

FUNDING A SOLID WASTE FLEET REPLACEMENT PROGRAM

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In May 2016, the City of Pensacola, Florida retained SCS Engineers (SCS) to conduct an updated solid waste cost of services and rate study. Based on data and information provided by City staff, a pro forma rate model (Model) was developed, which enabled SCS to make projections of financial performance of solid waste collection and disposal for the upcoming five-year, planning period (FY 2017-2022) and model different possible rate structures. This article provides a discussion of the methodology used to conduct the analysis, the revenue requirements of the City's solid waste program as determined by the analysis, and proposed fees and charges to be considered by the City of Pensacola City Council.

Current monthly charges (residential and commercial) include the following:

- Container charges - \$18.36
- Disposal charges - \$4.44
- Fuel surcharge - \$0.90

RATE SCENARIOS

SCS developed the following rate scenario options for consideration by the City Council:

- **Option 1, "Status Quo"** – This option assumes that the estimated deficits in projected annual operating revenues would be met by raising customer rates on an annual basis or transfers from the City's General Fund.
- **Option 2, "Annual CPI Increases in Monthly Sanitation Rate"** – This option assumes a full recovery of projected Department revenue needs through increases in monthly customer fees. The Department would continue to assess individual monthly charges for fuel and landfill services.
- **Option 3, "Increase Sanitation Rate by \$1.26 to Account for Increases in Annual Operating Costs and for Changes in the Cost of Recycling Processing"** – This option assumes a full recovery of projected Department revenue needs through increases in monthly customer fees as in Option 2 and accounts for the continuation of recycling processing fees which began in 2016.
- **Option 4, "Implement a Long-Term Funding Program for Fleet Replacement"** – This option assumes establishing a Sanitation Equipment Surcharge of \$2.17 per month to establish a Sanitation Equipment Fund under the Sanitation Fund. In order to achieve full funding of equipment needs, this surcharge could initially set at \$1.00 per month and increased by \$1.17 per month for the following year. Alternatively, the City

could use its Local Option Sales Tax (LOST) Fund for a portion of the needed vehicle replacement cost for yard and transfer station vehicles and set the surcharge at \$1.32 per month.

CURRENT SERVICES

The City provides a variety of sanitation core services (Exhibit 1) including once a week, automated collection of single-family homes (18,480 customers) and 640 commercial businesses. These accounts are serviced using City-provided rolling carts. In addition, residential customers are provided once a week, single-stream recycling, yard waste and bulk waste collection. Other important services provided include the following: container maintenance, Mayor's neighborhood cleanups, event recycling sponsorship, and storm cleanup and management.

Exhibit 1. Core Services Provided By Sanitation Services



Exhibit 2 graphically illustrates current sanitation staffing by program area. Current monthly charges (residential and commercial) include the following:

- Container charges - \$18.36
- Disposal charges - \$4.44
- Fuel surcharge - \$0.90

Exhibit 2. Current Sanitation Staffing



COST SAVINGS AND EFFICIENCIES

In helping ensure regulatory compliance and value to the City's ratepayers, the Division has implemented a number of cost saving programs recommended as part of the 2007 Rate Study. These are briefly discussed in the paragraphs that follow below.

- Reduced personnel costs by implementing MSW collection to once a week.
- Signed Interlocal Agreement with Escambia County - This agreement requires the City to provide 10 neighborhood cleanups in return for free disposal for yard trash. This equates to an annual savings to the City of \$350,000 per year.
- Compressed Natural Gas (CNG) Collection Vehicles – The City has been purchasing CNG vehicles for its collection fleet to take advantage of the fuel savings associated with natural gas. These vehicles are also expected to reduce the City's greenhouse gas emissions and carbon footprint.
- Recycling Savings and Rate Increases – The City transports city-collected recyclables to Tarpon Paper at a reduced tipping fee (when compared to the Perdido Landfill).

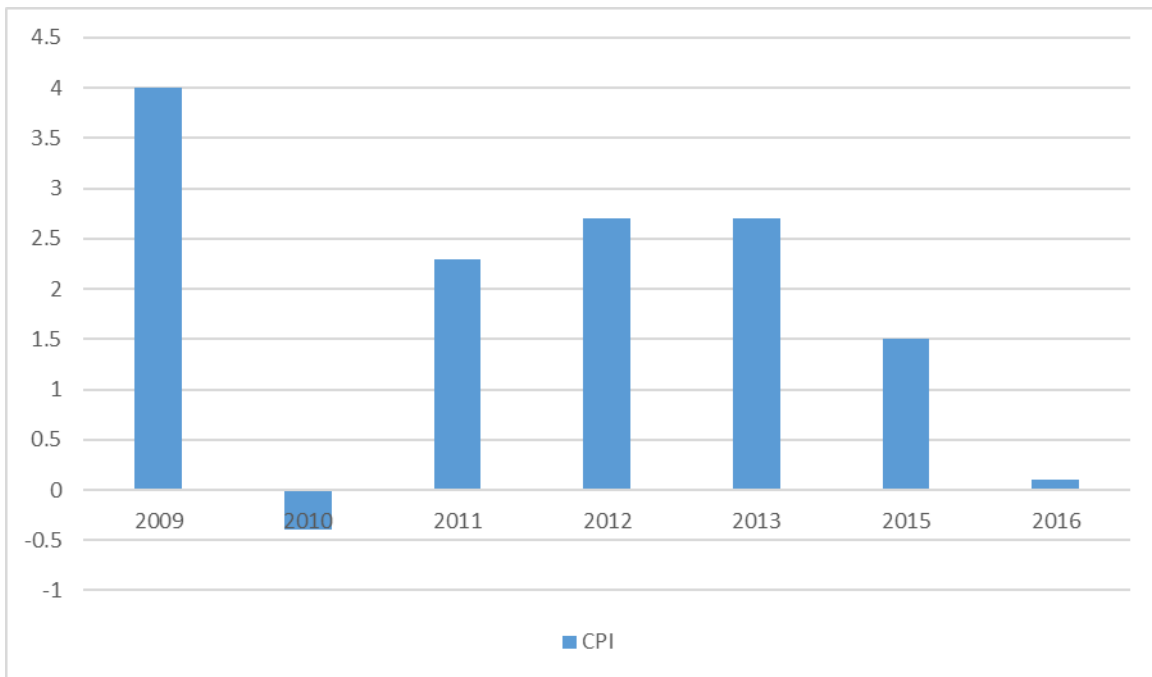
When the City's recycled yard trash volume is considered, the city's recycling rate is approximately 46 percent.

The Emerald Utility Authority (ECUA) recently constructed and began operating a materials recovery facility (MRF) located at the County's Perdido Landfill. It was anticipated that this facility would enable more cost-effective recycling processing alternatives for residents of Escambia and neighboring communities. However, city staff was unable to reach an equitable agreement with ECUA on the contract and the City continues to use Tarpon Paper for recycling processing.

ANNUAL RATE ADJUSTMENTS

The rate ordinance, which was established as part of the SCS rate study in 2007, provides for the monthly garbage collection fee to be automatically adjusted, based upon the percentage difference in the most recent annual Consumer Price Index (CPI). Exhibit 1 shows CPI increases from 2009 to 2016. Since the effective date of the ordinance (October 1, 2008), however, the City Council has only raised sanitation rates only once (Fiscal Year 2012).

Exhibit 3. CPI Rates (%) 2009 - 2016



The rate ordinance established in 2007 also established a vehicle fuel and lubricant pass-through surcharge, which is added as a separate line item to monthly bills issued to sanitation customers. The surcharge is reviewed monthly and has been increased and decreased as necessary. Currently, the surcharge is set at \$0.90 and is reflective of the current price of fuel used in the city's Sanitation Services operation.

PRO FORMA MODEL

DATA COLLECTION

At the beginning of SCS's engagement, City staff provided background data and information concerning residential collection revenues and operating expenses. This included the following critical information:

- Staffing and organizational charts.
- Wages and benefit rates.
- Rate schedules.
- Loans.
- Fund account summaries (totals and comparisons).
- Past and current operating budgets by cost centers.
- Equipment replacement and maintenance schedules.
- Waste and recyclables deliveries to Escambia County and Tarpon Paper.
- Fleet replacement plan.
- Ordinances.
- Administrative costs.

RATE MODEL

At the outset of the work effort, SCS developed an updated Microsoft Excel™ spreadsheet-based, pro-forma model (Model) to assist in the completion of the rate analysis. This model includes the following facets:

- An analysis of operational expenditures (personnel, contract and purchased services, materials and supplies, transfers).
- Analysis of capital outlays (equipment replacement and capital projects).
- Revenue sufficiency analysis (annual revenue projections and rate plan to provide sufficient revenues).
- Funds analysis (reserve requirements, transfers to general fund, administrative costs, beginning and ending fund balances). Based on data and information provided by the City, these individual spreadsheets were linked to develop an overall model to conduct the rate and assessment analysis.

METHODOLOGY OVERVIEW

The following methodology was utilized by SCS to conduct the cost of service analysis:

- **Collect Historical Actual Expenses and Revenues for the City System** – The first task was to gather available historical actual revenue and cost data from 2008 and include these into a financial database.
- **Develop of the “Test Year”** - The second task was the development of an annual revenue requirement for a “Test Year”. The revenue requirement represents the total revenue for the System to recover during a year to fund all sanitation costs. SCS worked with City staff to select a period that reflected a typical year for the System. Actual expenses for FY 15/16 were used as the basis of the Test Year for the Study. SCS then worked with City staff to make these costs more representative of anticipated conditions during the upcoming five-year financial planning horizon. The resulting Test Year was used as the basis for forecasting expenses for the five-year forecast (FY 16/17 to FY 21/22).
- **Develop of a Revenue Requirement Projection** – After developing the revenue requirement for the Test Year, SCS worked with City staff to project changes in anticipated costs due to inflation, labor increases, facility and vehicle maintenance, planning costs, etc. This resulted in a five-year revenue requirement forecast for the entire system including collection, recycling, and disposal of solid waste.
- **Revenue Offsets** – SCS worked with City staff to develop estimates of other revenues such as bulk item collection charges, business refuse container charges, new accounts/transfer fees, fuel surcharge, County landfill fees, interest income, rebates, sale of assets, and miscellaneous.
- **Determination of the Number of Customer Units** – SCS worked with City staff to develop reasonable estimates of future number of customers over the next five-year period (assumed to be 18,460 residential and 640 commercial customers).
- **Calculation of the Monthly Customer Service Fee** – SCS then distributed the revenue needs across the proper billing units to estimate the cost of service.

DEVELOPMENT OF THE REVENUE REQUIREMENT PROJECTION

In addition to developing the Test Year revenue requirements, SCS forecasted the annual revenue requirement for FY 16/17 to FY 21/22. In order to develop the forecast, SCS projected how costs would change over the forecast period due to factors such as inflation, solid waste and customer growth. The assumptions used to develop the forecast include the following annual increases:

- CPI - 2.1 percent (12-year average 2004-2015, U.S. Department of Labor).
- Solid waste and recyclables growth – 0 percent.
- Customer growth – 0 percent.

The Department manages the following cost centers to support solid waste operations:

- Residential Garbage Collection – Cost Center 0507010.

- Recycling Collection – Cost Center 0507015.
- Transfer Station – Cost Center 0507030.
- Yard Waste Collection – Cost Center 0507050.

Exhibit 4 identifies the revenue needs for the Department for FY 16/17 to FY 21/22, if monthly charges are not increased. As shown, the Sanitation Fund is projected to have a small deficit in FY 2017, but increases substantially over the next five years to account for increases in operating expenses for the four cost centers over this time period.

FLEET REPLACEMENT PLAN

The Department has developed a 10-year Fleet Replacement Plan (Plan) to replace equipment and vehicles (Exhibit 5). The fleet has seen a substantial rise in repair and maintenance expenses as these vehicles have aged. Typically, most “best-in-class” sanitation collection systems are on a six to eight-year replacement cycle for automated side-loaders. The Department’s current vehicles are well beyond that preferred replacement cycle with many being replaced in 2008. Similarly, the Department’s yard waste collection and ancillary vehicles are also well beyond the preferred replacement cycle for these equipment. The Plan is designed to establish a reasonable vehicle and equipment replacement cycle over the next decade and enable the Department to reduce maintenance expenses. As shown, the Plan projects a funding need for the Department’s fleet of \$6.5 million over this planning period.

Many municipal sanitation departments have developed long-term fleet funding programs in lieu of annually cash expensing these vehicle purchases. These funding plans vary from a long-term, direct surcharge on their customers to transfers from the General Fund or use of local option sales tax programs (LOST). The later funding option is oftentimes chosen if some of the vehicles are used for community-wide activities. For example, the Department typically utilizes its fleet of yard trash collection trucks and ancillary rolling stock such as transfer station tractor/trailers in response to major and minor natural disasters (e.g. hurricanes, tornados, microbursts, etc.). Their use is somewhat different than traditional yard waste collection and can be viewed as extraordinary in nature and provides an essential betterment of the City as a whole. Consequently, a reasonable argument can be made for funding these vehicles solely or partially from the City’s LOST Program.

Exhibit 5 provides detailed analysis of two alternative, long-term funding options: (1) enacting a \$2.17 per month fleet replacement surcharge for the entire vehicle need; or (2) utilizing the LOST Program to fund the purchase of yard waste and transfer station vehicles and enacting a \$1.50 per month fleet replacement surcharge for purchase of the garbage collection/recycling/pickup vehicles.

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RECOMMENDATIONS AND COUNCIL ACTION

SCS made the following recommendations:

- Establish a rate of \$24.06 per month in FY 15/16 for residential and commercial customers.
- Increase these rates annually based on a CPI adjustment.
- Implement a long-term funding program, as described in the report, for fleet replacement.

Exhibit 4. Department Projected Revenue Needs, Status Quo

Financial Metrics	ACTUAL			PROJECTED					
	2014	2015	2016	2017	2018	2019	2020	2021	2022
Operating Revenues	5,782,948	5,821,743	5,828,729	5,972,600	6,068,800	6,113,600	6,113,600	6,113,600	6,113,600
Deduct for Fuel and Lubricants that are included				(500,000)	(510,542)	(521,306)	(532,296)	(543,519)	(554,978)
Deduct for non-rate revenues that are included				(225,000)					
Deduct for Equipment Surcharge				0					
Deduct for \$.35 projected rate increase that is included				0					
Total Rate Revenues to be considered as part of the Monthly Rate				5,247,600					
Operating Expenses By Cost Center									
Collection	2,764,433	3,020,364	3,254,299	3,255,450	3,320,888	3,387,948	3,456,360	3,526,155	3,597,362
Recycling	698,960	725,577	893,605	940,900	956,554	892,267	911,079	930,287	949,901
Transfer Station	651,468	365,296	347,695	403,000	411,497	420,172	429,031	438,076	447,312
Yard Trash	1,694,204	1,552,308	1,638,029	1,662,000	1,697,041	1,732,820	1,769,353	1,806,657	1,844,748
Subtotal Operating Expenses	5,809,065	5,663,545	6,133,628	6,261,350	6,385,979	6,433,207	6,565,823	6,701,176	6,839,322
Deduct for Fuel Surcharge				(500,000)					
Deduct for Non-Rate Expenses	5,584,065	5,438,545	5,908,628	(225,000)	6,160,979	6,208,207	6,340,823	6,476,176	6,614,322
Deduct for capital truck purchase				0					
Total of Rate Related Expenses				5,536,350					
Net Revenues of Rate Related Rev vs Expenses (Deficits)	(26,117)	158,198	(304,899)	(288,750)	418,363	426,699	305,073	180,944	54,256

Exhibit 5. Proposed Department Fleet Replacement Plan

	Fiscal Year										Ten Year Totals
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
Garbage/Recycling Truck Replacement	1	0	1	1	1	1	1	1	1	1	9
Per Truck Cost	\$290,000	\$296,114	\$302,357	\$308,732	\$315,241	\$321,887	\$328,674	\$335,603	\$342,679	\$349,904	
Total Cost	\$290,000	\$0	\$302,357	\$308,732	\$315,241	\$321,887	\$328,674	\$335,603	\$342,679	\$349,904	\$2,895,078
Yard Trash Truck Replacement	0	1	1	1	1	1	1	1	1	1	9
Per Truck Cost	\$0	\$120,000	\$122,530	\$125,113	\$127,751	\$130,445	\$133,195	\$136,003	\$138,870	\$141,798	
Total Cost	\$0	\$120,000	\$122,530	\$125,113.34	\$127,751.15	\$130,444.57	\$133,194.77	\$136,002.96	\$138,870.36	\$141,798.21	\$1,175,705
Transfer Station Truck Replacement	0	0	1	0	0	1	0	0	0	1	3
Per Truck Cost	\$0	\$0	\$150,000	\$153,163	\$159,689	\$170,004	\$184,800	\$205,121	\$232,475	\$269,032	
Transfer Station Trailer Replacement	0	0	0	0	1	0	0	1	0	0	2
Per Trailer Cost	\$0	\$0	\$0	\$0	\$85,000	\$86,792	\$90,490	\$96,335	\$104,720	\$116,235	
Total Cost	\$0	\$0	\$150,000	\$0	\$85,000	\$170,004	\$0	\$96,335	\$0	\$269,032	\$770,371
Pickup Trucks Replacement	0	1	1	0	1	0	1	0	1	0	5
Per Truck Cost	\$0	\$35,000	\$35,738	\$0	\$27,000	\$27,569	\$28,151	\$28,744	\$29,350	\$0	
Total Cost	\$0	\$35,000	\$35,738	\$0	\$27,000	\$0	\$28,151	\$0	\$29,350	\$0	\$155,238
Number of Vehicles Replaced	1	2	4	2	4	3	3	3	3	3	28
FUNDING OPTIONS											
ALL VEHICLES @ \$2.17 SURCHARGE											
Annual Cash Purchase Cost	\$290,000	\$155,000	\$610,625	\$433,845	\$554,992	\$622,336	\$490,019	\$567,942	\$510,899	\$760,734	\$4,996,393
Truck Capital Fund at \$2.17 surcharge	\$497,364	\$497,364	\$497,364	\$497,364	\$497,364	\$497,364	\$497,364	\$497,364	\$497,364	\$497,364	\$4,973,640
Truck Capital Fund Year End Balance	\$207,364	\$549,728	\$436,467	\$499,986	\$442,357	\$317,386	\$324,731	\$254,153	\$240,617	-\$22,753	
COLLECTION VEHICLES @ 1.32 SURCHARGE AND LOST FUNDING FOR YARD AND TRANSFER STATION VEHICLES											
Annual Cash Purchase Cost	\$290,000	\$35,000	\$338,095	\$308,732	\$342,241	\$321,887	\$356,824	\$335,603	\$372,029	\$349,904	\$3,050,316
Truck Capital Fund at \$1.32 surcharge	\$302,544	\$302,544	\$302,544	\$302,544	\$302,544	\$302,544	\$302,544	\$302,544	\$302,544	\$302,544	\$3,025,440
Truck Capital Fund Year End Balance	\$12,544	\$280,088	\$244,537	\$238,349	\$198,652	\$179,308	\$125,028	\$91,969	\$22,484	-\$24,876	

After discussion and two public readings of the ordinance amending the sanitation rate, the Pensacola City Council adopted a monthly sanitation rate of \$24.06. In addition, City Council established a sanitation equipment surcharge of \$1.00 per month with a provision to raise the surcharge to \$2.00 for FY 2019. These additional revenues will enable the full funding of departmental services to continue and will provide for ongoing replacement of sanitation equipment.

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