing facilities. This would allow the waste management crews to take their loads to the Borough's facility dump the loaded trucks and when enough is collected, transport the recycling to the recycling processing facilities. Such an installation would incur additional capital costs to put in place the necessary trucks and hauling equipment.

TIPPING CONTRACTS

Should the Borough implement an internal waste management program, it would still be reliant on 3rd party service providers to process the Borough's collected waste and recycling. Such services would take the form of a multi-year contract and could either be contracted directly with the service provider, or a 3rd party transfer station.

Waste Disposal

When considering the availability of service providers for waste disposal, the Borough identified several providers that vary in distance and pricing. To evaluate the cost of each provider, the cost for diesel is accounted for in the total trip cost. Based on conversations with the vehicle manufacturer, it is reasonable to estimate that a loaded truck will be able to achieve approximately 5 miles / gallon.



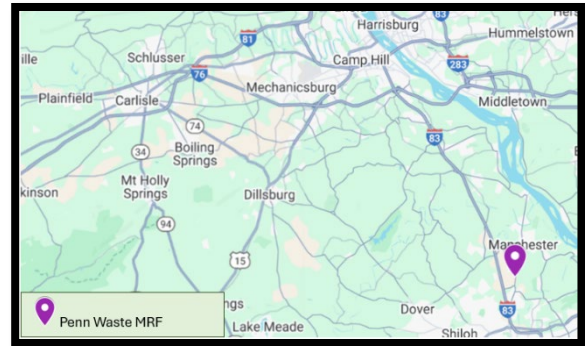
The following table shows the estimated costs of waste disposal:

Refuse / Bulk Items (4,800 tons per year)				
Location	Total Miles	Tipping Fees	Diesel Cost	Total Cost
Cumberland County Landfill <i>Newburg (\$50 / Ton)</i>	42	\$240,000	\$18,000	\$258,000
Blue Ridge Landfill <i>Chambersburg (\$107 / Ton)</i>	56	\$513,600	\$24,000	\$537,600
Diller Transfer Station <i>Enola (\$85 / Ton)</i>	28	\$408,000	\$12,000	\$420,000

Recycling Processing

Service providers for recycling processing are significantly reduced with the closest and most feasible processing location being the Penn Waste Materials Recovery Facility (MRF).

The following table shows the estimated costs of Recycling Processing:



Recycling (1,200 tons per year)				
Location	Total Miles	Tipping Fees	Diesel Cost	Total Cost
Penn Waste Recycling Center <i>Manchester (\$110 / Ton)</i>	76	\$132,000	\$32,000	\$164,000

Potential Savings

The following potential savings may be available:

Contracting with Transfer Station

While the committee was unable to negotiate potential service providers during this phase of the research, the closest transfer station that currently exists is the Noble Environmental - Diller Transfer Station. While they provide recycling transfer services in other locations, they currently do not offer recycling services in the facility nearest the Borough. The Borough could approach and potentially contract with this facility to determine if they would be open to providing these services. While costs would likely increase, it would save approximately 1 hour in travel time for each recycling truck.

Borough Owned Transfer Station

As identified in the infrastructure section, the Borough could consider installing a transfer station to help reduce the number of daily trips required to travel to the Recycling Center.

OPERATIONAL EXPENSES

The committee utilized existing Borough programs to help develop estimates for ongoing operational expenses including the Bio-Solids Program and the Street sweeping Program.

OPERATIONS (Excluding Wages, Benefits & Debt Service)		
Expense	Per Unit	Total Per Year
Wellness	\$200/employee	\$2,400
Overtime	\$2,000/employee	\$24,000
Vehicle Fuel & Oil	\$15,000/active truck	\$ 60,000
Uniform Allowance	\$500 / employee	\$6,000
Office Supplies	\$400 / year	\$400
Postage	\$250 / year	\$250
Operating Supplies	\$4,000 / year	\$4,000
Cleaning Supplies	\$500 / year	\$500
Vehicle Supplies	\$14,000 / year	\$14,000
Vehicle Maintenance	\$15,000 / truck	\$75,000
Maintenance Supplies	\$10,000 / year	\$10,000
Small Tools & Equipment	\$3,000 / year	\$3,000
Pest Control Services	\$400 / year	\$400
Telephone	\$100 / year	\$100
Radio Maintenance	\$500 / year	\$500
Photocopy	\$100 / year	\$100
Rental - Equipment	\$12,000 / year	\$12,000
Other Service Fees	\$2,000 / year	\$2,000
Dues & Subscriptions	\$150 / year	\$150
Licenses & Permits	\$1,350 / year	\$1,350
Training	\$3,000 / year	\$3,000
Total		\$219,150

Contracted Maintenance

While the cost for this service was not included in the designed program, the Committee was informed that the Vehicle Manufacturer/Reseller, offers a Contracted Maintenance Program which would include them coming on-site for repairs and also making available a Rental Unit that could replace our vehicle while it was out of service. Such an arrangement may provide savings in terms of needed equipment on hand.

FINANCIAL POLICIES & PRACTICES

The analysis of our financial policies as it relates to this new program resulted in a few recommendations that the committee is proposing. Some of these considerations are flexible and could be modified to allow for price smoothing depending on how they are implemented.

Shared Administrative Costs

Following existing financial operation practices, there are shared administrative costs that each operating fund (Water, Sewer, Stormwater, Parking) contribute to in the General Fund. These costs include portions of Finance Operations, the Managers Office, Engineering, Legal Fees etc. For purposes of this calculation, we assume the Solid Waste Fund (which is currently operating as a pass-through fund) will start out matching the lowest contributing fund, which is Parking at 3% of these shared costs. The figure was inflated slightly to account for additional contributions towards the wages and benefits of the Waste Management Department's Director and Administrative Staff currently on-staff. We anticipate that these shared costs will start at about \$150,000 per year.

Financial Policy Reserve

As part of the Borough's Adopted Financial Policies, we call for a 25% Operating Expense Reserve Goal to be on hand for the Solid Waste Program, to ensure adequate cash flow be available for an emergency or delay in revenues. As such, the proposed Waste Management Program has built in a surplus each year for 5 years to ensure that we have adequate funding on hand. The designed program will meet and keep this reserve goal as currently designed starting in the 5th year of the program.

Fund	Reserve Goal
General	25%
Water	25%
Stormwater	25%
Sewer	50%
Parking	50%
Solid Waste	25%

Vehicle Replacement Reserve

Due to the regular replacement of vehicles needed in this program, the committee is proposing that we set aside a vehicle replacement reserve which will be structured to directly fund new vehicles as they are needed. Under the current program design, these funds will be sufficient to cover the cost of replacement vehicles in years 5, 7, and 9 of our 10-year outlook. Any excess reserves beyond the "Financial Policy Reserve" discussed above, will go towards this vehicle replacement reserve as well as go towards funding any new infrastructure the Borough may be interested in going forward.

FUNDING THE PROGRAM

There are several considerations that were made to not only fund the program over a 10-year period, but also to fund the initial start-up costs for the programs. As designed, the committee is presenting 2 options for funding but there is any number of ways to fund the new program while also considering quarterly fee smoothing.

Capital Needs

As designed the program currently has approximately \$2.4 Million in capital outlays to start the program including vehicles, containers, and infrastructure installed. Our Financial Advisors offered a conservative estimate of 3.5% of interest for a 5-year Bond. A longer period of time would be between 4.5% and 5% but it is not recommended given the life expectancy of the vehicles is approximately 5 years. The Borough's policy on issuing debt is to match the life of the debt with the life expectancy of the purchased asset.

Operating Needs

The program is expected to require at least 1 quarter of wages and benefits prior to the start of the collection period to get the program up and running prior to the 1st collection day. We further have budgeted an additional 2 quarters for cash flow purposes, to allow the Borough time to bill and collect payments for services. Billings occur after the fact so a period of no-cash being deposited is to be expected. We estimate that these operating startup needs totaling about \$1.1 million.

Other Revenue Sources

Tags: \$120,120 per year

The Borough currently sells additional trash tags, with one bag needed for each additional 40-pound trash bag placed curbside. In 2027, the price for disposal will be \$10.92/bag. Based on recent years' activities, a conservative estimated sales total of about 11,000 bags. The Committee's analysis assumed consistent trash tag pricing over the 10-year period at \$10.92/tag. While pricing adjustments weren't included in the designed program, the committee recommends developing tag prices to match the needs of the final program.

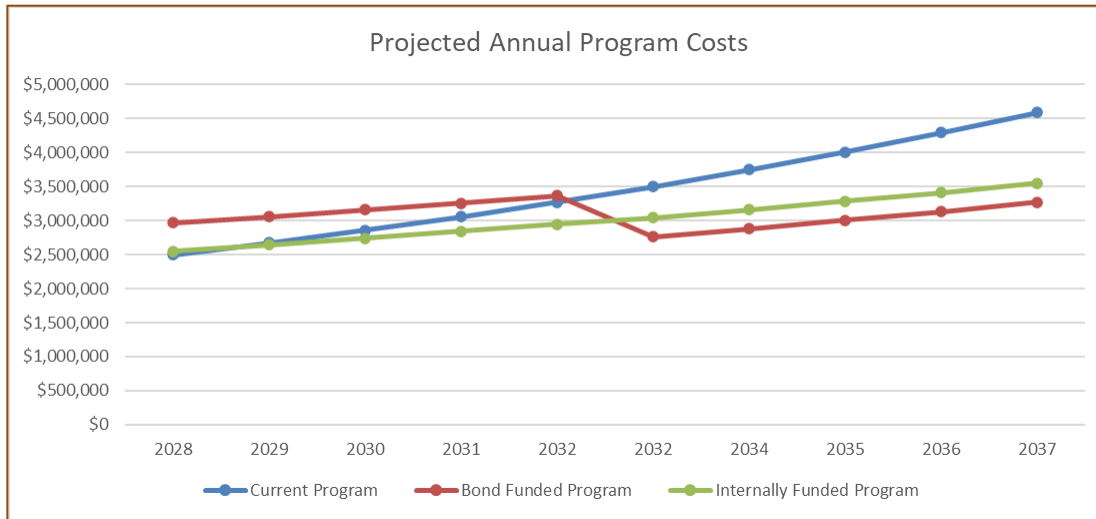
This would result in 11,000 bags x \$10.92 = \$120,120 / year

Recycling Grant: \$35,000 per year

Each year the Borough receives a Recycling Grant which varies depending on the amount recycled. A conservative estimate is \$35,000 per year.

Funding Designs

There are several ways to structure our financing of this program, but we looked at 2 primary ways that would allow us to achieve a successful and affordable program in comparison to where we project our current program to end over a 10-year period. These estimates are not adjusted for price smoothing.



Current Program – 3rd Party Vendor:

The current program is projected to increase 7% per year over 10 years. This estimate is based on the 2020-2027 Contract the Borough currently has in place which calls for 7% increases each year of the contract period. While it is possible that this will fluctuate over the next 10 years, the Borough can expect that the first year of the next contract will be adjusted upward to account for market corrections missed during the last contract.

Bond Funded Program: (As Recommended)

A Bond Funded Program is proposed to account for the \$2.4 Million in capital funding needed to start up the program at 3.5% interest built in. It is also assumed to include \$1.1 Million in an operating loan at 2% interest from the General Fund/Capital Projects Fund.

Internally Funded Program: (As Recommended)

An Internally Funded Program is proposed to account for \$3.5 Million in an internal loan from the General Fund. We assumed a 20-year payback at 5% interest which will help with initial program pricing while also adequately paying back the General Fund with market rate interest rates.

The interest rate was set at 5% to match the market rates provided by our Financial Advisors. This rate could be adjusted; however, it is important to keep in mind that there is an opportunity cost to the General Fund related to the years of interest revenue that would be missed during the loan period.

Fully Funded Internally – No Loan: (Not Recommended and Not Shown)

The program could be fully funded with no expectation of Payback through an internal transfer from the General Fund/Capital Projects Fund. However, this option is not shown above and is not recommended, due to the burden of this being placed directly on the taxpayers and the lost revenue associated with interest that could otherwise be collected. As an enterprise fund, good financial practices suggest designing the program to pay for the costs of service, rather than relying on tax generated revenues.

QUARTERLY PER DWELLING UNIT COST

The committee developed projections for a per dwelling unit cost, assuming the current participation level of 5,934 dwelling units/customers. These estimates are not the final rates that would be charged to customers as there are financial considerations that would allow for price smoothing to take advantage of price savings that may occur later in the program. The following tables are excerpts from the 10-year analysis included in the appendix of this report.

Yearly Estimated Cost:

The following Table shows the estimated net Program costs which will be used to determine potential Per Dwelling Unit Costs.

Adjusted Total Estimated Program Costs	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Total Net Program Costs	\$2,967,530	\$3,059,924	\$3,156,890	\$3,258,682	\$3,365,566	\$2,759,828	\$2,877,768	\$3,001,705	\$3,131,978	\$3,268,947

Anticipated Current Program Quarterly Unit Costs:

The following Table estimates a projection for the current program costs. This is calculated assuming a 7% annual increase (which is the current annual contract increase). It does not account for further expected increases due to Market Corrections during the signing of a new contract.

Projected Rate (Current Contract)	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Current Contract Comparison (Qtrly)	\$105.19	\$112.56	\$120.43	\$128.86	\$137.88	\$147.54	\$157.86	\$168.91	\$180.74	\$193.39

Bond Funded Program Costs (As recommended):

The following Table demonstrates quarterly per dwelling unit costs (not modified for price smoothing) should the Borough fund the program with bonds. It assumes a bank bond for capital purchases and a General Fund loan for operating start-up expenses. (Note: The Orange highlight represents the year the per dwelling unit cost is expected to provide savings as compared to 3rd party contracts).

Cost Per Dwelling Unit	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Cost Per Quarter/Dwelling Unit	\$125.02	\$128.91	\$133.00	\$137.29	\$141.79	\$116.27	\$121.24	\$126.46	\$131.95	\$137.72

Internally Funded Program Loan (20 yr. 5% int.) Quarterly Unit Costs (As Recommended):

The following Table demonstrates quarterly per dwelling Unit Costs (not modified for price smoothing), should the Borough fund the program with a loan of up to \$3.5 million. This assumes payback over 20 years at a 5% interest rate. (Note: The Orange highlight represents the year the per dwelling unit cost is expected to provide savings as compared to 3rd party contracts)

Loan - 20 yr. Payback @ 5% interest	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Cost Per Quarter/Dwelling Unit	\$107.45	\$111.35	\$115.43	\$119.72	\$124.22	\$128.11	\$133.08	\$138.30	\$143.79	\$149.56

Fully Funded Internally No Loan Quarter Unit Costs:

The following Table demonstrates quarterly per dwelling Unit Costs (not modified for price smoothing), should the Borough fund the program with a contribution of up to \$3.5 million. This assumes no Payback. (Note: The Orange highlight represents the year the per dwelling unit cost is expected to be lower than 3rd party contracts)

Contribution - No Payback	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Cost Per Quarter/Dwelling Unit	\$95.62	\$99.51	\$103.59	\$107.88	\$112.38	\$116.27	\$121.24	\$126.46	\$131.95	\$137.72

CONCLUSION & RECOMMENDATIONS

The committee has concluded that the Borough would be able to successfully achieve long-term savings and implement improvements to the program should Borough Council elect to internalize this service. In summary, a successful program would consist of:

Staffing – Hire up to 12 new employees (1 Operations Manager, 4 Drivers, 1 Hybrid Driver/Loader, 6 Loaders). This includes 3 designed redundancies in workforce.

Vehicles – Purchase 5 Rear Loader Vehicles. This includes 1 designed redundancy in vehicles. Evaluate alternative vehicles during replacement to include potential program growth opportunities.

Containers – Purchase 35-gallon base level containers for program participants. Evaluate adding options for customers to receive a larger sized container with an increased quarterly fee. Require every customer to either

have a tagged bag or container to receive service.

Infrastructure – Contract the installation of an external (75 foot by 45 foot) 3-sided building for the storage of 5 Garbage/Recycling Trucks.

Tipping Contracts – Engage with landfill and recycling centers to enter a multi-year contract for disposal/recycling of collected solid waste materials.

Financial Soundness – Follow Borough Council’s already established financial policies to ensure the long-term success of the program, including establishing a fund balance at 25% of Operating Expenditures and develop a vehicle reserve fund.

Should Borough Council desire to move forward with an internal program, the committee recommends the following next steps:

Timeline	Description
July 2025 to Implementation	Begin a robust education campaign to include social media, paper flyers, Quality of Life Improvement Surveys, and public meetings.
October 2025	Finalize Funding Strategy for 2026 Budget Development
October 2025	Start Operational Program Design to include Route Improvements, Parking Modifications, and Quality of Life Enhancements for Customers
January 2026	Order Vehicles
January 2027	Container Purchase
Sept. 2027 to Implementation	Hiring of Staff Finalized and Containers deployed
December 2027	Finalize Any Adjustments Needed to Borough Code
January 2028	Service Started

APPENDIX 1

2025 RATE COMPARISONS TO SURROUNDING MUNICIPALITIES

This table presents a comparison of our Utility Rates and incorporates the Trash rates of surrounding municipalities for 2025. We show both the cost on a per bag basis (35 gallons) as well as on a quarterly fee basis. Keep in mind that these are multi-year contracts (starting and ending at various times) and most contracts can expect market corrections when they renew.

2025 QUARTERLY CHARGE COMPARISON FOR RESIDENTIAL CUSTOMERS						
12,000 gallons Usage Per Quarter						
Municipality	Water	Sewer	Stormwater (Per ERU)	Trash (Per 35 Gallons)	Total	Trash (Actual Minimum Charge)
						Quarterly
Middlesex Township	31.50	47.25	-	32.99	\$111.74	\$ 90.48
Shippensburg Borough	82.33	99.83	15.00	16.33	\$213.49	\$ 56.00
North Middleton Township	80.44	87.94	24.00	41.08	\$233.46	\$ 111.50
South Middleton Township	63.00	149.00	-	39.98	\$251.98	\$ 109.65
Newville Borough	162.89	112.10	-	20.23	\$295.22	\$ 55.50
Borough of Carlisle	108.93	122.89	21.00	85.86	\$338.68	\$ 85.86
Upper Allen Township	156.37	99.50	16.50	105.00	\$377.37	\$ 96.00
Lower Paxton Township	156.37	158.00	26.00	42.41	\$382.78	\$ 116.32
Mechanicsburg Borough	156.37	136.00	28.00	101.72	\$422.09	\$ 93.00
Hampden Township	281.66	102.54	13.25	39.76	\$437.21	\$ 109.05
*** Silver Spring Township	281.66	144.00	27.00	34.69	\$487.35	\$ 95.16
Camp Hill Borough	281.66	201.00	30.00	35.97	\$548.63	\$ 98.67
Lemoyne Borough	281.66	401.10	23.10	111.02	\$816.88	\$ 101.50
*** depending on address in Silver Spring Township, some residents have PA American Water and others have Veolia Water (formerly known as Suez)						

APPENDIX 2

PROJECTION ANALYSIS

This table presents a 10-Year projected analysis of program costs. The assumptions included inflationary adjustments that were pulled from recent rate studies performed by Gannet Fleming for the Water & Sewer Program. The assumptions also include actual quotes received for certain costs or are based on other programs offered and supported by the Borough.

10-Year Projected Analysis											
Description	Assumptions	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Wage & Benefits (12 Employees)		\$ 1,387,500	\$ 1,442,971	\$ 1,500,799	\$ 1,561,089	\$ 1,623,950	\$ 1,689,500	\$ 1,757,857	\$ 1,829,148	\$ 1,903,506	\$ 1,981,069
Yearly Wage	3%	\$ 609,000	\$ 627,270	\$ 646,088	\$ 665,471	\$ 685,435	\$ 705,998	\$ 727,178	\$ 748,993	\$ 771,463	\$ 794,607
Yearly Medical (Family Coverage Assumed)	5%	\$ 636,000	\$ 667,800	\$ 701,190	\$ 736,250	\$ 773,062	\$ 811,715	\$ 852,301	\$ 894,916	\$ 939,662	\$ 986,645
Yearly Dental (Family Coverage Assumed)	5%	\$ 13,200	\$ 13,860	\$ 14,553	\$ 15,281	\$ 16,045	\$ 16,847	\$ 17,689	\$ 18,574	\$ 19,502	\$ 20,478
Yearly Vision (Family Coverage Assumed)	5%	\$ 1,800	\$ 1,890	\$ 1,985	\$ 2,084	\$ 2,188	\$ 2,297	\$ 2,412	\$ 2,533	\$ 2,659	\$ 2,792
Yearly Life Insurance	5%	\$ 1,800	\$ 1,890	\$ 1,985	\$ 2,084	\$ 2,188	\$ 2,297	\$ 2,412	\$ 2,533	\$ 2,659	\$ 2,792
Disability (AD&D, STD, LTD)	5%	\$ 8,126	\$ 8,532	\$ 8,959	\$ 9,407	\$ 9,877	\$ 10,371	\$ 10,890	\$ 11,434	\$ 12,006	\$ 12,606
Workers Compensation	5%	\$ 31,400	\$ 32,970	\$ 34,619	\$ 36,349	\$ 38,167	\$ 40,075	\$ 42,079	\$ 44,183	\$ 46,392	\$ 48,712
FICA	7.65%	\$ 46,589	\$ 47,986	\$ 49,426	\$ 50,909	\$ 52,436	\$ 54,009	\$ 55,629	\$ 57,298	\$ 59,017	\$ 60,787
Pension (6.5%)	6.50%	\$ 39,585	\$ 40,773	\$ 41,996	\$ 43,256	\$ 44,553	\$ 45,890	\$ 47,267	\$ 48,685	\$ 50,145	\$ 51,649
Non-Payroll Expenses		\$ 1,109,150	\$ 1,143,073	\$ 1,179,151	\$ 1,217,532	\$ 1,658,371	\$ 833,836	\$ 1,280,107	\$ 929,374	\$ 1,381,844	\$ 1,037,734
Initial Vehicle Purchase (Debt Service)	N/A	\$ 360,000	\$ 360,000	\$ 360,000	\$ 360,000	\$ 360,000	\$ -	\$ -	\$ -	\$ -	\$ -
New Vehicle Purchase (Fund Balance)		\$ -	\$ -	\$ -	\$ -	\$ 400,000	\$ -	\$ 400,000	\$ -	\$ 400,000	\$ -
Tipping Fees (Solid Waste - Newburg)	7%	\$ 258,000	\$ 276,060	\$ 295,384	\$ 316,061	\$ 338,185	\$ 361,858	\$ 387,188	\$ 414,292	\$ 443,292	\$ 474,322
Tipping Fees (Recycling)	7%	\$ 164,000	\$ 175,480	\$ 187,764	\$ 200,907	\$ 214,971	\$ 230,018	\$ 246,120	\$ 263,348	\$ 281,783	\$ 301,507
Container Costs (35 Gallon -Black) (Debt Service)		\$ 83,000	\$ 83,000	\$ 83,000	\$ 83,000	\$ 83,000	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Improvements (Debt Service)	N/A	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -
Operational Expenses	2%	\$ 219,150	\$ 223,533	\$ 228,004	\$ 232,564	\$ 237,215	\$ 241,959	\$ 246,798	\$ 251,734	\$ 256,769	\$ 261,905
Adjustable Estimates		\$ 626,000	\$ 629,000	\$ 632,060	\$ 635,181	\$ 638,365	\$ 391,612	\$ 394,924	\$ 398,303	\$ 401,749	\$ 405,264
Shared Administrative Costs *	2%	\$ 150,000	\$ 153,000	\$ 156,060	\$ 159,181	\$ 162,365	\$ 165,612	\$ 168,924	\$ 172,303	\$ 175,749	\$ 179,264
Operating Loan (Start-up) *	N/A	\$ 230,000	\$ 230,000	\$ 230,000	\$ 230,000	\$ 230,000	\$ -	\$ -	\$ -	\$ -	\$ -
Financial Policy Reserve *	25%	\$ 166,000	\$ 166,000	\$ 166,000	\$ 166,000	\$ 166,000	\$ -	\$ -	\$ -	\$ -	\$ -
Vehicle Replace Reserve *	N/A	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 226,000	\$ 226,000	\$ 226,000	\$ 226,000	\$ 226,000
Unadjusted Total Estimated Program Costs											
Estimated Program Cost		\$ 3,122,650	\$ 3,215,044	\$ 3,312,010	\$ 3,413,802	\$ 3,920,686	\$ 2,914,948	\$ 3,432,888	\$ 3,156,825	\$ 3,687,098	\$ 3,424,067

10-Year Projected Analysis (Continued)

Additional Revenue

Offsetting Additional Revenue (Adjustable)		(\$155,120)	(\$155,120)	(\$155,120)	(\$155,120)	(\$155,120)	(\$155,120)	(\$155,120)	(\$155,120)	(\$155,120)	(\$155,120)
Use of Fund Balance Reserves						(\$400,000)		(\$400,000)		(\$400,000)	

Adjusted Total Estimated Program Costs

Total Net Program Costs		\$2,967,530	\$3,059,924	\$3,156,890	\$3,258,682	\$3,365,566	\$2,759,828	\$2,877,768	\$3,001,705	\$3,131,978	\$3,268,947
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Cost Per Dwelling Unit

Number of Billings (5,934 Dwelling Units x 4 Qtrs.)		23,736	23,736	23,736	23,736	23,736	23,736	23,736	23,736	23,736	23,736
Cost Per Quarter/Dwelling Unit		\$125.02	\$128.91	\$133.00	\$137.29	\$141.79	\$116.27	\$121.24	\$126.46	\$131.95	\$137.72

Fund Balance Analysis

Fund Balance Reserve		\$ 246,000	\$ 492,000	\$ 738,000	\$ 984,000	\$ 830,000	\$ 1,056,000	\$ 882,000	\$ 1,108,000	\$ 934,000	\$ 1,160,000
% of Operating Costs		9%	17%	24%	31%	25%	39%	31%	38%	31%	36%

Projected Quarterly Rate (Current Contract)

Current Contract Comparison *	7%	\$105.19	\$112.56	\$120.43	\$128.86	\$137.88	\$147.54	\$157.86	\$168.91	\$180.74	\$193.39
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*Assumes no market correction for new contract and simply goes on the recurring annual increases in the current contract of 7%

What If Analysis? (Front Load Program With Committed Funds/No Debt Service)

Cost Per Quarter/Dwelling Unit (No Payback)		\$95.62	\$99.51	\$103.59	\$107.88	\$112.38	\$116.27	\$121.24	\$126.46	\$131.95	\$137.72
Cost Per Quarter/Dwelling Unit (10-yr / 0%)		\$110.36	\$114.25	\$118.34	\$122.63	\$127.13	\$131.02	\$135.99	\$141.21	\$146.70	\$152.47
Cost Per Quarter/Dwelling Unit (20-yr / 5%)		\$107.45	\$111.35	\$115.43	\$119.72	\$124.22	\$128.11	\$133.08	\$138.30	\$143.79	\$149.56