



City of Fresno  
Solid Waste Division Five-Year Rate Plan  
City of Fresno Public Utilities



September 25, 2018



HF&H Consultants, LLC

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201 N. Civic Drive, Suite 230  
Walnut Creek, California 94596  
Telephone: 925/977-6950  
[www.hfh-consultants.com](http://www.hfh-consultants.com)

Robert D. Hilton, Emeritus  
John W. Farnkopf, PE  
Laith B. Ezzet, CMC  
Richard J. Simonson, CMC  
Marva M. Sheehan, CPA  
Robert C. Hilton, CMC

September 25, 2018

Mr. Jerry Schuber  
Assistant Director of Public Utilities  
City of Fresno  
2600 Fresno Street  
Fresno, California 93721

**Subject: Five-Year Rate Plan**

Dear Mr. Schuber:

We have completed the five-year rate plan for the City of Fresno Solid Waste Division for rate years FY 2020 – FY 2024. Our recommendations and related assumptions and calculations are documented in the enclosed report.

\* \* \* \*

We are pleased to have had the opportunity to assist the City of Fresno with this study and would like to thank you for your support during the project.

If you have any questions, please call me at (925) 977-6961.

Sincerely,

HF&H CONSULTANTS, LLC



Marva M. Sheehan, CPA  
Vice President

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## SECTION I: EXECUTIVE SUMMARY

HF&H Consultants, LLC (“HF&H”) was retained by the City of Fresno Solid Waste Management Division (“Division” or “SWMD”) to independently assess and evaluate the existing residential collection service model (“Rate Model” or “Model”) and rates for the next five year rate cycle, consisting of Fiscal Years (“FY”) 2020 through FY 2024 (July 1, 2019 - June 30, 2024) and to provide recommendations for changes to those rates that will provide the revenue to allow the Division to adequately fund the SWMD Enterprise Fund operations costs during that period. The evaluation focused on the Rate Model utilized by the Division to record and project revenues and expenses and the inclusion and allocation of costs within that Model. Our review of the Rate Model and the associated costs found the following:

### Review of Division Rate Model

Prior to beginning our review we discussed assumptions and significant changes in programs and costs to be included in the Rate Model with Division staff. Based on that discussion the following assumptions and items were utilized in the Rate Model:

- The current residential collection service rates have not been adjusted since FY 2010.
- Residential collection service rates could not be increased prior to July 1, 2019 (FY 2020);
- Residential collection service rates were to be set at a level that would provide the revenue needed to sustain the forty-five day Residential Operating Reserve in accordance with the Department’s Financial Management Plan and Guiding Principles;
- Residential collection service rates were to include certain tip fee increases requested by the Cedar Avenue Recycling and Transfer Station, LP (“CARTS”) that were approved by the City Council as discussed in more detail below;
- The Division’s portion of the planned construction of the Department of Public Utilities Administrative and Fleet Maintenance Facility was to be funded through an internal loan to be repaid over five years; and
- Planned purchases of capital equipment were to be adjusted in the Model so that the required balance in the forty-five day Residential Operating Reserve was maintained.

As part of our engagement HF&H reviewed the Rate Model used by the Division to project revenues and expenses and develop residential service rates. We also reviewed the projected costs of providing each level of collection service and compared that cost to the projected rates. Our review found that the Rate Model is mathematically accurate and logically consistent in its application.

In addition our review noted the following items:

- The current residential collection service rate structure, when supplemented by existing monies from the Residential Operating Reserve, is projected to generate sufficient revenues to support the cost of providing the service through FY 2019, the end of the current five year rate cycle;
- In order to maintain the forty-five day Residential Operating Reserve during the five year rate cycle ending with FY 2019, only forty-five percent of the scheduled collection equipment purchases have or will be made;

- The Division will not be able to meet the forty-five day Residential Operating Reserve requirement in FY 2021 without significant rate adjustments beginning in FY 2020; and
- The current customer rates for the different material types and Service Levels will have to be realigned in order to properly reflect the current costs associated with providing services to each Service Level.

We also recommend that the Division eliminate the senior discount program and replace it with an “Affordability Credit Program” that is not funded with solid waste rate revenues.

### Solid Waste Rate Projections FY 2020 – FY 2024

In order to provide the necessary funding for the residential collection program, the Division will need to increase revenue from rates by implementing a series of rate adjustments during the upcoming five year rate cycle. Based on results from the updated Rate Model and input from Division staff we have developed the composite rate adjustment recommendations set forth in Table 1. The results of the individual rate adjustment recommendations on the current 64 and 96 gallon residential service rates are set forth in Table 2.

Rate Year	Rate Revenue Adjustments
<b>FY 2020</b> (July 1, 2019 - June 30, 2020)	<b>10.00%</b>
<b>FY 2021</b> (July 1, 2020 - June 30, 2021)	<b>10.00%</b>
<b>FY 2022</b> (July 1, 2021 - June 30, 2022)	<b>9.50%</b>
<b>FY 2023</b> (July 1, 2022 - June 30, 2023)	<b>6.50%</b>
<b>FY 2024</b> (July 1, 2023 - June 30, 2024)	<b>0.00%</b>

Rate Year		Rates	
		64 Gallon Service	96 Gallon Service
<b>Current Five Year Rate Cycle</b>			
<b>FY 2015</b>	(July 1, 2014 - June 30, 2015)	\$ 19.20	\$ 25.37
<b>FY 2016</b>	(July 1, 2015 - June 30, 2016)	\$ 19.20	\$ 25.37
<b>FY 2017</b>	(July 1, 2016 - June 30, 2017)	\$ 19.20	\$ 25.37
<b>FY 2018</b>	(July 1, 2017 - June 30, 2018)	\$ 19.20	\$ 25.37
<b>FY 2019</b>	(July 1, 2018 - June 30, 2019)	\$ 19.20	\$ 25.37
<b>New Five Year Rate Cycle</b>			
<b>FY 2020</b>	(July 1, 2019 - June 30, 2020)	\$ 22.24	\$ 26.44
<b>FY 2021</b>	(July 1, 2020 - June 30, 2021)	\$ 24.46	\$ 29.08
<b>FY 2022</b>	(July 1, 2021 - June 30, 2022)	\$ 26.78	\$ 31.84
<b>FY 2023</b>	(July 1, 2022 - June 30, 2023)	\$ 28.52	\$ 33.91
<b>FY 2024</b>	(July 1, 2023 - June 30, 2024)	\$ 28.52	\$ 33.91

As is discussed in more detail in Section II of this report, our analysis of the impact of these rate adjustments indicates that they will produce sufficient revenue to allow the Division to meet the projected revenue requirements, while maintaining the required Residential Operating Reserve balance during the upcoming five year rate cycle of FY 2020 – FY 2024.



## SECTION II: BACKGROUND, OBJECTIVES AND APPROACH

### Background

Solid Waste customers within the City of Fresno (“City”) are divided into two service classes. The residential service class includes all single family customers while the commercial service class includes commercial and multi-family customers. The City is the designated collection hauler for residential customers within the City, while commercial and multi-family customers are serviced by franchised collectors. The Department of Public Utilities (“DPU”) Solid Waste Management Division (“SWMD”) is responsible for providing collection services to the nearly 112,000 residential customers.

The City provides its single-family residential customers with a default collection Service Level consisting of three 96 gallon containers, (solid waste, green waste and recycling). For those customers who produce limited amounts of solid waste, the City offers an optional Service Level utilizing a 64 gallon solid waste container. In addition the City provides the option of four additional capacity Service Levels, an additional 96 gallon solid waste cart, an additional 64 gallon solid waste cart, an additional 96 gallon green waste cart and an additional 96 gallon recycling cart. Customers are billed a flat rate based on the size of their solid waste container. Additional containers are billed at a separate rate. The monthly residential rate has not been adjusted since FY 2010; the Division has instead used Residential Operating Reserve monies to stabilize the residential rates.

The City currently utilizes a Rate Model prepared by HF&H and the City under a prior contract that projected future residential solid waste costs and rates for the current five year rate cycle FY 2015 – FY 2019. The City has requested that HF&H independently assess and evaluate the existing Rate Model and rate structure for the next five year rate cycle, FY 2020 through FY 2024, and develop a five year rate plan that provides recommendations for changes to those rates that will provide sufficient revenue to allow the Division to adequately fund the SWMD Enterprise Fund operations during that period while meeting the requirements of Proposition 218.

### Rate Plan Objectives and Assumptions

The five year rate plan was developed to meet the objective of setting rates that will provide sufficient revenue to allow the Division to adequately fund the SWMD Enterprise Fund operations during the period FY 2020 – FY 2024 while meeting the requirements of Proposition 218. The following assumptions and requirements were incorporated into the five year rate plan:

- The current residential collection service rates have not been adjusted since FY 2010.
- Residential collection service rates were not to be increased prior to July 1, 2019 (FY 2020);
- Residential collection service rates were to be set at a level that would provide sufficient revenue to sustain the forty-five day Residential Operating Reserve in accordance with the Department’s Financial Management Plan and Guiding Principles;
- Residential collection service rates were to include certain tip fee increases requested by the Cedar Avenue Recycling and Transfer Station, LP (“CARTS”) that were approved by the City Council in September 2018;

- The Division’s portion of the planned construction of the Department of Public Utilities Administrative and Fleet Facility was to be funded through an internal loan to be repaid over five years; and
- Planned purchases of capital equipment were to be adjusted in the Model so that the required balance in the forty-five day Residential Operating Reserve was maintained.

## Approach

### Detailed Review of Rate Model

The Division’s current Rate Model provides revenue and expense projections over a five year planning period and allocates those expenses among the Division’s sections. Our review of the Model was performed in order to:

Determine the mathematical accuracy and logical consistency of the Rate Model;

Confirm that the revenue and cost allocations that the Division has made between the two base single-family Service Level rates within the Rate Model are proportionate and based on appropriate assignment of direct expenses and/or reasonable allocations of any costs that cannot be directly assigned; and

Verify that rates for each Service Level are calculated accurately, that they comply with the requirements of Proposition 218, and that they will ensure the funding necessary to satisfy the Division’s projected annual revenue requirements for capital and operating expenditures and Residential Operating Reserve balances.

### Review of General Model Characteristics

We reviewed the Rate Model for FY 2020- FY 2024 to obtain a comprehensive understanding of the characteristics of the Model and confirm mathematical accuracy and logical consistency.

Our review found that the Rate Model is mathematically accurate and logically consistent and we noted no material errors or miscalculations.

We also noted that the Model is designed to allow Division staff to perform sensitivity analysis on an on-going basis to determine how changes in revenue or expenditure assumptions will affect the overall customer rates. However, it does require manual input for budgetary changes occurring during the year and to adjust budgetary numbers to actual numbers at the close of each fiscal year. We noted that the Model has been updated to reflect actual FY 2018 revenues and expenditure and current FY 2019 budget figures.

In addition, we reviewed the underlying support for the Rate Model’s revenue and expense projections. The intent of this review was to determine if revenues and expenses were properly assigned or reasonably allocated between the basic residential services (96 gallon and 64 gallon) and to determine if there was a specific relationship between the cost of each service and the rates charged to provide that service, as required by Proposition 218.

We found that direct and indirect costs are charged or allocated to the appropriate Service Levels within the Model. The allocations are based on either the number of customers for each Service Level, the number of containers for each Service Level, the container capacity for each Service Level, or the tons of material disposed or processed, as appropriate, and these allocations are applied consistently throughout

the Model. A summary of the steps performed as part of the Cost of Service review are provided later in this report.

### **Review of Rate Revenue Requirement**

We reviewed the Division’s revenue requirements, which are based on the most current annual budget documents, to determine the ability of the revenue generated by the projected rates in the Rate Model to support the appropriate program costs over the five year rate cycle of FY 2020 through FY 2024 and to maintain the required forty–five day Residential Operating Reserve balance. The revenue requirement to be funded through the rate structure consists of the Division’s projected expenditures less non rate revenues and transfers plus debt service and transfers for capital expenditures. We found that the projected FY2020 revenue requirement was approximately \$33,694,000.

During our review we noted the following items:

- The current residential collection service rates have not been adjusted since FY 2010.
- The current residential collection service rate structure is not generating sufficient revenues to support the costs of providing the service. Residential Operating Reserve monies and the cancellation of planned capital expenditures are being used to make up for current year revenue shortfalls. During rate years FY 2020 through FY 2024 the current rate structure is projected to continue to be unable to provide the revenues needed to fund the cost of providing residential services. In addition, due to the age of the current collection fleet, continued reduction of scheduled capital expenditures is no longer a viable alternative.

These findings indicated that the current residential rate structure would need to be increased significantly beginning in FY 2020.

We discussed the residential revenue and expenditure projections for the upcoming rate cycle with Division staff and noted that there were two new significant capital expenditures and one new potential operating expenditure that are now being projected to occur during the upcoming five year rate cycle. These expenditures are discussed in the following sections of this report.

### **CARTS Tip Fee**

The City of Fresno receives residential solid waste disposal and transfer services from the Orange Avenue Disposal Company, Inc. (“OAD”) and the Cedar Avenue Recycling and Transfer Station, LP (“CARTS”). CARTS has requested significant tipping fee increases related to a variety of costs. After reviewing the basis for these requests the City Council approved increased labor, fuel and organic materials costs since those increases are related to changes in law, and increased costs at the American Avenue Landfill resulting from changes agreed to by the City. This Model was modified to include these approved costs..

### **Capital Facilities Expenditures**

The Department of Public Utilities (“DPU”) has projected construction of a DPU Administration Office and Fleet Maintenance Facility during the five year rate plan period FY 2020 – FY 2024. After considering financing the facility costs with bonds, the City determined that it would be more cost effective for the Solid Waste Division to borrow the funds internally to pay for its portion of the costs of the facility. The internal borrowing will be repaid over five years, most of which will occur during FY 2020 – FY 2024. The

Rate Model was adjusted to include approximately \$15,900,000 in principal and interest payments during FY 2020 – FY 2024 for the portion of the overall costs related to the facilities to be used by the Division.

### **Capital Equipment Expenditures**

The Division maintains an internal capital equipment purchase plan that is reviewed and updated annually based on the ongoing condition of the collection equipment and the ability of the revenue generated by the customer rates to support the needed capital purchases. In order to mitigate the need to raise customer rates even higher than those proposed, while still meeting the rate plan objectives, the Division has reduced the planned purchases of collection equipment during FY 2020 – FY 2024 by approximately thirty percent. We noted that this is only a short term solution and will require significant capital expenditures in future years in order to maintain the Service Levels expected by residential customers. The proposed rates are projected to provide sufficient revenue to allow the Division to purchase the vehicles required to maintain the required Service Levels and vehicle replacement reserve fund minimum balance during the upcoming five year rate cycle.

### **Capital Plan**

The proposed Solid Waste Division capital plan for FY 2020 through FY 2024 which includes the capital expenditures discussed in the two preceding sections totals \$48.3 million and includes the following projects.

1. Collection Vehicles = \$28.4 million.
2. Division portion of the DPU Administration and Maintenance Facility = \$15.9 million.
3. Collection Containers = \$3.0 million.
4. Landfill Closure = \$1.0 million.

These capital costs are accounted for in the Facilities Section (412501) and through transfers from the Residential Operating Reserve.

### **Cost of Service Review**

The Division uses the following eight Sections to account for the cost of providing residential collection services:

- Container Maintenance (Org. 412001) - Container Maintenance costs include providing new or exchange containers to residential customers. The maintenance crew assembles, cleans, and performs daily repair and delivery of containers throughout the City.
- Landfill (Org 412002) - The Landfill program involves the daily oversight of the post closure maintenance activities of the 140-acre former landfill site, involving the monitoring of the groundwater treatment plant system, wells, and methane recovery system. Quarterly samples are taken from each of the wells and reported to the US Environmental Protection Agency to ensure the environmental resources of the community are protected.
- Recycling (Org 412004) – The Recycling education Program provides the community with various levels and types of recycling education programs, focusing on increase diversion of material from the landfill reaching all segments of the City’s customer base including working with school children (K-12) who take the recycling and conservation message home.
- Residential Solid Waste Collection (Org 412007) - The Residential program collects municipal solid waste, recycling, and green waste materials (3-cart system) for over 112,000 residential

customers and consists of a fleet of over 100 trash and support service vehicles. The Residential section also includes labor and support functions.

- Litter Control (Org 412010) - The Litter Control program is responsible for daily clean-up of illegal dumping and general litter control removal, including the cleaning of alleys, homeless encampments, and special events within City limits.
- Operation Cleanup (Org 412011) – The Operation Cleanup program provides once a year service to all City of Fresno residential customers. This program provides curbside collection service for customers to dispose of bulky items too large for regular trash collection.
- Facilities (Org 412501) – The Facilities section includes certain operating capital expenditures such as the on-going purchase of collection containers (3-cart system) for single-family residential customers to meet new growth and container exchange demands, and other projects such as the new DPU Administration and Fleet Facilities project.
- Residential Operating Reserve. Capital costs for the purchase of collection vehicles and debt service costs related to the Divisions portion of the new DPU facility are accounted for as transfers from the Residential Operating Reserve.

Each Section contains one or more of the following Account Groups:

- Employee Services (51000)
- Purchased Professional and Technical Services (53000)
- Purchased Property Services (54000)
- Other Purchased Services (55000)
- Supplies (56000)
- Property (57000)
- Other Property (58000)
- Interdepartmental Services (58000)

Table 3 presents the FY 2020 revenue requirement by Section.

<b>Section</b>	<b>Description</b>	<b>Total</b>
<b>412001</b>	<b>Container Maintenance</b>	\$588,542
<b>412002</b>	<b>Landfill</b>	\$379,452
<b>412004</b>	<b>Recycling</b>	\$480,907
<b>412007</b>	<b>Residential Collection</b>	\$25,103,658
<b>412010</b>	<b>Litter Control</b>	\$1,102,902
<b>412011</b>	<b>Operation Clean Up</b>	\$4,033,955
<b>412501</b>	<b>Facilities</b>	\$560,640
	<b>Subtotal</b>	\$32,250,056
	<b>Non-Rate Revenue</b>	-\$628,416
	<b>Capital Transfers &amp; Debt Service</b>	\$2,072,487
	<b>Total Revenue Requirement</b>	<b>\$33,694,127</b>

The Division provides customers with the following six Service Level options:

- Basic Service Levels
  - 96 gallon service consisting of weekly collection of three 96 gallon containers, (solid waste, green waste and recycling);
  - 64 gallon service consisting of weekly collection of one 64 gallon container (solid waste) and two 96 gallon containers, (green waste and recycling);
- Additional Capacity Service Levels
  - Second 96 gallon solid waste container service;
  - Second 64 gallon solid waste container service;
  - Second 96 gallon green waste container service; and
  - Second 96 gallon recycling container service.

In order to determine the adequacy of the rate structure by Service Level we performed the following procedures:

1. We reviewed the accounts and purpose of each Section and allocated the costs between Solid Waste services, Green Waste services and/or Recycling services (“Material Type”) as follows:
  - The number of containers for each Material Type was used to allocate the costs in the Container Maintenance Section;
  - All costs in the Landfill Section were allocated to Solid Waste;
  - All costs in the Recycling Section were allocated to Recycling;
  - All costs, except costs related to disposal and processing, in the Residential Solid Waste Collection, Litter Control and Operation Cleanup Sections were allocated based on the number of personnel associated with the collection of each of Material Type;
  - Disposal and processing costs in the Residential Solid Waste Collection, Litter Control and Operation Cleanup Sections were allocated based on projected tons collected for each Material Type;
  - Costs in the Facilities Section, consisting of the purchase of collection containers, were allocated based on the number of containers for each Material Type, adjusted for the price differential between 64 gallon and 96 gallon solid waste containers;
  - All non-rate revenue, except for recycling revenue which was allocated to recycling, was allocated based on the number of customers receiving that Material Type service; and
  - Capital Transfers and Debt Service costs were allocated based on the number of collection vehicles for each Material Type.

This procedure provided solid waste service costs, green waste service costs and recycling service costs (Material Type costs) by Section as is presented in Table 4.

<b>Table 4 FY 2020 Revenue Requirement in Total and by Material Type</b>					
<b>Section</b>	<b>Description</b>	<b>Total</b>	<b>Solid Waste</b>	<b>Organic</b>	<b>Recycling</b>
<b>412001</b>	<b>Container Maintenance</b>	\$588,542	\$196,220	\$196,161	\$196,161
<b>412002</b>	<b>Landfill</b>	\$379,452	\$379,452	\$0	\$0
<b>412004</b>	<b>Recycling</b>	\$480,907	\$0	\$0	\$480,907
<b>412007</b>	<b>Residential</b>	\$25,103,658	\$12,102,463	\$7,219,660	\$5,781,535
<b>412010</b>	<b>Litter Control</b>	\$1,102,902	1,099,179	3,723	\$0
<b>412011</b>	<b>Operation Clean Up</b>	\$4,033,955	3,825,339	208,616	\$0
<b>412501</b>	<b>Facilities</b>	\$560,640	\$173,686	\$194,214	\$192,740
	<b>Subtotal</b>	\$32,250,056	\$17,776,339	\$7,822,374	\$6,651,343
	<b>Non-Rate Revenue</b>	-\$628,416	-\$190,318	-\$190,261	-\$247,838
	<b>Capital Transfers &amp; Debt Service</b>	\$2,072,487	\$795,257	\$650,664	\$626,566
	<b>Total Revenue Requirement</b>	<b>\$33,694,127</b>	<b>\$18,381,277</b>	<b>\$8,282,778</b>	<b>\$7,030,072</b>

2. Costs by Material Type were then allocated between the following five Cost Allocation categories in order to determine costs that are the same for all Service Levels and costs that vary based on the service demands of each Service Level:
  - Fixed costs – those costs that basically remain constant regardless of the collection service activity associated with the Service Level (e.g. legal service charges, space rental charges, communications charges, training charges, cleaning supplies charges, freight charges, computer software charges, cost allocation plan charges and insurance charges);
  - Variable costs – those costs that fluctuate directly in relation to the service activity required for the Service Level (e.g. payroll and payroll related charges, workers compensation charges, fleet service charges and collection vehicle fuel charges);
  - Disposal or Processing costs – the specific cost of disposing or processing collected materials, which vary based on Material Type and Service Level;
  - Container costs – the cost of specific containers utilized for each Service Level; and
  - Capital Transfer and Debt Service costs – those costs associated with vehicle depreciation, , and the Department debt service.

This procedure provided costs for each Material Type subdivided into the above five categories. These costs are presented in Tables 5-7.



Section	Description	Solid Waste	Fixed	Variable	Disposal	Capital/ Debt Svc	Containers
412001	Container Maintenance	\$196,220	\$45,775	\$150,444	\$0	\$0	\$0
412002	Landfill	\$379,452	\$373,530	\$5,923	\$0	\$0	\$0
412004	Recycling	\$0	\$0	\$0	\$0	\$0	\$0
412007	Residential	\$12,102,463	\$1,962,939	\$5,375,163	\$4,764,361	\$0	\$0
412010	Litter Control	\$1,099,179	\$101,095	\$983,496	\$14,589	\$0	\$0
412011	Operation Clean Up	\$3,825,339	\$202,807	\$2,804,999	\$817,533	\$0	\$0
412501	Facilities	\$173,686	\$0	\$0	\$0	\$0	\$173,686
	<b>Subtotal</b>	<b>\$17,776,339</b>	<b>\$2,686,146</b>	<b>\$9,320,024</b>	<b>\$5,596,483</b>	<b>\$0</b>	<b>\$173,686</b>
	Non Rate Revenue	-\$190,318	-\$190,318	\$0	\$0	\$0	\$0
	Capital Transfers & Debt Service	\$795,257	\$0	\$0	\$0	\$795,257	\$0
<b>Total Solid Waste Revenue Requirement</b>		<b>\$18,381,277</b>	<b>\$2,495,828</b>	<b>\$9,320,024</b>	<b>\$5,596,483</b>	<b>\$795,257</b>	<b>\$173,686</b>

Section	Description	Organic	Fixed	Variable	Disposal	Capital/ Debt Svc	Containers
412001	Container Maintenance	\$196,161	\$45,762	\$150,399	\$0	\$0	\$0
412002	Landfill	\$0	\$0	\$0	\$0	\$0	\$0
412004	Recycling	\$0	\$0	\$0	\$0	\$0	\$0
412007	Residential	\$7,219,660	\$1,606,041	\$4,397,860	\$1,215,758	\$0	\$0
412010	Litter Control	\$3,723	\$0	\$0	\$3,723	\$0	\$0
412011	Operation Clean Up	\$208,616	\$0	\$0	\$208,616	\$0	\$0
412501	Facilities	\$194,214	\$0	\$0	\$0	\$0	\$194,214
	<b>Subtotal</b>	<b>\$7,822,374</b>	<b>\$1,651,803</b>	<b>\$4,548,260</b>	<b>\$1,428,097</b>	<b>\$0</b>	<b>\$194,214</b>
	Non Rate Revenue	-\$190,261	-\$190,261	\$0	\$0	\$0	\$0
	Capital Transfers & Debt Service	\$650,664	\$0	\$0	\$0	\$650,664	\$0
<b>Total Organic Revenue Requirement</b>		<b>\$8,282,778</b>	<b>\$1,461,542</b>	<b>\$4,548,260</b>	<b>\$1,428,097</b>	<b>\$650,664</b>	<b>\$194,214</b>

Section	Description	Recycling	Fixed	Variable	Disposal	Capital/ Debt Svc	Containers
412001	Container Maintenance	\$196,161	\$45,762	\$150,399	\$0	\$0	\$0
412002	Landfill	\$0	\$0	\$0	\$0	\$0	\$0
412004	Recycling	\$480,907	\$254,513	\$226,394	\$0	\$0	\$0
412007	Residential	\$5,781,535	\$1,546,558	\$4,234,977	\$0	\$0	\$0
412010	Litter Control	\$0	\$0	\$0	\$0	\$0	\$0
412011	Operation Clean Up	\$0	\$0	\$0	\$0	\$0	\$0
412501	Facilities	\$192,740	\$0	\$0	\$0	\$0	\$192,740
	<b>Subtotal</b>	<b>\$6,651,343</b>	<b>\$1,846,833</b>	<b>\$4,611,770</b>	<b>\$0</b>	<b>\$0</b>	<b>\$192,740</b>
	Non Rate Revenue	-\$247,838	-\$247,838	\$0	\$0	\$0	\$0
	Capital Transfers & Debt Service	\$626,566	\$0	\$0	\$0	\$626,566	\$0
<b>Total Recycling Revenue Requirement</b>		<b>\$7,030,072</b>	<b>\$1,598,995</b>	<b>\$4,611,770</b>	<b>\$0</b>	<b>\$626,566</b>	<b>\$192,740</b>

- Material Type costs in each of the Cost Allocation Categories were then allocated among each of the Service Levels provided by that Material Type based on customers, containers, or capacity in the following manner:



- Fixed costs for each Material Type were allocated to the base 64 and 96 gallon Service Levels (solid waste) or base 96 gallon service (green waste and recycling) based on the number of customers in each Service Level by Material Type in relation to the number of customers in all Service Levels for that Material Type;
- Variable costs for each Material type were allocated to the base 64 and 96 gallon Service Levels (solid waste) or base 96 gallon service (green waste and recycling) and all additional capacity (second cart) Service Levels based on the capacity of the containers in each Service Level by Material Type in relation to the total capacity of the containers in all Service Levels for that Material Type;
- Disposal and processing costs for each Material Type were allocated to the base 64 and 96 gallon Service Levels (solid waste) or base 96 gallon Service Levels (green waste and recycling) and all additional capacity (second cart) Service Levels based on the capacity of the containers in each Service Level by Material Type in relation to the total capacity of the containers in all Service Levels for that Material Type;
- Container costs for each Material Type were allocated to the base 64 and 96 gallon Service Levels (solid waste) or base 96 gallon Service Levels (green waste and recycling) and all additional capacity (second cart) Service Levels based on the total number of containers for each Service Level by Material Type in relation to the total number of containers in all Service Levels for that Material Type adjusted for the price differential between 64 gallon containers and 96 gallon containers as appropriate; and.
- Capital Transfer and Debt Service costs for each Material Type were allocated to the base 64 and 96 gallon Service Levels (solid waste) or base 96 gallon service (green waste and recycling) based on the number of customers in each Service Level by Material Type in relation to the number of customers in all Service Levels for that Material Type.

These allocated costs were then divided by twelve to provide a cost per month for each Service Level by Material Type.

4. Costs per month for each Service Level by each Material Type were then divided by the number of customers subscribing to that service to develop a monthly customer cost of service rates for each Service Level.

Tables 8-10 demonstrate the allocation of revenue requirements among the Solid Waste, Organics and Recycling Service Levels to determine the costs of service for each of the Service Levels by Material Type.

Capacity	Base Service Options		2nd Cart Options		Totals
	64 Gallon	96 Gallon	64 Gallon	96 Gallon	
Customers	46,188	66,785			112,973
Containers	46,188	66,785	159	659	113,791
Annual Capacity	153,713,664	333,390,720	529,152	3,289,728	490,923,264
Fixed Cost & Capital Percentage	40.88%	59.12%			100.00%
Disposal & Variable Cost Percentage	31.31%	67.91%	0.11%	0.67%	100.00%
Container Cost Percentage	33.73%	65.51%	0.12%	0.65%	100.00%
Variable Route Costs/Mon	\$238,217.92	\$516,672.64	\$820.05	\$5,098.26	\$754,890.56
Fixed Costs/Mon	\$91,517.22	\$132,328.26			\$223,845.49
SW Disp Cost/Month	\$146,015.65	\$316,694.43	\$502.65	\$3,124.98	\$462,710.08
Container Maint Costs/Month	\$4,881.84	\$9,481.59	\$16.81	\$93.56	\$14,363.43
Capital Trans & Debt Svc Costs/Month	\$27,094.46	\$39,176.92			\$66,271.38
Variable Route Costs/Month/Cust	\$5.16	\$7.74	\$5.16	\$7.74	
Fixed Costs/Container/Month/Cust	\$1.98	\$1.98	\$0.00	\$0.00	
SW Disp Cost/Month/Cust	\$3.16	\$4.74	\$3.16	\$4.74	
Container Maint Costs/Month/Cust	\$0.11	\$0.14	\$0.11	\$0.14	
Capital Trans & Debt Svc Costs/Month/Cust	\$0.59	\$0.59			
Estimated Solid Waste Cost of Service Rates	\$10.99	\$15.19	\$8.42	\$12.62	

Capacity	Base Service 96 Gallon	2nd Cart 96 Gallon	Totals
Customers	112,973		112,973
Containers	112,973	1,025	112,973
Annual Capacity	563,961,216	5,116,800	569,078,016
Fixed Cost & Capital Percentage	100.00%		100%
Disposal & Variable Cost Percentage	99.10%	0.90%	100%
Container Cost Percentage	99.10%	0.90%	100%
Variable Route Costs/Month	\$359,901.22	\$3,265.37	\$363,166.59
Fixed Costs/Mon	\$137,650.26		\$137,650.26
Organics Processing Cost/Month	\$117,928.97	\$1,069.97	\$118,998.94
Container Maint Costs/Month	\$16,038.98	\$145.52	\$16,184.51
Capital Trans & Debt Svc Costs/Month	\$54,222.04		\$54,222.04
Variable Route Costs/Month/Cust	\$3.19	\$3.19	
Fixed Costs/Container/Month/Cust	\$1.22		
Organics Processing Cost/Month/Cust	\$1.04	\$1.04	
Container Maint Costs/Month/Cust	\$0.14	\$0.14	
Capital Trans & Debt Svc Costs/Month/Cust	\$0.48		
Estimated Organic Cost of Service Rates	\$6.07	\$4.37	

<b>Table 10 Recycling Cost of Service Analysis</b>			
	<b>Base Service 96 Gallon</b>	<b>2nd Cart 96 Gallon</b>	<b>Totals</b>
Capacity			
Customers	112,973		112,973
Containers	112,973	160	113,133
Annual Capacity	563,961,216	798,720	564,759,936
Fixed Cost & Capital Percentage	100.00%		100%
Disposal & Variable Cost Percentage	99.86%	0.14%	100%
Container Cost Percentage	99.86%	0.14%	100%
Variable Route Costs/Month	\$363,146.72	\$514.31	\$363,661.03
Fixed Costs/Mon	\$153,902.75		\$153,902.75
Recycling Processing Cost/Month	\$0.00		\$0.00
Container Maint Costs/Month	\$16,038.98	\$22.72	\$16,061.70
Capital Trans & Debt Svc Costs/Month	\$52,213.82		\$52,213.82
Variable Route Costs/Month/Cust	\$3.21	\$3.21	
Fixed Costs/Container/Month/Cust	\$1.36		
Recycling Processing Cost/Month/Cust	\$0.00		
Container Maint Costs/Month/Cust	\$0.14	\$0.14	
Capital Trans & Debt Svc Costs/Month/Cust	\$0.46		
Estimated Recycling Cost of Service Rates	\$5.18	\$3.36	

### Proposed Rate Adjustments

As discussed above, the current residential collection service rates alone will not provide the revenue needed to fund existing and projected operating and capital expenses and maintain the required Residential Operating Reserve and therefore must be adjusted.

Using the Rate Model, we developed a rate adjustment scenario for review by the Division. The scenario includes the CARTS tip fee costs approved by the City Council. The scenario was developed using the following assumptions:

- Residential customers were conservatively projected to grow by 0.5 percent per year.
- Personnel, operating and maintenance expenses were projected to grow by 3 percent per year.
- Rates should be sufficient to fund operating and capital expenses and maintain the required Residential Operating Reserve.
- The Residential Operating Reserve should be sufficient to cover projected operating costs over a forty-five day period. This equates to approximately 12 percent of projected operating costs.
- In order to comply with Proposition 218's requirements, Residential Operating Reserve monies can only be used to support residential programs.
- The rates must provide sufficient revenues to allow the Division to repay the Division's portion of the DPU Administrative and Fleet Facility construction loan over a five year period.
- Rates were assumed to be effective on July 1 of each year.

Table 11 presents a summary of the historical rate adjustments (by percentage) that occurred during the current five year rate plan period and the proposed composite rate adjustment scenarios that were developed as part of this five year rate plan.

<b>Table 11 Historical and Proposed Rate Revenue Adjustments (Percentage)</b>	
<b>Rate Year</b>	<b>Rate Revenue Adjustments</b>
<b>Current Five Year Rate Cycle</b>	
<b>FY 2015</b> (July 1, 2014 - June 30, 2015)	<b>0.00%</b>
<b>FY 2016</b> (July 1, 2015 - June 30, 2016)	<b>0.00%</b>
<b>FY 2017</b> (July 1, 2016 - June 30, 2017)	<b>0.00%</b>
<b>FY 2018</b> (July 1, 2017 - June 30, 2018)	<b>0.00%</b>
<b>FY 2019</b> (July 1, 2018 - June 30, 2019)	<b>0.00%</b>
<b>New Five Year Rate Cycle</b>	
<b>FY 2020</b> (July 1, 2019 - June 30, 2020)	<b>10.00%</b>
<b>FY 2021</b> (July 1, 2020 - June 30, 2021)	<b>10.00%</b>
<b>FY 2022</b> (July 1, 2021 - June 30, 2022)	<b>9.50%</b>
<b>FY 2023</b> (July 1, 2022 - June 30, 2023)	<b>6.50%</b>
<b>FY 2024</b> (July 1, 2023 - June 30, 2024)	<b>0.00%</b>

Based on the results of the cost of service analysis it was determined that the individual residential service rates for FY 2020 will need to be realigned to maintain proportionality among Service Levels. Tables 12 and 13 present the results of that realignment on the FY 2020 rates for the basic residential Service Levels; one 64 gallon container, (solid waste), and two 96 gallon containers, (organic materials and recycling) or three 96 gallon containers, (solid waste, organic materials and recycling). It is anticipated that the FY 2021 – FY 2024 rate adjustments will be applied equally to all Service Levels.

<b>Table 12 Cost of Service Rate Adjustments &amp; Resulting 64 Gallon Service Rates</b>			
	<b>CoS Adjustment %</b>	<b>CoS Monthly Rate Change</b>	<b>CoS Monthly Rate</b>
FY 2020	15.85%	\$ 3.04	\$ 22.24
FY 2021	10.00%	\$ 2.22	\$ 24.46
FY 2022	9.50%	\$ 2.32	\$ 26.78
FY 2023	6.50%	\$ 1.74	\$ 28.52
FY 2024	0.00%	\$ -	\$ 28.52

<b>Table 13 Cost of Service Rate Adjustments &amp; Resulting 96 Gallon Service Rates</b>			
	<b>CoS Adjustment %</b>	<b>CoS Monthly Rate Change</b>	<b>CoS Monthly Rate</b>
FY 2020	4.21%	\$ 1.07	\$ 26.44
FY 2021	10.00%	\$ 2.64	\$ 29.08
FY 2022	9.50%	\$ 2.76	\$ 31.84
FY 2023	6.50%	\$ 2.07	\$ 33.91
FY 2024	0.00%	\$ -	\$ 33.91

Table 14 presents a summary of the historical residential 64 and 96 gallon service rates during the current five year rate plan period and the proposed residential 64 and 96 gallon service rates that were developed as part of this rate plan and the cost of service study. Additional information about each scenario is discussed below.

<b>Table 14 Current and Proposed Monthly Residential Service Rates</b>			
<b>Rate Year</b>		<b>64 Gallon Service Rates</b>	<b>96 Gallon Service Rates</b>
<b>Current Five Year Rate Cycle</b>			
<b>FY 2015</b>	(July 1, 2014 - June 30, 2015)	\$ 19.20	\$ 25.37
<b>FY 2016</b>	(July 1, 2015 - June 30, 2016)	\$ 19.20	\$ 25.37
<b>FY 2017</b>	(July 1, 2016 - June 30, 2017)	\$ 19.20	\$ 25.37
<b>FY 2018</b>	(July 1, 2017 - June 30, 2018)	\$ 19.20	\$ 25.37
<b>FY 2019</b>	(July 1, 2018 - June 30, 2019)	\$ 19.20	\$ 25.37
<b>New Five Year Rate Cycle</b>			
<b>FY 2020</b>	(July 1, 2019 - June 30, 2020)	\$ 22.24	\$ 26.44
<b>FY 2021</b>	(July 1, 2020 - June 30, 2021)	\$ 24.46	\$ 29.08
<b>FY 2022</b>	(July 1, 2021 - June 30, 2022)	\$ 26.78	\$ 31.84
<b>FY 2023</b>	(July 1, 2022 - June 30, 2023)	\$ 28.52	\$ 33.91
<b>FY 2024</b>	(July 1, 2023 - June 30, 2024)	\$ 28.52	\$ 33.91

As is presented in Tables 11 and 14, the proposed rate scenario provides for the rate adjustments to take place over a four year period FY 2020 – FY 2023 with no adjustment in FY 2024. There were three main reasons that this rate structure was selected.

- First, due to the length of time since the last rate adjustment the Division did not want to adjust the rates in a single year as that would have required an adjustment of approximately twenty-six percent.
- Second, the Division was to hold rates steady through FY 2019. As a result, a significant portion of the existing Residential Operating Reserve monies will be exhausted by the end of FY 2019. In order to maintain the required forty-five day Residential Operating Reserve balance during FY 2020 – FY 2024 significant rate adjustments were required in FY 2020, FY 2021, FY 2022 and FY 2023. The proposed adjustments were those that resulted in the lowest overall increase in the rates while providing sufficient revenues to maintain the required Residential Operating Reserve balance.
- Third, the Division needed to maintain an appropriate Residential Operating Reserve balance through FY 2024 without building up excessive reserves. This required that no adjustment take place in FY 2024.

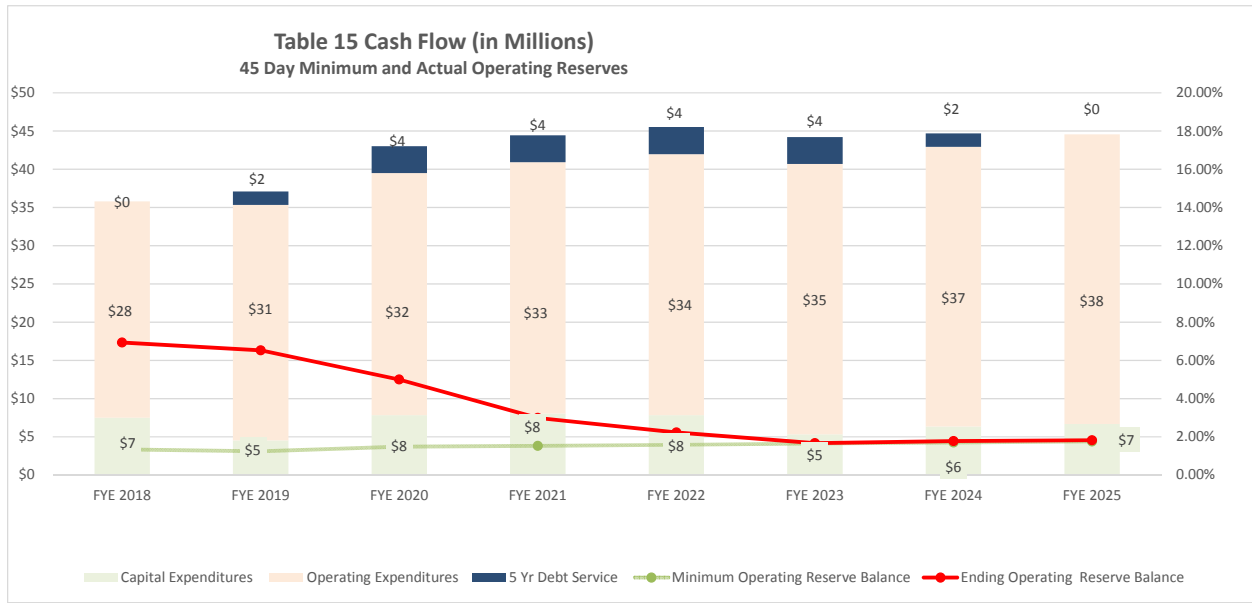
### **Residential Operating Reserve**

As part of this engagement, we also reviewed the ability of the proposed rates to fund the Division's Solid Waste Residential Operating Reserve at a level sufficient to provide operating funds for a period of forty-five days in accordance with the Department's Financial Management Plan and Guiding Principles. The purpose of this reserve is to provide the ability to effectively respond to unforeseen events or emergencies.

Our review found that the rate adjustments proposed in Table 3 will provide sufficient revenues to maintain the required balance in the Residential Operating Reserve.

### **Cash Flow**

In order to summarize the effects of the recommended rate adjustments on revenues, rates and Residential Operating Reserve balances we have prepared a cash flow graphic for the proposed rate adjustment scenario. The cash flow graphic extends over an eight year period beginning with the current year, FY 2018 and ending with FY 2025, the first year after the end of the new five year rate cycle. The graphic clearly shows that, subject to the limitations discussed in Section III of this report, the revenue from the proposed rate adjustments is sufficient to fund the projected operating, capital and debt service expenditures while maintaining the required Residential Operating Reserve balance.



## SECTION III: RECOMMENDATIONS

### Recommendations

#### Rate Adjustments

Based on the results of our evaluation of the effects of the proposed rate adjustments on the revenue from residential rates and the Residential Operating Reserve balances over rate years FY 2020 – FY 2024, we recommend that, the Division adopt the proposed rate adjustment scenario set forth above (See Table 1 – Proposed Rate Adjustments).

#### Senior Discounts

The current residential solid waste rate structure includes a category for senior citizens, for both Service Levels, whose rates are approximately fourteen percent lower than those for single family residential customers. We recommend that the Division eliminate the senior citizen rate category and instead provide qualifying customer's access to an "Affordability Credit Program" that is not funded by solid waste rate revenues, similar to the Water Affordability Credit program currently in place.

#### Limitations

The Rate Model and accompanying analyses contain projections of revenues and expenditures based on various assumptions and estimates provided by the Division. While we reviewed those projections for reasonableness, actual results of operations will usually differ from projections because events and circumstances do not always occur as expected. Those differences may be significant and materially affect the analyses and findings presented in this report.

Due to the inherent limitations of all projections we also recommend that the Division utilize the Rate Model to reevaluate the proposed rate adjustments annually to account for program changes and actual debt service, capital and operating expenditures.