SUMMARY and FISCAL NOTE*

Department:	Contact Person/Phone:	Executive Contact/Phone:
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** Note that the Summary and Fiscal Note describes the version of the bill or resolution as introduced; final legislation including amendments may not be fully described.*

1. BILL SUMMARY

Legislation Title: AN ORDINANCE relating to the solid waste system of Seattle Public Utilities; revising rates and charges for solid waste services; revising credits to low income customers for solid waste services; and amending Chapters 21.40 and 21.76 of the Seattle Municipal Code.

Summary and background of the Legislation: The ordinance proposes the following adjustments to most solid waste rates on April 1st of each year: 7.2% in 2017, 1.9% in 2018, and 4.0% in 2019. Rate adjustments were last approved in 2014 for 2015 and 2016. The increased rates will fund the completion of the NTS and STS phase 2 projects, an expanded UDP program, and increase in the City Utility Tax intended to pay for encampment and illegal dumping cleanup programs. The proposed rate adjustments comply with the average overall rate path limit target of 4.6% per year as established by the SBP.

2. CAPITAL IMPROVEMENT PROGRAM

____ **This legislation creates, funds, or amends a CIP Project.**

3. SUMMARY OF FINANCIAL IMPLICATIONS

_X_ **This legislation has direct financial implications.**

Budget program(s) affected:				
Estimated $ Appropriation change:	**General Fund $**		**Other $**	
	2016	**2017**	**2016**	**2017**
Estimated $ Revenue change:	**Revenue to General Fund**		**Revenue to Other Funds**	
	2016	**2017**	**2016**	**2017**
	$0	$3,857,138		
Positions affected:	**No. of Positions**		**Total FTE Change**	
	2016	**2017**	**2016**	**2017**
Other departments affected:	Several City departments incur solid waste costs. These costs will increase commensurate with the rate increases proposed in this legislation			

3.a. Appropriations

____ **This legislation adds, changes, or deletes appropriations.**

3.b. Revenues/Reimbursements

__X__ **This legislation adds, changes, or deletes revenues or reimbursements.**

Anticipated Revenue/Reimbursement Resulting from this Legislation:

Fund Name and Number	Dept	Revenue Source	2016 Revenue	2017 Estimated Revenue
45010 Solid Waste Fund	SPU	Rates	$0	$9,523,935
TOTAL			$0	$9,523,935

Revenue/Reimbursement Notes:
This legislation will generate $9.5 million in 2017 with a 7.2% rate increase on April 1, 2017. A 1.9% rate increase in 2018 will generate $15.4 million (over 2016 rates) and a 4.0% rate increase in 2019 will generate $22.0 million (over 2016 rates). The additional revenue is necessary to cover an increase to the Solid Waste Utility Tax rate, an expansion of the Utility Discount Program, capital financing, and regular inflation updates.

3.c. Positions

____ **This legislation adds, changes, or deletes positions.**

4. OTHER IMPLICATIONS

a) **Does the legislation have indirect or long-term financial impacts to the City of Seattle that are not reflected in the above?**
No.

b) **Is there financial cost or other impacts of not implementing the legislation?**
The Solid Waste Fund may not meet its financial policy targets.

c) **Does this legislation affect any departments besides the originating department?**
Several City departments incur solid waste costs. These costs will increase commensurate with the rate increases proposed in this legislation. Utility tax payments to the General Fund will increase.

d) **Is a public hearing required for this legislation?**
No

e) Does this legislation require landlords or sellers of real property to provide information regarding the property to a buyer or tenant?
No.

f) Is publication of notice with *The Daily Journal of Commerce* and/or *The Seattle Times* required for this legislation?
No.

g) Does this legislation affect a piece of property?
No

h) Please describe any perceived implication for the principles of the Race and Social Justice Initiative. Does this legislation impact vulnerable or historically disadvantaged communities?
This legislation increases rates for all residential and commercial customers, adjusts discounts and credits for qualified UDP customers, and provides enough additional revenue to cover an expansion of the UDP program.

i) If this legislation includes a new initiative or a major programmatic expansion: What are the long-term and measurable goals of the program? Please describe how this legislation would help achieve the program's desired goals.
No.

j) Other Issues:

List attachments/exhibits below:
Exhibit A - Seattle Public Utilities 2017-2019 Solid Waste Rate Study

EXHIBIT A

Seattle Public Utilities
2017-2019
Solid Waste Rate Study

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PREFACE - STRATEGIC BUSINESS PLAN COMPARISON

Seattle City Council Resolution 31534, passed August 11, 2014, adopted a six-year Strategic Business Plan (SBP) for Seattle Public Utilities (SPU) which guides utility investments, service levels, and rate paths through 2020. While not a formal rate package, the SBP does give guidance and create accountability for the rate setting process. Table 0-1 compares the overall solid waste increases for 2017-2019 proposed as part of this legislation with those in the SBP.

Table 0-1 Comparison of Overall Solid Waste Weighted Average Rate Increases, 2017-2019

	2017	2018	2019
Strategic Business Plan	*6.0%*	*4.0%*	*2.9%*
Proposed	**6.0%**	**3.1%**	**3.3%**

Several major changes have occurred since the SBP was passed. Table 0-2 provides a high level, year-by-year aggregate overview of the impacts of those changes on proposed rates.

Table 0-2: Rate Impacts of Changes since SBP on Proposed Rate Increases ($ millions)

	2017 Change from SBP	% Change in Rev Req	2018 Change from SBP	% Change	2019 Change from SBP	% Change
Expenditures						
Contracts	8.6	4.7%	10.5	5.6%	12.7	6.6%
Branch O&M	1.4	0.8%	0.1	0.1%	(0.5)	-0.2%
Taxes	3.8	2.1%	4.8	2.6%	5.3	2.7%
Capital Finance & Financial Policies	2.4	1.3%	22.6	12.0%	5.3	2.7%
Total Expenditure Requirement	**16.3**	**8.9%**	**38.1**	**20.2%**	**22.8**	**11.8%**
Other Funding Sources	(5.5)	-3.0%	(26.3)	-13.9%	(8.7)	-4.5%
Change in Retail Revenue Requirement	**10.8**	**5.9%**	**11.8**	**6.2%**	**14.1**	**7.3%**
Strategic Business Plan Rate Increases		**6.0%**		**4.0%**		**2.9%**
Change in Retail Rate Requirement		5.9%		6.2%		7.3%
Impact of UDP Expansion		0.6%		0.7%		0.8%
Impact of Demand		-6.5%		-7.8%		-7.7%
Proposed Rate Increases		**6.0%**		**3.1%**		**3.3%**

Some totals may not add due to rounding

Contracts

The largest change since the SBP has been an increase in contract costs. Most of the $8.6 million increase in 2017 is due to increased demand, but $5 million is due to a new recycling processing contract. The additional costs is offset by higher revenue (included under “Other Funding Sources”), with a net effect of $1 million in annual savings over the old contract.

The increases to contract expense driven by demand and the new recycling contract are partially offset by lower contract inflation. SPU uses a conservative estimate of three percent annual inflation on contracts; inflation in 2015 and 2016 was two percent and zero percent, respectively.

Branch O&M

Branch Operations and Maintenance (O&M) has increased $1.4 million from the SBP in 2017 and $0.1 million in 2018, while decreasing by $0.5 million in 2019 (See Table 0-3).

Table 0-3: SBP and Proposed Branch O&M ($ millions)

	2017 Proposed	2018 Proposed	2019 Proposed
Branch O&M			
Strategic Business Plan	54.0	56.5	59.4
Proposed	55.4	56.6	58.9
Change since SBP	**1.4**	**0.1**	**(0.5)**

O&M increases from the SBP are primarily due to increases in labor costs from bargaining agreements which were signed in 2015, and costs related to the New Customer Information System (NCIS), the new billing system operated jointly by SPU and Seattle City Light (SCL). Increases are partially offset in 2017 and fully offset in 2018 and 2019 by lower health insurance costs and a shift of expense to CIP.

Taxes

SPU anticipates an increase to the utility tax rate from 11.5 percent to 14.2 percent on April 1, 2017. This will increase taxes by $3.2 million in 2017 and $4.4 million in 2018, the first full year the tax increase will be in effect. The remainder of the increases in taxes is due to higher taxable revenues.

Capital Finance & Financial Policies

The capital financing expense shown in Table 0-4 below is the sum of debt service payments on borrowed funds (e.g. past and future revenue bond issues) plus operating cash contributions to CIP. Capital financing expense under proposed rates is $34.3 million higher than SBP assumptions across the three- year rate period, or $4.9 million in 2017, $21.6 million in 2018, and $7.8 million in 2019. Annual debt service payments are similar between the two scenarios, and actually slightly lower under the proposed, so the variance is related to differences in the use of operating cash to finance the CIP.

Table 0-4: Capital Financing Expense and Financial Policies ($ millions)

	2017		2018		2019		Total		
	SBP	Proposed	SBP	Proposed	SBP	Proposed	SBP	Proposed	Change
Debt Service	15.9	16.3	16.8	16.2	16.8	16.2	49.5	48.8	(0.7)
Cash Financed CIP	3.5	8.0	7.6	29.7	4.2	12.6	15.3	50.3	35.0
Subtotal	19.4	24.3	24.4	46.0	21.0	28.8	64.8	99.1	34.3
Change since SBP		*4.9*		*21.6*		*7.8*			
Financial Policies	4.2	1.7	0.1	1.1	3.6	1.1	7.9	3.9	(4.0)
Total	**23.6**	**26.0**	**24.5**	**47.1**	**24.6**	**29.9**	**72.7**	**103.0**	**30.3**
Change since SBP		*2.4*		*22.6*		*5.3*			

Some totals may not add due to rounding

Cash financing under proposed 2017-19 rates is higher than SPB assumptions due to three factors:

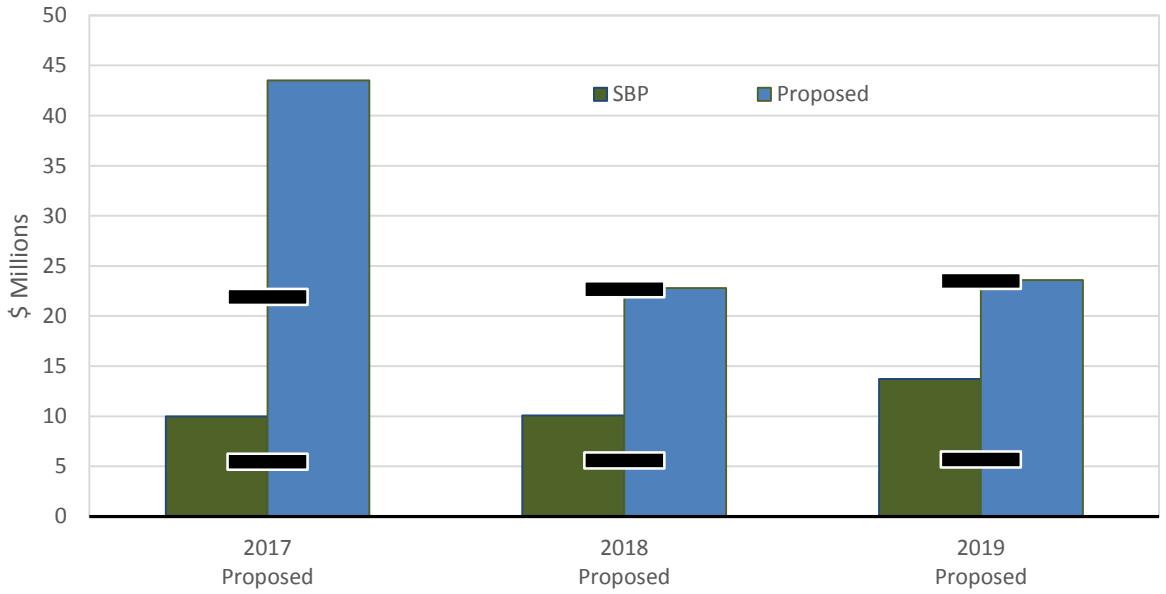
- **Higher proposed CIP:** CIP is $27 million higher than SBP assumptions.

- **Difference in timing of debt issues:** There are no new debt issues during the rate period under proposed rates. The SBP included a 2017 issue.
- **Higher operating cash reserves:** The 2017 starting operating cash balance is projected to be $42.4 million, compared to $5.8 million in the SBP. The SBP included a $15 million drawdown in cash to fund a transition away from Bill-in-Advance. Without this transition, the cash balance under the SBP would have been $20.8 million.

The factors noted above have their origin in prior-year (2015-16) results. First, 2015 bonds were spent more quickly than anticipated due to $11 million in higher CIP spending for 2015 and 2016. Debt was issued in 2016, a year earlier than programmed under the SBP to offset the impact. Second, above projection revenues in 2015-16 driven by a 2015-instituted change in the way that the fund calculates debt service coverage and strong demand, combined with lower spending resulted in higher cash reserves entering the new rate period than were anticipated at the time the SBP was adopted .

Due to the higher cash reserves, the SWF is able to pay for the higher anticipated CIP expense exclusively with operating cash once 2016 bond proceeds are spent down in 2017. As shown in Figure 0-1 below, higher cash balances are drawn down across the rate period to fund CIP under proposed rates. Under SBP assumptions, cash balances are gradually built up, in part due to the fact that less cash is required to finance the CIP, in part due to other financial policy impacts (see Financial Policies below). The minimum cash financial policies are shown in black hashes, with the 20-day contract expense being the lower hash and the 45-days operating expense as the higher hash.

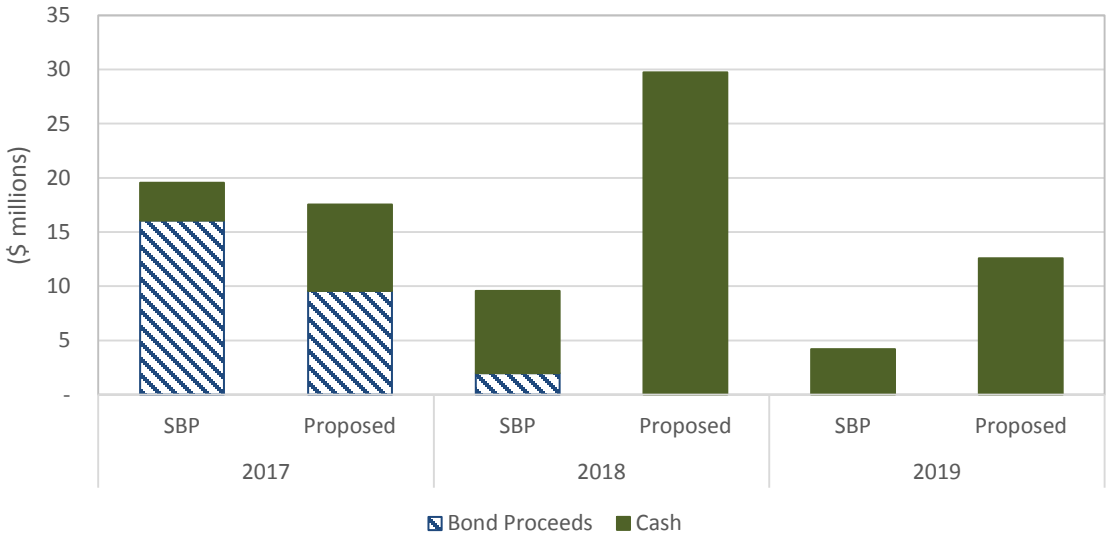
Figure 0-1: Year-End Cash Balances



Total CIP financing is higher under proposed rates than SBP assumptions because there are fewer bond proceeds available ($8.4 million lower over 3 years) AND because actual CIP spending levels are higher ($26.6 million higher over 3 years). The higher cash reserves discussed above allow for these levels of CIP to be financed under the current rate proposal.

Figure 0-2 below presents an annual snapshot of CIP funding sources under proposed rates and SBP scenarios.

Figure 0-2: Capital Financing



Revenues must be sufficient to both pay cash expense and meet all financial policy targets (See Section 2.1 for more details on the ratemaking process). For both the SBP and the rate study, in all years but one the financial policy target requiring the most revenue is debt service coverage. This means that the revenues required to meet coverage requirements will be greater than those needed to pay cash expense, thus generating "excess cash". This cash may either be spent (i.e. to fund CIP with cash over targeted levels) or remain in cash reserves. Under both the SBP and proposed rates scenarios, any excess cash is left in the operating fund, increasing cash balances. Under both scenarios, when cash financing exceeds the financial policy target, it is due to the fact that revenue bond proceeds are spent and higher cash financing is the only alternative. In these cases, this level of cash financing is not a choice but rather a requirement, and therefore not considered to be driven by financial policies.

The "Capital Finance and Financial Policies" line item in Table 0-2 includes an increase in cash balances due to the DSC policy in 2017, but the increase is $3 million less under proposed rates (See Figure 0-1 for year-end cash balances) above. In 2018, there is very limited excess cash under both the SBP and proposed scenarios. In 2019, debt service coverage is no longer binding under proposed rates. Rates are set to just fund cash expenses and maintain minimum operating cash balances as prior year reserves are drawn down to minimum levels. However, under SBP assumptions, debt service coverage continues to be binding and there is a buildup of cash that is $2.8 million higher than the proposed rates scenario.

Other Funding Sources

Other funding sources include prior year operating cash contributions, miscellaneous non-rates revenues, and revenues from the sale of commodities from the recycling waste stream. These funding sources reduce the amount of revenue that needs to be recovered from ratepayers in the current year.

In 2017, Other Funding Sources are $5.5 million higher than assumed in the SBP primarily due to an increase in recycling processing revenues. Revenues from the sale of commodities are down $1.5 million from SBP projections because of a fall in commodity prices, but up $7 million because of a restructuring of the recycling processing contract which provides SPU with greater revenues in exchange for higher contract costs. The net result is $5.5 million higher revenues than in the SBP.

In 2018 and 2019, other funding sources are $26.3 million and $8.7 million higher under proposed rates as higher cash reserves are drawn down as an alternative source of funding

Impact of the Utility Discount Program (UDP)

A phased in expansion of UDP starting in 2016 will reduce revenues by $0.8 million in 2016. This reduction will grow to $1.6 million by 2019 as the program is fully implemented. Changes to UDP do not affect the total amount of revenue required, but they do reduce the amount of revenue recovered as more customers will pay a reduced rate, necessitating higher revenue recovery (thus higher rates) from customers paying the full rate.

Impact of Demand

Demand for solid waste services, led by strong multi-family and commercial demand, has improved since the SBP, thus allowing a lower rate to recover the same amount of revenue.

1. EXECUTIVE SUMMARY

Seattle Public Utilities (SPU) provides solid waste services to residences and businesses in the City of Seattle ("City") through the Solid Waste Fund (SWF). It is supported almost entirely by utility fee revenue. Solid waste customers are either billed by SPU (residential customers) or by collection contractors (commercial customers). Contractors pick up garbage, recyclables, and organics from residences and business and deliver garbage and organics to SPU's transfer stations and recyclables to a contractor recycling facility in SODO. SPU delivers garbage to a railhead for transport to a contracted disposal site in Oregon. Organics are either picked up by processing contractors or delivered by SPU to a contractor-owned site. In addition, SPU, through the SWF, oversees the City's Clean City program, provides conservation programs and outreach, oversees hazardous waste disposal programs in conjunction with King County, and maintains and rehabilitates historic landfill sites.

Rates were last increased by 5.9 percent on April 1, 2015 and 3.4 percent on April 1, 2016 as part of the 2015-2016 Mid-Term Adjustment. A provision for this adjustment was included in the 2013-2016 Rate Study in the event the fund would miss a financial policy.

Key elements of the current rate proposal include:

1. **New Solid Waste Recycling Contract:** The new contract, which took effect on April 1, 2016, increases contract expense while also significantly increasing recycling commodities revenues, resulting in a $1 million net annual savings to the SWF.

2. **Incorporation of New City Initiatives:** The 2016 expansion of the Utility Discount Program (UDP) and an increase of the solid waste city utility tax rate from 11.5 percent to 14.2 percent (effective April 1, 2017) will put upward pressure on solid waste rates.

3. **Completion of Major Capital Facilities:** During this rate period, construction of new solid waste facilities over a multi-year period will be completed. The impact on rates of higher capital spending is substantially offset by the availability of high cash reserves entering the rate period.

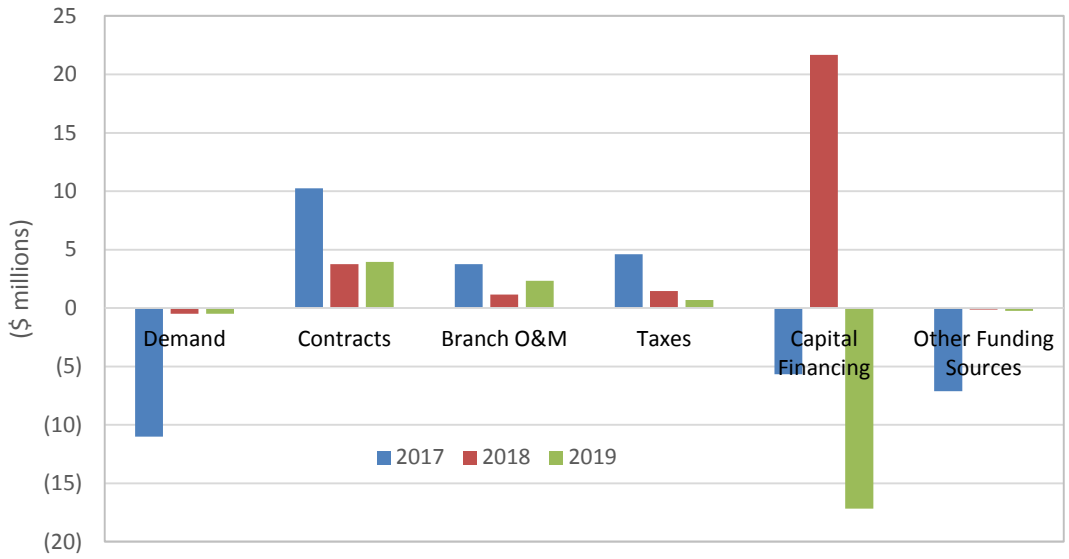
4. **Continued Focus on Protecting Bond Ratings:** Rates continue to be set to the more stringent debt service coverage (DSC) policy adopted in 2015, as well as to meet an unofficial policy of maintaining a year-end operating cash balance equal to 45 days of operating expense. These policies help to protect solid waste bond ratings during a period of significant capital expansion, liquidity contraction, and bond funding. Setting rates to meet these policies in 2015-16 Mid-Term Adjustment also contributed to increasing cash reserves.

5. **Improved Demand**: Since the Mid-Term Adjustment, solid waste demand has improved, resulting in a $4 million annual positive impact to rates in the proposed rate period as well as helping to build up cash reserves during 2015-16 which are available for use during this rate period. Increased demand has also contributed to increased contract expense.

1.1. Rate Drivers

Figure 1-1 breaks down the drivers of the rate increase by year followed by an overview of individual drivers. Positive numbers indicate drivers which increase rates, negative numbers indicate drivers which reduce rates. Chapter 3 provides a more detailed description of revenue requirement components.

Figure 1-1: Annual Components of Rate Drivers



Changes in Demand Forecast

Customer counts and subscription levels affect revenues, costs and the required change in rates. The change in the demand forecast from what was assumed in the Mid-Term Adjustment is a significant rate driver for 2017 and reduces the impact on customer bills by $11 million (See Section 3.8). Demand has minimal impact on the rate increase in 2018 and 2019, once the 2017 baseline is reset.

Contracts, Operations and Maintenance, and Taxes

Strong demand is accompanied by higher contract expense. The 2017 revenue requirement for contracts is expected to be $10.2 million higher than what was in 2016 adopted rates. 2017 O&M is expected to be $55.5 million, a $3.7 million increase from adopted rates chiefly due to higher labor costs and NCIS related expenses. Total taxes are expected to rise largely as the result of an anticipated increase to the utility tax rate in 2017.

Capital Financing

Annual capital financing expense fluctuates considerably, with lower financing expense relative to the prior year in 2017 ($5.7 million lower) and 2019 ($17.2 million lower) and a significant increase in 2018 ($21.7 million higher) relative to 2017. These fluctuations are primarily related to changes in CIP spending levels and exclusive use of operating cash to fund expenses from late 2017 through the remainder of the rate period. The increased use of cash to finance the CIP is due to the fact that proceeds from the 2016 SWF bond issue are exhausted in 2017 and sufficient cash reserves are available to substantially fund the remainder of spending throughout the period (see Other Funding Sources below).

Other Funding Sources

Other funding sources include asset sales, recycling commodity revenue, miscellaneous revenues, Rate Stabilization Fund (RSF) withdrawals, and cash contributions. Cash reserves built up in 2015 and 2016, combined with excess revenues generated by meeting the DSC binding constraints will be used to substantially fund capital expense once bond proceeds are exhausted in 2017. An RSF withdrawal is

expected to be used in 2019 to build up cash balances. Remaining funding sources are not expected to change significantly through the rate period, but a new recycling processing contract will provide $7 million of new revenue in 2017 compared to adopted rates.

1.2. Rate, Bill, and Financial Performance Impacts

Table 1-1 presents the change in the revenue requirement and the monthly impact of rate increases on typical residential can customers, a selection of dumpster customers, and self-haul customers.

With the exception of self-haul rates and limited special charges, effective April 1, rate increases will apply to all base commercial and residential rates, with rates increasing by 7.2 percent in 2017, 1.9 percent in 2018, and 4.0 percent in 2019. Self-haul rates and miscellaneous recycling rates will remain unchanged throughout the rate period. Because the weight increase is only in effect for nine months of the year, an increase weighted for the April effective date and for rates which are not increasing is used. See Table 1-1.

Table 1-1: Proposed Solid Waste Revenue Requirements and Bill Impacts

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Rate Revenue Requirement ***($ millions)***	$176.0	$193.7	$200.3	$206.8
Sample Bills				
Single-Family	$44.85	$48.10	$49.00	$50.95
32 gallon garbage, 96 gallon yardwaste, 96 gallon recycling				
Multi-Family	$511	$547	$558	$580
3 cubic yard detach, 96 gallon foodwaste, 3 cubic yard recycling, typical of a 30 unit building				
Commercial	$457	$490	$499	$519
3 cubic yard detach, option recycling, typical of a busy coffee shop or medium size restaurant				
Self-Haul, per ton	$145	$145	$145	$145
Rate Increases				
Weighted, System-Wide		6.0%	3.1%	3.3%
April 1, Most Rates		7.2%	1.9%	4.0%

Financial performance of the Solid Waste Fund (SWF) was strong in 2015 and is projected to continue to be strong in 2016. The proposed rate increases will continue to maintain this financial strength, while also providing the lowest rates possible. Table 1-2 displays the current and projected financial performance for the SWF.

Table 1-2: SWF Financial Policy Performance 2015-2020 ($ millions)

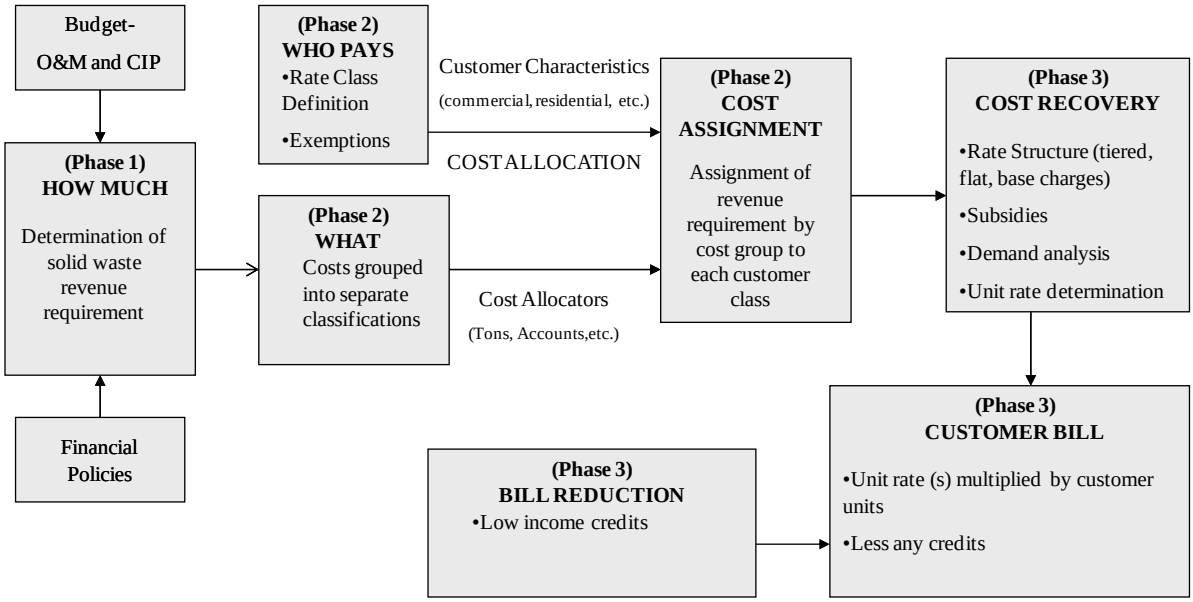
Policy	Target	2015 Actual	2016 Projected	2017 Proposed	2018 Proposed	2019 Proposed	2020 Estimated
Net Income	Generally Positive	**$1.4**	**$4.8**	**$3.5**	**$3.5**	**$7.7**	**$3.2**
Debt Service Coverage	1.7x (w Credit for Taxes)	**3.46**	**2.73**	**2.91**	**3.00**	**3.30**	**3.09**
	1.5x (w/o Credit for Taxes)	**2.02**	**1.50**	**1.51**	**1.51**	**1.78**	**1.50**
Cash Balance Year End	Year-End Balance:	**$42.2**	**$42.4**	**$43.5**	**$22.8**	**$23.6**	**$27.5**
	20 days contract expense	*$5.5*	*$5.8*	*$6.1*	*$6.3*	*$6.5*	*$6.7*
	45 days operating expense	*$19.8*	*$20.3*	*$21.9*	*$22.7*	*$23.5*	*$24.2*
Cash Financing of CIP	10% or $2.5M ($2004)	**$5.4**	**$8.3**	**$8.0**	**$29.7**	**$12.6**	**$4.7**
	Minimum	*$5.4*	*$3.3*	*$3.4*	*$3.5*	*$3.6*	*$3.6*

2. INTRODUCTION

SPU finances the acquisition, operation, and maintenance of Seattle's solid waste system through the Solid Waste Fund. As an enterprise fund, the SWF functions like a self-supporting business that must generate operating revenues, predominately through user charges (rates), which must be sufficient to cover all operating costs and meet financial policy targets. This document provides a summary of the 2017-2019 Solid Waste Rate Study. It examines the financial and policy issues of the SWF that affect rates. The Solid Waste Comprehensive Plan provides more information about the solid waste system in general.

2.1. Ratemaking Process Overview

The following diagram displays the phases involved in the development of solid waste rates:



Chapter 3 of this document discusses Phase 1 (Revenue Requirement). Chapter 4 addresses Phase 2 (Cost Allocation), while chapters 5 and 6 discuss Demand and Rate Design, which are included in Phase 3.

2.2. Rate Setting Objectives

To set rates, SPU considers a number of factors to help evaluate policy and rate design decisions under consideration.

- **Revenue Requirement:** Solid waste rates should be sufficient to meet the SWF's revenue requirement.
- **Equity:** Rates should reflect a fair apportionment of the different costs of providing service among groups of customers.
- **Customer Payment of Cost of Service:** Each customer class should generate sufficient revenue to cover both direct and indirect costs of service to the customer class over time.
- **Conservation:** The rate structures should encourage waste reduction and recycling activities.

- **Rate Stability:** Rate levels and structures should be changed in an orderly manner over time.
- **Customer Understanding:** The rate structures should be clear and understandable to the customer.
- **Financial Stability:** Revenue recovery from rates and other revenue sources should ensure financial stability, consistent with financial policies of the City.
- **System and Administrative Costs:** The rate structures should minimize long and short-term administrative costs, including customer service, billing, and contract administration.
- **Rate Impact Mitigation:** Mitigation of the impacts of solid waste rate increases to certain customers based on social or economic factors may be considered and implemented.

2.3. Financial Policy Overview

Financial policies provide a guiding framework for the finances of the solid waste utility. They represent a balance between the competing goals of fiscal conservatism through higher rates today and minimizing these same rates by spreading costs over time to future ratepayers. The direct effect of the policies is to determine the level at which solid waste rates shall be set, given estimated costs and demand, and to define the general manner in which the capital improvement program is to be financed.

The indirect effects of the policies are to:

- Shape the financial profile that the SWF presents to lenders and other members of the financial community;
- Establish the SWF's exposure to financial risk; and
- Allocate the SWF's costs between current and future ratepayers.

The current SWF financial policies were adopted by City Council in 2004 by Resolution 30695, except for the debt service coverage without credit for taxes policy which was adopted by Council in 2014 by Resolution 31516. The policies and associated targets are as follows:

Net Income
SPU targets generally positive net income. Positive net income is a contingency against projection variances and uncertainties regarding revenues. It is also a signal to bond rating agencies that the City is committed to establishing fees that cover costs.

Debt Service Coverage Ratio
A higher debt service coverage ratio means that more revenue is available after debt payments are made. This reduces financial risk and provides more flexibility to respond to revenue shortfalls.

The SWF has two coverage targets associated with two calculation methodologies:

- 1.7 times debt service cost in each year, with credit for City taxes
- 1.5 times debt service cost in each year, without credit for City taxes

The second policy was approved in 2014 to preserve the SWF's bond rating during a period of high borrowing. Under this policy, revenue used to pay taxes to the City is not considered available for making debt service payments. Under the bond covenant however, City taxes are subservient to debt payments.

Operating Cash Balance

The base policy is to maintain an operating cash balance of at least 20 days contract expense. The purpose of the cash balance target is to have sufficient cash on hand to pay operating expenses, taking into account the lag between cash disbursements and cash receipts, and to provide a reserve against projection variances. For 2015, the last year with actuals, contract costs for collection, transfer, and processing of solid waste was $100 million, resulting in a 20 days cash target of $5.5 million. In 2017 the cash target is projected to be $5.8 million.

Since 2015 SPU has sought to maintain higher year-end SWF cash balances on a planning basis, equivalent to 45 days of operating expense. The expectation is that this higher cash balance, combined with the more stringent debt service coverage ratio described above, will enable the SWF to better maintain its bond rating and will provide flexibility in the case of financial hardship or major policy changes. Under this unofficial policy, the cash target for 2015 would have been $19.8 million. The projected cash target for 2017 is $21.4 million.

Cash Contribution to the Capital Improvement Program (CIP)

The cash contribution to the CIP should be the greater of 10 percent of total CIP expenses or $2.5 million in 2003 dollars (as adopted by Resolution 30695 in 2004). This policy helps to prevent a rapid increase in debt levels and maintains a minimum investment into the system. The target in 2015, the last year with available actuals, was $5.4 million, or 10 percent of $54 million in CIP spending. The 2017 target reverts to $2.5 million in 2003 dollars, or $3.4 million on $23 million in CIP spending. SPU proposes, however, to increase cash contributions to CIP in order to keep debt levels and revenue required to meet debt service coverage obligations low.

Proposed 2017- 2019 rates assume cash contributions to CIP in excess of targeted levels as proceeds from the 2016 revenue bonds will be exhausted in 2017 and SPU does not plan to issue additional debt during the rate period. Sufficient cash reserves exist to finance higher levels of CIP with operating cash, enabling the SWF to keep debt levels and revenue required to meet debt service coverage obligations lower. In addition, after 2019 it is expected that annual capital expense will decline to around $5 million per year, an amount that could be reasonably financed on an ongoing basis with operating revenues.

Financial Policy Rate Impacts

In any future year, the minimum revenue requirement is the lowest amount of money necessary to simultaneously satisfy all financial policies in that year. At this level of revenues, some financial policies may be exceeded, but none will be missed – the financial target that is exactly met is known as the binding constraint. Debt service coverage is the binding constraint for 2017-2018, and operating cash balance is the binding constraint in 2019. Thus, proposed rates will generate enough revenue to meet these targets, and meet or exceed other policies targets in the applicable years.

3. REVENUE REQUIREMENT

The Rates Revenue Requirement is the total amount of revenues which must be recovered in a given year from direct service, or "rates" revenues. Rates revenues, together with other funding sources such as cash reserves and non-rates revenues, are used to pay the cash expenses associated with operating the Solid Waste system AND to meet the Solid Waste Fund's financial policy requirements (see Chapter 2.4).

Table 3-1 summarizes changes in the different components that make up the SWF rates revenue requirement from 2016 to 2019. The change in the 2017 revenue requirement throughout this section is relative to the planned 2016 revenue requirement when rates were adjusted for the 2015-16 Mid-Term Adjustment, rather than the most recent 2016 year-end projection.

Table 3-1: Components of the Change in the Solid Waste Revenue Requirement ($ millions)

	2016	2017		2018		2019	
	Mid-Term	Proposed	Change	Proposed	Change	Proposed	Change
Expenditures ($M)							
Operations & Maintenance (O&M)							
Contracts O&M	96.6	106.8	10.2	110.6	3.8	114.6	4.0
Other O&M	51.7	55.4	3.7	56.6	1.2	58.9	2.3
Total O&M	**148.3**	**162.3**	**14.0**	**167.2**	**4.9**	**173.5**	**6.3**
Taxes	**21.5**	**26.1**	**4.6**	**27.5**	**1.5**	**28.2**	**0.7**
Capital Financing							
Cash Financing	14.4	8.0	(6.4)	29.7	21.8	12.6	(17.2)
Debt Service	15.6	16.3	0.7	16.2	(0.1)	16.2	(0.0)
Total Capital Financing	**30.0**	**24.3**	**(5.7)**	**46.0**	**21.7**	**28.8**	**(17.2)**
Other Financial Policies	**0.6**	**1.7**	**1.1**	**1.1**	**(0.6)**	**1.1**	**(0.1)**
Total SWF Funding Requirement	**200.4**	**214.4**	**14.0**	**241.9**	**27.5**	**231.6**	**(10.3)**
Other Funding Sources							
Prior Year Operating Cash	(7.3)	-	7.3	(20.7)	(20.7)	0.8	21.5
RSF Deposit (Withdrawal)	(3.5)	-	3.5	-	-	(4.5)	(4.5)
Non-Rates Revenue	(13.6)	(20.7)	(7.1)	(20.9)	(0.1)	(21.1)	(0.2)
Total Other Funding Sources	**(24.4)**	**(20.7)**	**3.7**	**(41.6)**	**(20.9)**	**(24.8)**	**16.8**
Net Rates Revenue Requirement	**176.0**	**193.7**	**17.7**	**200.3**	**6.6**	**206.8**	**6.5**

2016 may not match documents included with the Mid-Term or SBP. Categories have been adjusted to be comparable to Proposed rates.

The **Expenditure** section of Table 3-1 presents the operating fund cash spending components that make up the SWF Funding Requirement. Sometimes the SWF must generate MORE revenue than needed to fund cash expense in order to meet all financial policy targets. The **Other Financial Policies** section of the table presents any additional revenues required to meet policy targets in excess of cash expense. The **Other Funding Source**s section presents non-rates sources of funding which reduce what must be recovered through direct service rates.

Under the current proposal, the SWF rates revenue requirement rises from $176.0 million in 2016 to $206.8 million in 2019, with annual increases of $17.7 million in 2017, $6.6 million in 2018, and $6.5 million in 2019. Expenditure increases are driven primarily by increased contract expense and to a lesser degree, increased tax expense. 2017 branch O&M, or SPU's expenses for equipment, salaries, etc., is up $3.7 million from 2016 adopted rates, with smaller, largely inflationary increases in 2018 and 2019.

There is a slightly negative net impact of changes in capital financing across the rate period, although year-on-year fluctuations are significant after 2016 bond proceeds are exhausted in 2017. Cash reserves generated in prior years are used to fund capital projects in lieu of issuing new debt, neutralizing to a large degree the impact of increased capital cash financing on the rates revenue requirement.

The following sections include more detailed descriptions of the components of change in the rates revenue requirement. While not direct drivers of the revenue requirement, demand, rate discounts, and the timing of rate increases do impact the level of rates. Further discussion of these impacts follows the discussion of revenue requirement components.

3.1. Operations and Maintenance (O&M)

Adopted 2016 rates assumed $96.6 million in contract O&M. 2017 contract O&M is projected to rise to $106.8 million. About half of this $10.2 million in increased spending is the result of a new recycling processing contract and the remainder a result of higher demand.

The 2016 rates adopted as part of the 2015-16 Mid-Term Rate Adjustment assumed Other (non-contract) O&M expenditures consistent with the Strategic Business Plan. Under the proposed rates, Other O&M increases by $3.7 million in 2017 compared with 2016 rate assumptions, with subsequent, largely inflationary, increases of $1.2 million in 2018 and $2.3 million in 2019.

The Other O&M expenditure requirement includes a portion of administrative expense (i.e. finance, customer service, etc.) that the SWF shares with the other SPU funds and other City departments, as well as direct solid waste operating expense. Other O&M does not include debt service or taxes, which are discussed below.

The $3.7 million increase between 2016 adopted rates and 2017 proposed rates is primarily in labor due to finalizing agreements with most of the City unions and approximately $1.5 million in O&M related to NCIS and the privacy initiative. The major offsetting decreases are lower health insurance rates in 2017 and increases in overhead offsets due to increases in CIP and Clean City program. Inflationary increases add small amounts to O&M in 2018 and 2019.

3.2. Taxes

Table 3-3 presents projected change in SWF tax expense between 2016 and 2019. SWF tax expenses include state and city taxes on revenues and City tonnage taxes (transfer tax).

Table 3-2: Taxes ($ millions)

	2016 Mid-Term	2017 Proposed	2018 Proposed	2019 Proposed
Solid Waste Utility Tax				
Solid Waste Utility Tax	14.6	15.5	15.6	16.0
Additional from Tax Rate Increase	-	3.2	4.4	4.5
Total Solid Waste Utility Tax	**14.6**	**18.7**	**20.0**	**20.5**
Tonnage Tax	3.6	4.2	4.3	4.3
Total City Taxes	**18.2**	**22.9**	**24.3**	**24.8**
State B&O Tax	**3.3**	**3.2**	**3.2**	**3.4**
Total Taxes	**21.5**	**26.1**	**27.5**	**28.2**
State Refuse Tax	*4.9*	*5.4*	*5.6*	*5.8*

City and state revenue taxes increase with increased revenue. In addition to revenue-generated increases, this rate proposal integrates an expected rise in the City's solid waste utility tax rate from 11.5 percent to 14.2 percent on April 1, 2017. This change will increase the tax expense by $3.2 million in 2017 and $4.4 million in 2018 when it will be in effect for the whole year.

The **tonnage tax** is a City-levied per-ton tax on non-recycling solid waste transferred for disposal in Seattle. SPU pays the tax as both a collector of solid waste and an operator of a transfer station in the City. The tax is also paid by other entities for the non-contract tons they transfer within the City limits. The tax provides funding for Clean Cities programs. Solid waste rates are set to recover the cost of paying the tonnage taxes to the City. SPU recovers revenue in the rates, pays the City its tax obligation and then the City transfers the total tonnage tax receipts back to SPU to pay for Clean Cities related costs (see more details under Other Funding Sources below). A higher baseline level of tonnage will increase the tonnage tax from the $3.6 million assumed in the Mid-Term Adjustment to an expected $4.2 million in 2017.

Since 2005, the SWF has classified **state refuse tax expense** as a payable rather than an expense. As such, these taxes (both the expense and the revenue associated with them) are not included on the SWF income statement included in *Appendix A Statement of Operating Results*. This procedure has no effect on the net income of SWF, as both revenue and expense are reduced equally. However, these taxes are included in

Table 3-2 for informational purposes.

3.3. Capital Financing Expense

SWF capital projects are funded through a combination of current cash (from direct service and non-rates revenue) and debt financing (revenue bonds). CIP through 2019 includes completion of the North Transfer Station, the South Park remediation projection, South Transfer Station Phase 2, the NCIS billing system, and the SWF's shared portion of City-wide IT upgrades including Summit. Total planned capital spending for the rate period is $60 million.

Annual capital financing expense fluctuates considerably, with lower financing expense relative to the prior year in 2017 ($5.7 million lower) and 2019 ($17.2 million lower) but a significant increase in 2018 ($21.7 million) relative to 2017. These fluctuations are primarily related to changes in CIP spending levels and exclusive use of operating cash to fund expenses from late 2017 through the balance of the rate period.

Table 3-3 presents capital spending (CIP) and financing assumptions during the rate period and how this financing impacts rates.

Table 3-3: Change in Cash Financing of the CIP ($ millions)

	2016 Mid-Term	2017 Proposed	2018 Proposed	2019 Proposed
Total CIP	31.2	17.6	29.7	12.6
Cash Financial Policy Minimums				
$2.5 million (2004 nominal $)	3.4	3.4	3.5	3.6
10% of CIP	3.1	1.8	3.0	1.3
Active Financial Policy Minimum	3.4	3.4	3.5	3.6
CIP Financing Breakdown				
Cash Financed	14.4	8.0	29.7	12.6
Debt Financed	16.8	9.6	-	-
Cash Financed %	46%	45%	100%	100%
Cash Financing Detail				
Financial Policy Minimum	3.4	3.4	3.5	3.6
Additional Incremental	11.0	4.6	26.2	9.0
Total Cash to CIP	14.4	8.0	29.7	12.6
Debt Service Detail				
Interest	9.8	9.7	9.3	9.0
Principal	5.8	6.7	6.9	7.3
Total Debt Service	15.6	16.3	16.2	16.2
Rate Drivers				
Change in Cash Financing		(6.4)	21.8	(17.2)

Change in Debt Service	0.7	(0.1)	(0.0)
Total Rate Impact	(5.7)	21.7	(17.2)

Debt Service

The Mid-Term Adjustment planned for a $35 million debt issue in 2015 and a $15 million issue in 2017. The rate proposal shifts the 2017 issue to 2016 and increases the size to $19 million. The earlier and larger issue will push principal payments up by $0.9 million, but favorable interest rates will keep interest payments close to projections.

SPU does not expect to issue additional SWF debt during the proposed rate period, or even in the foreseeable future as capital spending is expected to taper off significantly after completion of the facilities master plan. Therefore, debt service remains nearly flat throughout the rate period. Keeping debt service low by financing as much CIP as possible through cash instead of debt will minimize the amount of revenue the SWF will need to raise in future years to satisfy debt service coverage financial policies.

Cash Financing

As discussed in Chapter 2, the minimum cash contribution to the CIP is the greater of 10 percent of the CIP in a given year or $2.5 million (in 2004 nominal dollars converted to current nominal dollars). During the proposed rate period, the $2.5 million target ($3.4 to $3.6 million per year in rate period nominal dollars) is the larger of the two targeted amounts, equating to a minimum financial target cash contribution of $10.5 million during the proposed rate period.

However, the SWF is projected to fund about $50 million of $60 million in capital expenditures with operating cash between 2017 and 2019, or about 84 percent of total CIP spending. SPU has chosen to not issue additional debt when the 2016 bond issue proceeds are exhausted in 2017 in order to minimize the need for future debt issues and rate increases driven by debt service coverage. SWF cash reserves are sufficient to fund this increased capital financing expense due to a 2015-instituted change in the way that the fund calculates debt service coverage (see 3.4 Financial Policies below), as well as strong operating results in 2015 and 2016 which contributed to higher cash reserves entering the new rate period than were anticipated at the time Mid-Term rates were adopted.

3.4. Financial Policies

The impact of financial policies on the revenue requirement varies depending on which target is binding (see Section 2.3 for further discussion of financial policies and binding constraints). Revenues must be sufficient to cover all cash operating expense AND to meet net income, debt service coverage, cash contribution to CIP and operating cash balance targets. Where the binding constraint is meeting cash targets, rates are set so that revenues will just equal cash expense AND retain minimum operating cash balances. Where the binding constraint is net income or debt service coverage, revenues will be greater than cash expense. This “extra cash” may be used to fund operating cash contributions to the CIP in excess of targeted levels or may be used to increase cash reserves, or some combination of the two.

As discussed in Chapter 2, the **binding constraint in the 2017-2018 rate period is debt service coverage,** and **meeting cash targets in 2019**. Debt service coverage has been the binding constraint since 2015, with the adoption of the new 1.5x debt service coverage target.

In 2017 and 2018, the "Other Financial Policies" requirement in Table 3-1 shows the amount of revenue required in excess of cash spending requirements, which is $1.7 million in 2017, $1.1 million in 2018, and $1.1 million in 2019. This excess revenue increases cash balances in 2017 and helps the fund to maintain its minimum cash balance targets in 2018 and 2019 as the large cash reserve at the beginning of the rate period is spent down to finance capital expenses. Although cash contribution to the CIP are significantly higher than financial policy targets, this incremental expense is not driven by financial policy requirements. Rather SWF bond proceeds will be depleted in 2017, and from that point all CIP will be paid for by cash instead of another debt issue in an effort to keep the debt service obligation low. Therefore, the higher levels of cash financing in 2017 and 2018 are actually a spending requirement.

In 2019 cash contributions to CIP will have depleted operating cash below the minimum requirement and an RSF withdrawal will be required.

3.5. Other Funding Sources

A significant portion of the total solid waste system funding requirement is paid with by other funding sources including operating cash balances, Rate Stabilization Fund withdrawals, and other operating and non-operating non-rates revenues. On aggregate, these non-rates funding sources are expected to increase by $3.7 million in 2017, $20.9 million in 2019, and to decrease by $16.8 million in 2019.

Following is a discussion of each of the other funding sources.

Prior Year Operating Cash

Revenue generated by rates is used to fund current operating expenses, maintain a cash balance as a safeguard against unexpected expense, and to fund a portion of the current capital program. A rate may be set to increase, hold constant, or decrease the SWF's operating fund cash balances. Decreasing, or drawing down a cash balance in a given year lowers the rates in that year as that cash does not need to be received through rate revenues. However, just like other funding sources, what affects rates is not the level in any one year, but the year to year change in funding from that source.

Table 3-4 presents both how cash is used (drawn down or increased) in each year as well as the year-on-year change in use of cash. Positive changes (generating more cash than the prior year) increase rates. Negative changes (using more cash than in the prior year or generating smaller increases) reduces rates.

Table 3-4: Proposed Changes to Cash Balances ($ millions)

	2016	2017		2018		2019	
	Mid-Term	Proposed	Change	Proposed	Change	Proposed	Change
Operating Cash							
Net Cash from Operating Activities	(7.3)	-	7.3	(20.7)	(20.7)	0.8	21.5
Additional Cash from Financial Policies	-	1.2	1.2	-	(1.1)	-	-
Change in Cash Balance	(7.3)	1.2	8.4	(20.7)	(21.8)	0.8	21.5
Starting Balance	28.9	42.4		43.5		22.8	
Ending Balance	21.6	43.5		22.8		23.6	

Some totals may not add due to rounding

Since 2015, rates have been set with the 1.50 DSC policy as the binding constraint. As noted in Section 3.5, this financial policy generates excess cash. This policy target in combination with stronger than anticipated operating performance during 2015 and 2016 (projected), has resulted in projected cash balances at the beginning of the rate period that are above the minimum policy requirements.

In 2017, this excess cash is not spent and rates revenues further increase cash balances by $1.2 million. Starting in 2018, cash reserves are diverted to financing CIP expense, with balances drawn down by $20.7 million that year, significantly reducing the amount of revenue that needs to be recovered through rates. In 2019, a $4.5 million withdrawal from the RSF minimizes the amount of revenue that must be recovered from 2019 rates to satisfy the minimum operating cash balance.

Rate Stabilization Fund Withdrawals

The 2013-2016 Solid Waste Rate Study established policies around the use of a Rate Stabilization Fund (RSF) for the SWF. The RSF was intended to help provide rate stability during a four-year rate period. RSF balances rose to $18 million (as of December 2015) and are projected to end 2016 at $19 million on strong revenues and low spending. Withdrawals from the RSF are authorized in the event that the SWF would miss a financial target.

Rates have been set with the 1.50 DSC policy as the binding constraint. This financial policy will generate a significant amount of cash in the long-run, but through 2019, diversion of cash to CIP will place pressure on the 45-day operating cash balance policy. In 2019, cash will fall to $4.5 million below target, but by 2020 will be $3.3 million over target. Instead of setting 2019 rates higher to earn an additional $4.5 million in cash, a $4.5 million withdrawal was taken from the RSF.

Table 3-5: Proposed Changes to the Solid Waste RSF ($ millions)

	2016	2017		2018		2019	
	Mid-Term	Proposed	Change	Proposed	Change	Proposed	Change
Rate Stabilization Fund							
Starting Balance	**3.7**	**19.0**	**15.3**	**19.0**	**-**	**19.0**	**-**
Withdrawal to Fund Debt Service Coverage	-	-	-	-	-	-	-
Withdrawal to Fund Operating Cash Balance	(3.5)	-	3.5	-	-	(4.5)	(4.5)
Ending Balance	**0.2**	**19.0**	**18.8**	**19.0**	**-**	**14.5**	**(4.5)**

Non-Rate Revenues

Non-rate revenues are current year revenues including recycling commodity revenue, miscellaneous transfer station revenues, reimbursements from King County, the City's General Fund and SCL, operating and capital grants, interest income and other miscellaneous revenues. As presented in Table 3-6 below, non-rates revenues are projected to increase by $7.1 million in 2017 relative to the assumption for these revenues when 2016 rates were set, and then remain relatively flat during the 2017-2019 rate period, increasing by $0.4 million between 2017 and 2019.

Table 3-6: Solid Waste Non-Rates Revenues ($ millions)

	2016	2017	2018	2019
	Mid-Term	Proposed	Proposed	Proposed
SPU Sources				
Recycling Commodity	0.8	7.1	7.2	7.2
Other Misc.	0.9	1.5	1.5	1.5
Investment and Other	0.2	0.3	0.3	0.4
City and County				
Tonnage Tax	6.4	6.4	6.4	6.4
LHWMP	2.9	2.8	2.8	2.9
Seattle City Light	1.9	2.0	2.0	2.0
Grants	0.5	0.8	0.8	0.8
Total Non-Rates Revenues	**13.6**	**20.7**	**20.9**	**21.1**
Change		7.1	0.2	0.2

The largest categories of non-rates revenues are recycling processing revenues and tonnage tax revenues, which combined account for about 65 percent of non-rates revenues across this period.

Recycling Processing Revenues

Recycling processing revenues are paid by the City's recycling processing contractor to SPU based on contract indices for different types of commodities in the recycling stream. Recycling processing expense paid by SPU is reported under contract expense. A new recycling processing contract which took effect April 1, 2016 is expected to generate approximately $5 million in revenue in 2016 and about $7 million annually between 2017 and 2019, which is an increase of $7 million relative to what was assumed in the 2016 Mid-Term Adjustment under the old contract terms. Offset by higher contract expense and taxes,

there is a net $1 million annual savings. This contract will be in effect until 2027 with City opt-outs in 2021 and 2024.

Tonnage Tax Revenues

The City levies a per-ton tax on all garbage tons transferred in the City. SPU, as a collector and transfer station operator, pays this tax to the City as do other entities. Per ordinance, all the receipts from the tonnage taxes are transferred from the General Fund to the Solid Waste Fund to pay for Clean City program activities.

Tonnage tax revenues are comparable to the Mid-Term Adjustment despite higher tonnages. Previously, SPU had assumed that the General Fund would pay for any shortfalls between Tonnage Tax revenue and Clean City expenses. This additional revenue, which came to $0.6 million to $0.9 million per year, was recorded in the Mid-Term Adjustment as additional Tonnage Tax "Revenue," even though it was in actuality a transfer. SPU is no longer assuming this support, but higher tonnages have roughly offset the loss.

3.6. Other Factors Impacting Rates

While not direct drivers of the revenue requirement, demand, rate discounts, and the timing of rate increases impact the level of rates.

Demand

Customer counts, tons and subscription levels affect revenues and the required change in rates from year to year. Tonnages decreases reduce costs in some cases, but also reduce the number of units to which the costs are allocated. The exact impact on rates depends on the relative changes in cost and revenue. In the first year of a rate study, changes from prior projections are reflected as major rate drivers. Subsequent years see less drastic change as the new baseline is used. For 2017, the change in the demand forecast from 2015 Mid-Term Adjustment assumptions is the largest deviation, and therefore the most significant rate driver. The 2015 demand components that have varied the most from earlier projections include:

- **Residential**: Reduced container sizes among curbside garbage customers has been more than offset by increased demand for on-site detach service and organics service. Organics service was especially helped by the foodwaste ban (Ordinance 124582) which became effective in 2015. A risk in this rate study is that the future of foodwaste ban is under legal review.
- **Commercial:** A strong economic recovery pushed commercial demand significantly up, particularly among drop box customers. Revenue was five percent higher than expected in 2015 compared to the Mid-Term Adjustment.
- **Self-Haul**: Self-Haul demand is on track with the Mid-Term Adjustment. An increase in demand from 2016 to 2017 is expected as a results of the North Transfer Station opening.

These factors are further explained in detail in Chapter 5, Demand. The revenue impact of these changes by customer class is shown in Table 3-7. Revenues are increased by $11 million in 2017 solely as a result of demand.

Table 3-7: Change in Demand Impact on Revenues ($ millions)

	2017* Proposed	2018 Proposed	2019 Proposed
Residential	6.6	0.5	0.5
Commercial	3.4	(0.2)	(0.2)
Self-Haul	1.0	0.2	0.2
Total Impact	**11.0**	**0.5**	**0.5**

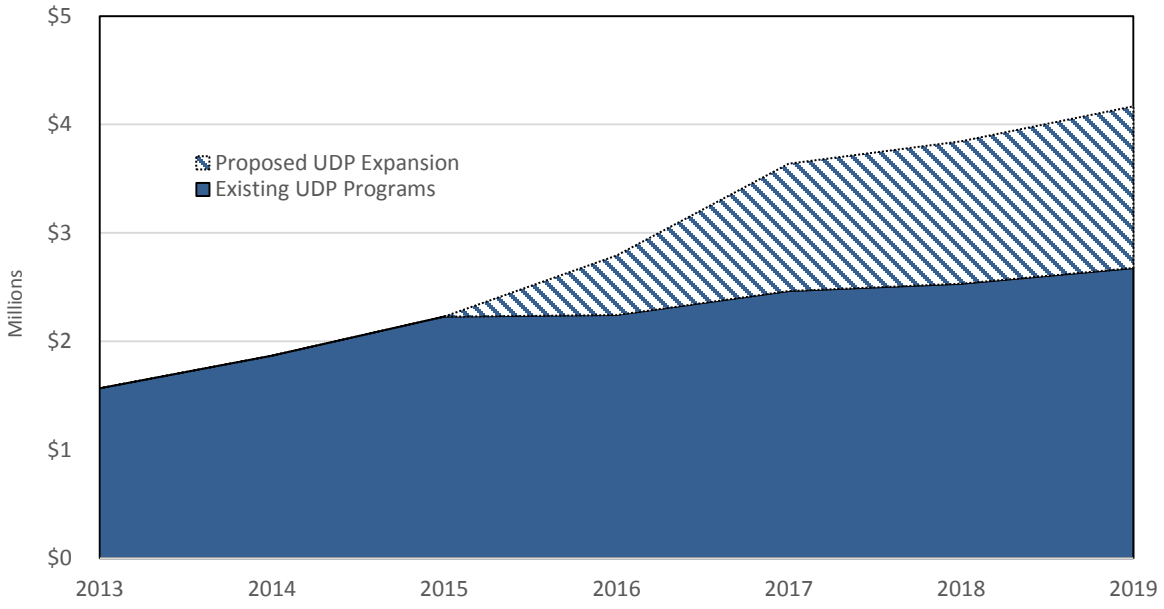
**2017 is additional revenue at 2016 rates compared to demand assumed in the Mid-Term*

Utility Discount Program (UDP)

Like other demand components, changes in customer participation in the Utility Discount Program do not affect the SWF revenue requirement, but do affect the rate increase. Increased participation in the program reduces revenues as more households pay at a discounted rate. The reduction in revenue must be made up through an increase in standard rates.

UDP reduced solid waste residential revenue by 1.9 percent in 2015, a slightly larger reduction than the 2009-2014 average of 1.7 percent. If the UDP program were not specifically expanded, revenue reductions of 1.9 percent going forward would be expected. By 2019 the total reduction would be $2.7 million, up from $2.2 million in 2015. The proposed UDP expansion will reduce revenue by an additional $1.5 million in 2017 growing with rate increases to $1.9 million by 2019. See Figure 3-1 for a breakdown and forecast of existing and proposed additional UDP revenue reductions.

Figure 3-1: Existing and Proposed UDP Revenue Reductions



4. SOLID WASTE COST ALLOCATION

After revenue requirements have been calculated, the cost allocation process assigns them to individual customer classes. This process estimates the true cost of serving different types of customers and provides the foundation for rate design, although actual rates may vary from the assigned cost allocations because of other (often times competing) ratemaking and policy considerations.

The cost allocation process can be broken into three basic steps:

- Group Costs into Cost Centers
- Develop Allocation Factors
- Allocate Costs to Customer Classes and Rates

4.1. Cost Centers

Solid waste costs are divided among 39 cost centers. All budget activities, as well as current and future budget additions, are assigned to a cost center based on primary function. Costs for contracts, taxes, and bond interest are modeled based on the latest projections for tons, subscriptions, revenues and CIP spending, and are then assigned to cost centers. Table 4-1 shows a list of cost centers.

Table 4-1: Solid Waste Cost Centers by Category

SPU Branch O&M	Contract Expense	Taxes	Non-Rates Revenue	Capital Financing and Other
Residential Billing	Curbside Garbage	Utility Tax	Clean City/Tonnage Tax	BIA
Transfer Station Billing	Curbside Recycling	Tonnage Tax	Investments and Interest	Cash to CIP
Retired Landfills	Multi-family Recycling	State Taxes	Grants	Debt Service
Waste Reduction (All)	Curbside Organics		Change in Cash	
Waste Reduction (Residential)	COM&MF Garbage Collection		Change in RSF	
G&A – Communications	Long-Haul Disposal		Recycling Commodity	
G&A - Contract Management	Garbage Transfer		Other Misc.	
Hauling (All)	Recycling Processing			
Hauling (Garbage)	Compost Processing			
Hauling (Organics)	LHWMP			
Hauling (Recycling)				
Material Loading				
Transfer Station Operations				
Clean City				
G&A - General				
HR				

4.2. Develop and Assign Allocation Factors

Once costs are grouped, each cost center is assigned an allocation factor (See Appendix B for a complete listing of allocation factors for each Cost Center). Allocation factors are multipliers that allocate cost centers into individual customer classes and eventually rates. The basis for allocation differs by cost center, but always seeks to logically assign each rate its fair share of the cost of providing a service based on known data. Costs are allocated using allocation factors which are based on the following:

Tonnage
Many solid waste costs, such as contractor payments for recycling processing or garbage transfer and disposal, are directly related to tons collected or disposed. Costs are allocated based on the tonnage per rate. Tons may also be used to allocate certain other costs even though there is not a direct relationship between the given cost and tons collected or disposed. Specific garbage, organics, or recycling tonnage allocators are used to allocate waste stream specific costs, such as recycling processing.

Volume
Multi-family and commercial contracts incur cost based on the volume of service subscribed by customers. For example, fees paid to the Local Hazardous Waste Management Program (LHWMP) are based on the total volume of customers' subscriptions. Detach (Dumpster) customers subscribe to a particular size and collection frequency of dumpster, and contractors charge SPU based on a similar formula. When costs are incurred based on volume, it is used to distribute those costs to individual customer classes.

Customer Counts and Trips
This allocation method is used when the cost of service, such as billing expenses, is related to the number of households or accounts rather than tonnage or another measure of how much service a customer receives. Transfer station billing costs are allocated based on trip counts, since each trip incurs the same cost to billing.

Management Estimates
Some allocations are based on management estimates of time spent serving different customer classes. Such estimates help determine the full cost of service for the class. For example, workload estimates are used to allocate inspection costs and in conjunction with tons, allocate transfer station costs.

Direct Assignment
Where solid waste costs benefit only one customer class, direct assignment to that class of such costs is appropriate.

Proportional Assignment (Revenue Requirement Shares)
This method assigns costs in proportion to the sum of other allocated costs. The rate proposal uses this allocation method to assign costs such as general and administrative costs.

Revenue
Costs which are incurred based on how much revenue is earned are allocated by total revenue. State taxes are an example.

Ad Hoc
Often no single method is appropriate for allocating costs so a combination of other allocation factors is formulated to best fit the type of costs.

4.3. Customer Classes

Solid waste ratepayers are divided into 4 sectors which are divided into 10 total classes. Cost allocation is done at the class level and aggregated up to the sector level, and is presented in the results below at the sector level. See Table 4-2 for a breakdown of these classes. Recycling service is available at no additional charge to all customers.

Table 4-2: Solid Waste Customer Classes

Sector	Class
Residential	Curbside (Single-Family, Can/Cart)
	On-Site (Multi-Family, Detach)
	Recycling (Curbside or On-Site)
Commercial	Non-Dropbox (Can/Cart and Detach)
	Dropbox (On-Demand Large Scale Service)
	Recycling (Limited Service)
Organics	Curbside (Yardwaste)
	On-Site (Foodwaste)
Transfer Stations	Garbage
	Organics

Residential Sector

This customer sector consists of garbage and recycling services for all single-family and multi-family households in the City (Organics service is a separate sector discussed below). This sector is further broken down into the following subgroups for rate-setting purposes: Curbside Can/Cart (Single-Family) and On-Site Detach (Multi-Family).

Single-family residences receive weekly curbside garbage collection and bi-weekly recycling collection. Multi-family buildings are generally serviced using dumpsters, and are required to have garbage service of sufficient size and collection frequency to meet the needs of the building.

Commercial Sector

This sector covers all non-residential subscribers to garbage collection services. Businesses may subscribe to can, dumpster, or drop box collection services at SPU's commercial rates. SPU offers limited recycling service to small businesses, but for the most part commercial recycling is not part of the City-provided services.

Organics Sector

SPU offers curbside and on-site organics service. Curbside service is regular, weekly pickup of yardwaste containers from single family residences and is the most common organic service offered. Weekly on-site collection for multi-family buildings is offered to handle foodwaste. Foodwaste is denser and more thus costly to process by volume, so rates for foodwaste service are higher than those for yardwaste. SPU also offers commercial organics service, but the vast majority of this market is served privately.

Recycling and Disposal Station (Self-Haul) Sector

These customers include residences and businesses that bring garbage and recyclable materials (including yard waste and wood waste) to the City's Recycling and Disposal Stations

4.4. Allocation Results

Table 4-3 shows the percentage of the total revenue requirement allocated to each customer sector, by year, using the allocation factors by cost center presented in Table 4-3.

Table 4-3: Cost to Serve Each Customer Sector

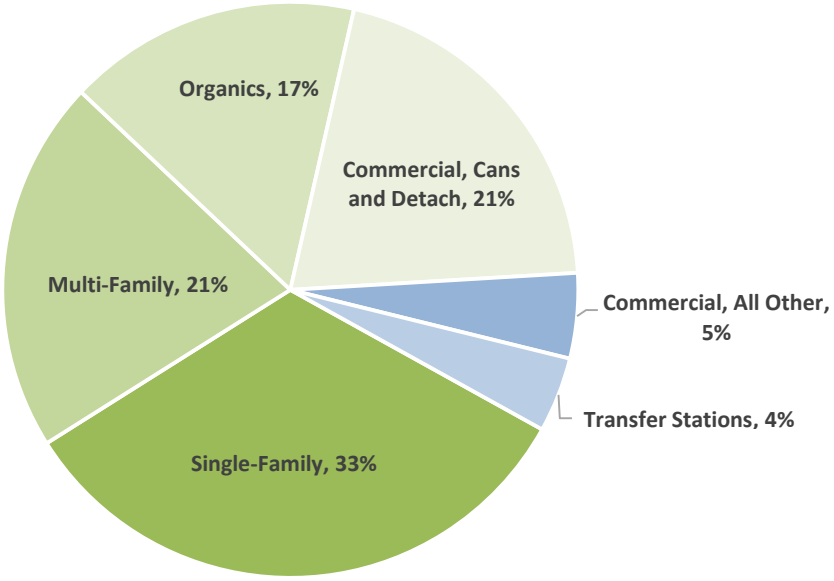
Sector/Class	2017	2018	2019
Residential			
Single-Family Curbside Garbage	*25.8%*	*25.6%*	*25.3%*
Recycling	*7.2%*	*7.3%*	*7.5%*
Single-Family Garbage & Recycling	33.0%	32.9%	32.8%
Multi-Family On-Site Garbage	*15.2%*	*15.2%*	*15.1%*
Recycling	*5.5%*	*5.8%*	*6.1%*
Multi-Family Garbage & Recycling	20.7%	21.0%	21.2%
Organics (Single and Multi-Family)	16.5%	16.5%	16.5%
Residential Total	**70.3%**	**70.4%**	**70.6%**
Commercial			
Cans and Detach	20.5%	20.3%	20.2%
Dropbox	4.5%	4.4%	4.3%
Commercial Organics	0.4%	0.5%	0.5%
Commercial Recycling	<0.1%	<0.1%	<0.1%
Commercial Total	**25.4%**	**25.1%**	**25.0%**
Transfer Stations	**4.4%**	**4.4%**	**4.4%**

All sectors have a stable allocation of costs throughout the entire rate period. A decrease in costs allocated to transfer stations customers is primarily a result of a correction to the allocation methodology regarding taxes. Transfer station customers are no longer allocated a portion of the utility tax because transfer station revenue is not, and has not been, subject to the utility tax. The rise in the residential allocation is largely a result of corrected allocation.

There are no major programmatic changes (new contracts, collection frequency changes, etc.) in the rate study period to alter the cost distribution going forward. Thus, the customer class allocation above is very similar to that calculated for the 2013-16 Rate Study. The primary potential unknown going into the coming rate period is the procurement of new collections contracts in 2019. SPU is assuming that new contracts will operate the same as the current contracts, and have the same three percent annual inflation.

See Figure 4-1 for a graphical breakdown of Revenue Requirement shares.

Figure 4-1: Allocation of Solid Waste Revenue Requirement (2019)



5. DEMAND

After the revenue requirement is set and those costs have been allocated to specific customer classes, they can be divided by units to get rates. For solid waste however, units of demand is not a singular number but is instead made up of can subscriptions, account fees, pickup, volume, and tonnage charges, among others. As a result, the demand forecast projects out the demand and resultant revenue for individual rates and rolls them up to the customer class level. Demand also impacts the revenue requirement itself, as demand forecasts form the basis for projected contract expense.

Figure 5-1: Tonnage Forecast

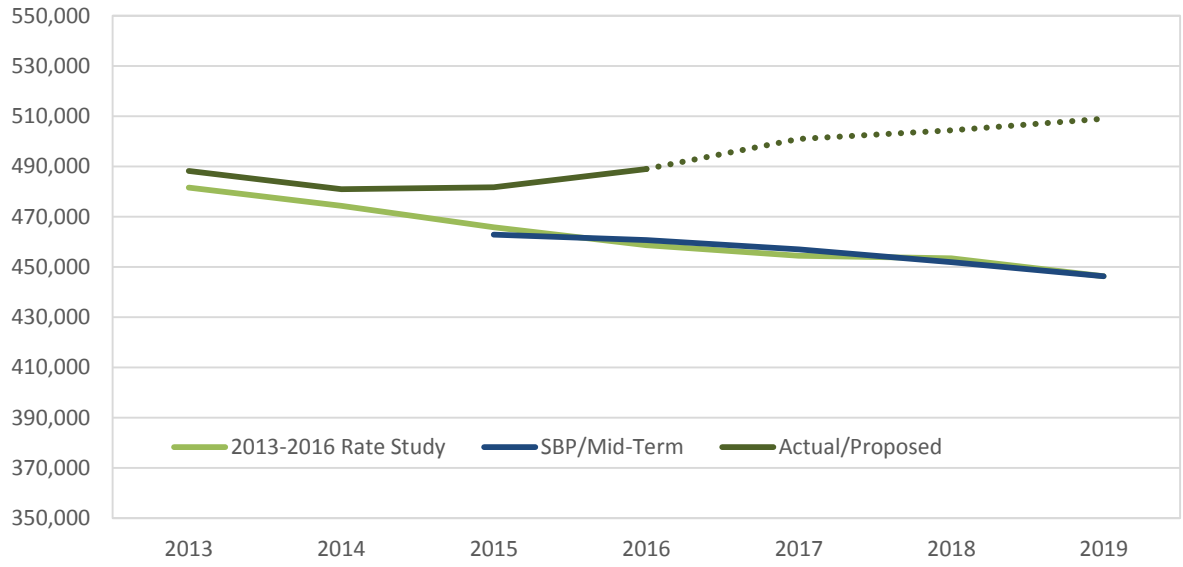
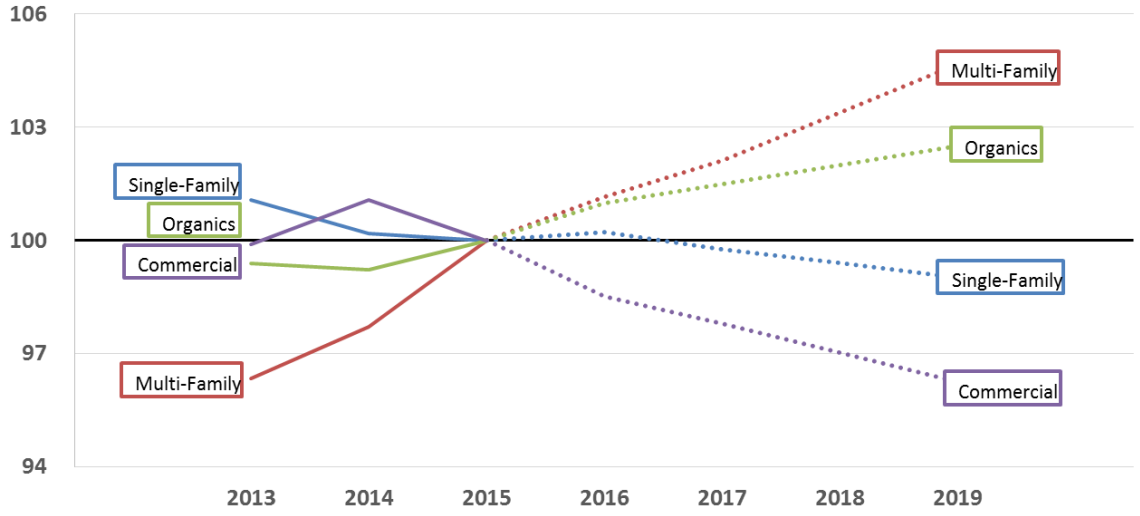


Figure 5-1 shows tonnage (combined garbage, organics, and recycling) as predicted during the last rate study, the SBP and Mid-Term Adjustment, and the latest actuals with the proposed tonnage forecast. While tonnage is not a driver of revenue, since customers subscribe to solid waste service based on volume, it is an adequate proxy for a general overview of demand. Predicted tonnage was lower than actual tonnage in 2013 and 2014, but both followed the same general downward trend. This trend was expected to continue but instead reversed in 2014-2015 with the local economic expansion. Tonnage in 2015 was six percent higher than expected. Since 2013, the higher than expected tonnages have been a driver behind higher than expected revenues and higher than expected cash balances in the SWF.

Into the future, tonnage is not expected to change significantly with the exception of the re-opening of the North Transfer Station. Total tonnage is expected to rise four percent from 2016 to 2019, but garbage tonnage excluding the transfer stations is expected to remain constant at 240,000 tons per year.

Figure 5-2: Normalized Solid Waste Volume Index (2015 = 100) by Customer Sector



While overall tonnage is expected to increase slightly, there is significant among the individual components. Single-family and commercial garbage volumes are projected to decline largely due to conservation and waste reduction with a 0.9 percent reduction in average residential can size and a four percent reduction in commercial volume. Multi-family volume is expected to increase by five percent and organics by two percent. While increased organics volumes appear to offset volume declines in the single-family and commercial sectors, it is not an offset in terms of revenue as organics rates per volume are lower than those for garbage by design to encourage diversion. Furthermore, part of the volume decline for these two sectors is diversion to recycling, which is free. See Table 5-1 for a full breakdown of projected volume and tonnage changes.

Compared to the level of demand assumed in proposed rates, 2017 is projected to see a nine percent increase in tonnage and a one percent increase in volume. This translates into an $11 million improvement to revenues at 2016 rates, or a six percent boost.

As noted in the introduction to this Section, solid waste “demand” encompasses multiple factors. Table 5-1 below presents changes in demand for each customer sector for the primary variables of demand.

Table 5-1: Projected Solid Waste Demand Changes 2016-2019

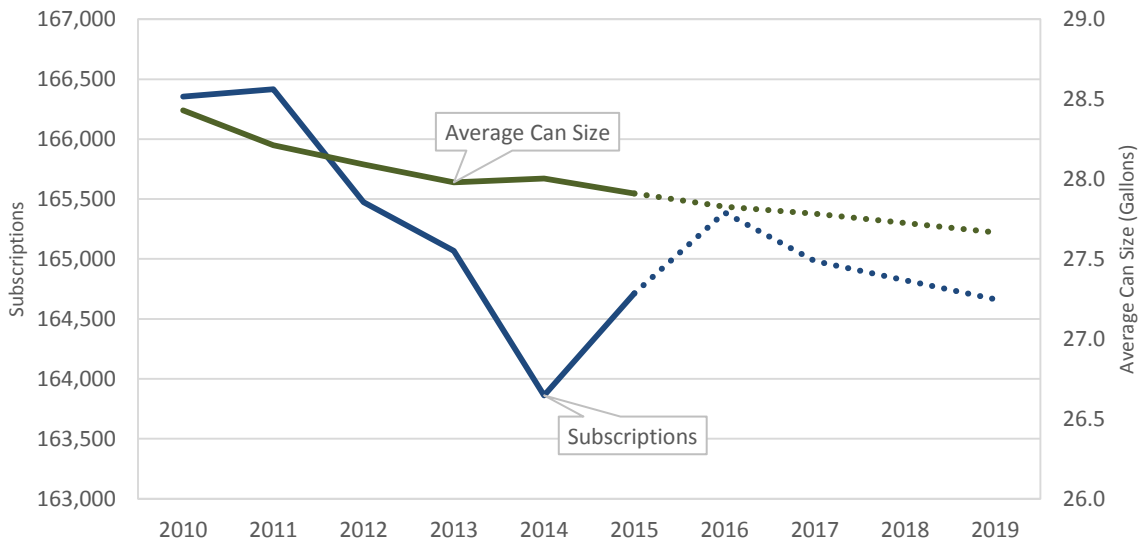
Sector	Customers	Volume	Tonnage
Residential Curbside (Single-Family)	0.0%	-1.0%	-3.3%
Residential On-Site (Multi-Family)	4.7%	0.8%	4.9%
Commercial	-4.3%	-3.8%	0.2%
Organics	4.3%	1.6%	6.3%

A more in depth explanation of each of these revenue sectors follows.

5.1. Residential Curbside (Single-Family)

Single-Family and multi-family buildings are served by regular weekly curbside can or cart collection. Service counts and can sizes have been stable but declining since 2010, the first full year of the current contract cycle. During the 6 year period from 2010 to 2015 there was a one percent decline in service counts and a 1.8 percent decline in can sizes. These trends have been consistent with the exception of 2015 which saw an increase in service counts.

Figure 5-3: Historic and Projected Changes to Curbside Residential Demand



The long-term trend is however expected to continue. The decline in subscription counts are likely due to infill development, conservation, and diversion. Infill development both reduces the number of subscriptions by replacing single-family homes with multi-family buildings, but apartments and condominiums also produce less waste than single-family homes. Both factors lower the average can size demanded by customers. Conservation and diversion also decrease can sizes by decreasing the amount of waste produced by all customers, single or multi-family, or diverting it to organics or recycling. Infill development, conservation, and diversion, particularly to organics, are expected to continue to reduce demand for curbside garbage services.

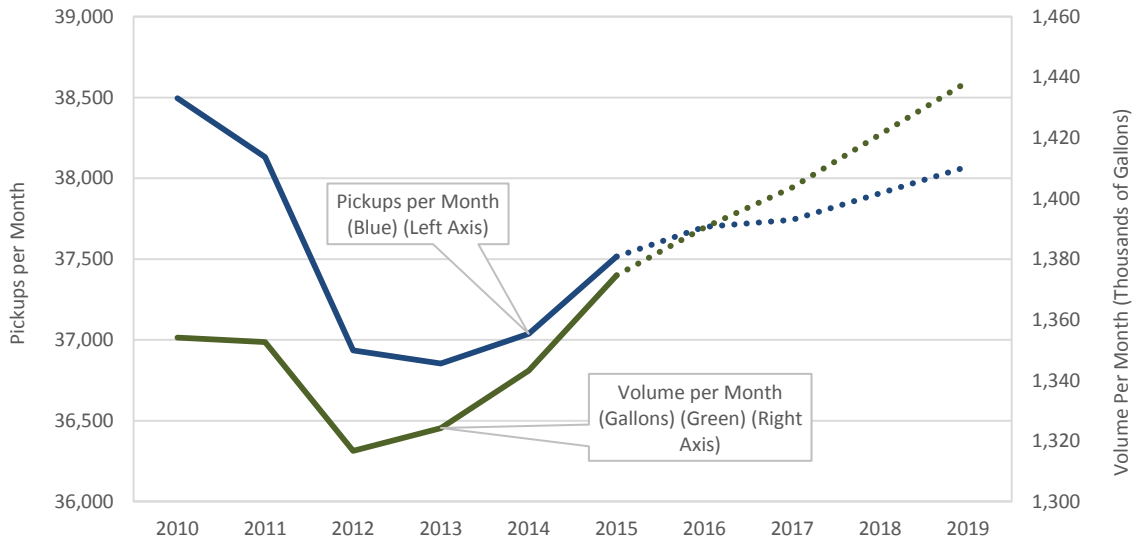
5.2. Residential On-Site (Multi-Family)

Most multi-Family buildings in Seattle subscribe to on-site detach (dumpster) service. Detach customers are charged based on the frequency of pickup and the size of the container according to the following formula:

*Monthly Rate = Trip Rate * Pickups per Month + Volume Rate * (Pickups Per Month * Volume of Container)*

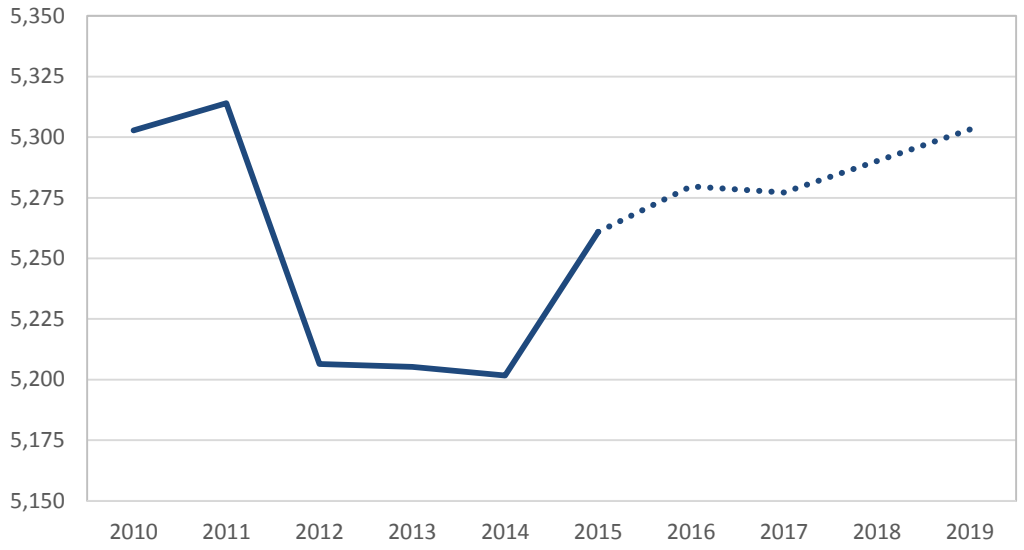
The Trip and Volume Rates are set through this rate study. The demand items to track and forecast are pickups per month and volume demanded. Both of these demand categories saw a sharp post-recession decline which rebounded in 2012. Growth is expected in both categories as construction of multi-family buildings within the City continues to create demand.

Figure 5-4: Historic and Projected Changes to On-Site Residential Demand



The final component of on-site demand is the number of accounts paying the monthly account fee. The account fee generates roughly six percent of total on-site revenue. Accounts are expected to increase slightly after having fallen by 1.9 percent from 2010 to 2014.

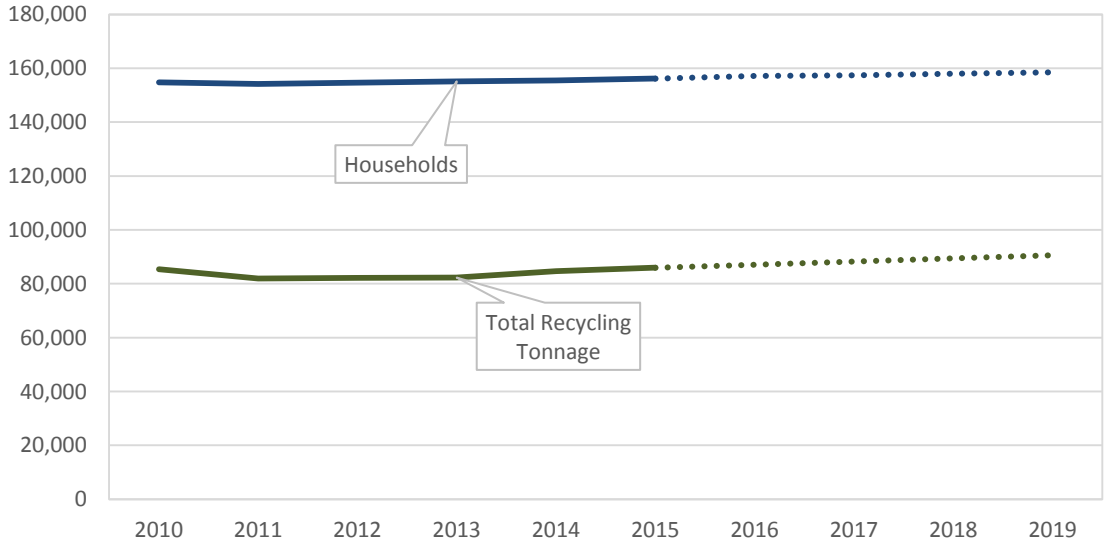
Figure 5-5: Historic and Projected Residential On-Site Accounts



5.3. Recycling

SPU offers bi-weekly curbside recycling pickup for curbside can customers and on-site variable frequency pickup for on-site customers. For the most part, can sizes are set – all curbside customers receive a 96-gallon cart, and all on-site customers receive recycling cart or detach service that has a total volume of 50 percent of their subscribed garbage volume. Larger volume services are also available. Limited recycling service is also available to small businesses, though small business recycling amounts to less than half a percent of total recycling tonnage. All recycling services are offered at no cost to ratepayers.

Figure 5-6: Total Recycling Households and Tonnage



Because there is less customer choice in regards to container sizes, recycling is a relatively steady cost center. Customer counts are largely unchanged, and tonnage increases coming out of the recession have been slow and steady.

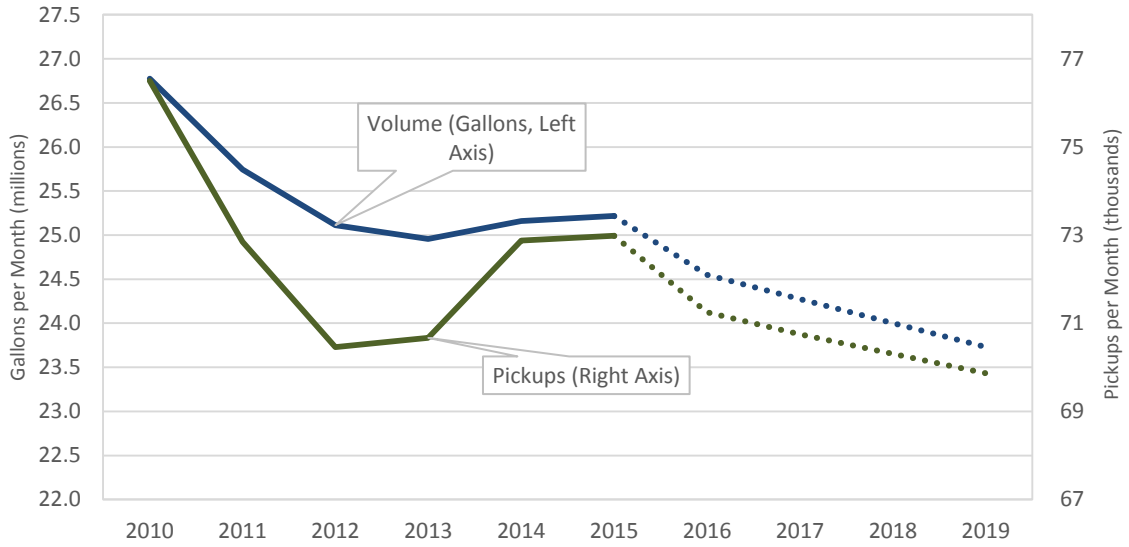
5.4. Commercial

Commercial customers subscribe to one or more of three types of services: can, detach (dumpsters), or dropbox. Can customers may subscribe to service of any frequency with a charge per pickup based on can size. Detach customers subscribe to service with a charge based on a pickup and volume rate:

*Monthly Rate = Trip Rate * Pickups per Month + Volume Rate * (Pickups Per Month * Volume of Container)*

Lastly, dropbox customers pay an on-demand pickup rate and a tonnage rate.

Figure 5-7: Historic and Projected Commercial Volume and Pickups



Commercial demand is highly correlated to regional economic performance, within the larger long-term context of conservation and diversion. Commercial tonnage has gone through at least three cyclical increases and decreases over the last 25 years within a long-term decline trend. Since 2000, tonnage has fallen from 225,000 tons per year to 140,000 tons in 2014. As the economy has recovered, particularly in 2014 and 2015, commercial tonnage has somewhat recovered, and commercial volume and pickup subscriptions have increased as well. However, a long-term trend of conservation and diversion is still projected to be the dominant theme in the commercial sector. Combined volume is expected to decline by 6 percent by 2019. Pickups are expected to decline by 4 percent by 2019.

Commercial Recycling and Organics

SPU provides limited recycling and organics services to small business. Most recycling and organics services are provided by independent third party companies. SPU services are offered as a courtesy.

With the implementation of the foodwaste ban in 2015, commercial organics subscription volumes increased seventy percent 2014 to 2016. Despite this growth, commercial organics is less than one

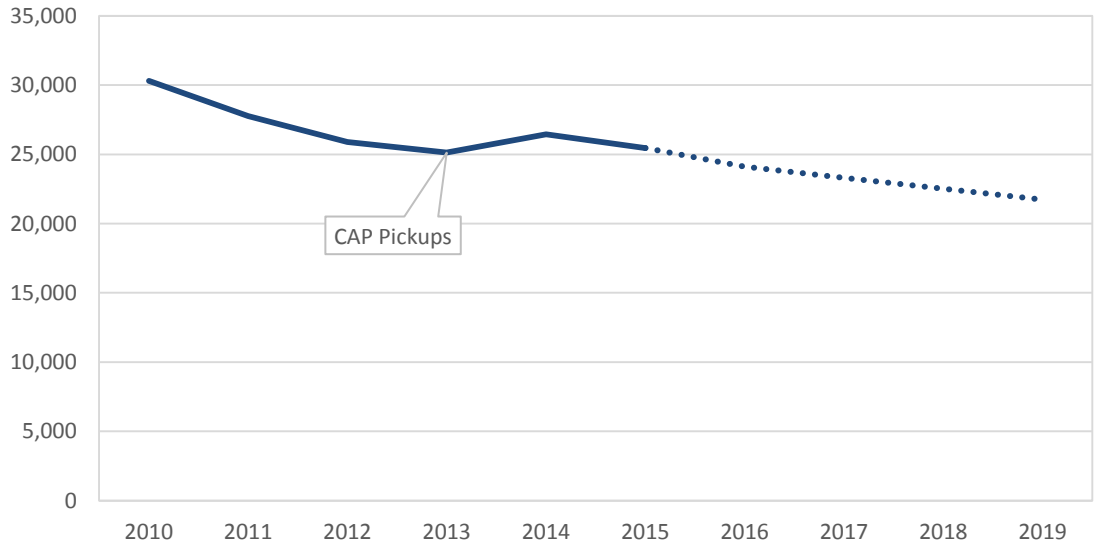
percent of total organics tonnage and will continue to remain a service offered as a courtesy by SPU with the intention that this industry is largely in the realm of the private sector. Commercial organics is included under "On-Site Foodwaste" in the organics section below.

Small businesses in Seattle can also subscribe to limited recycling service, though like organics this service is largely also private sector. The demand for this service is included under residential recycling. Total commercial recycling tonnage is less than half a percent of total recycling tonnage.

Clear Alleys Program (CAP)

In certain designated areas within the city of Seattle, residents and business are not allowed to keep solid waste containers within the public right-of-way. For customers in these areas who do not have indoor locations for containers, the CAP program offers pre-paid bag service with multiple pickups per day. SPU is not assuming an expansion of CAP-designated areas, only changes in demand for current CAP customers. The CAP program is a small portion of SPU's services, and provides less than $60,000 in revenue per year. SPU is projected a slow decline in CAP demand, mirroring the general commercial trend.

Figure 5-8: CAP Pickups



Argo Direct

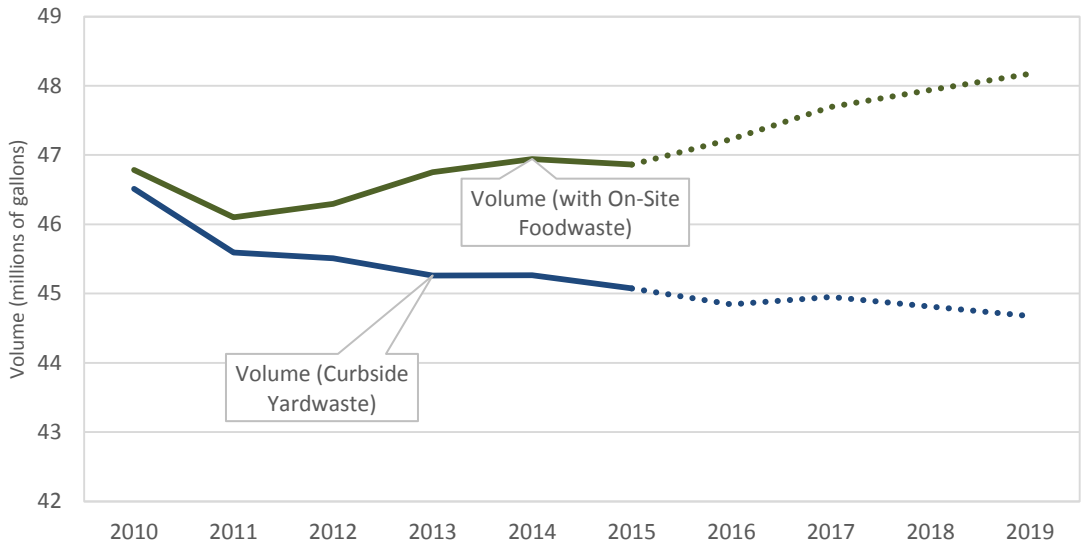
SPU allows for the delivery of solid waste from third parties directly to the railroad for transport to landfill in Oregon. Usage of this program has declined by more than 60 percent since 2009 and SPU projects 6,000 tons per year (compared to 250,000 total tons) or less delivered to the railhead.

5.5. Organics

Residential curbside and on-site customers subscribe to either curbside or on-site service. Generally, curbside garbage customers subscribe to curbside yardwaste service. On-site customers generally subscribe to on-site foodwaste service. Foodwaste-specific service is charged at a higher rate because foodwaste tends to be denser than branches and clippings from yardwaste which account for the bulk of

curbside customer volumes. Some small commercial customers also subscribe to on-site foodwaste pickup, and their demand is included in the on-site numbers below, but makes up less than one percent of the total.

Figure 5-9: Monthly Organics Volume in Gallons



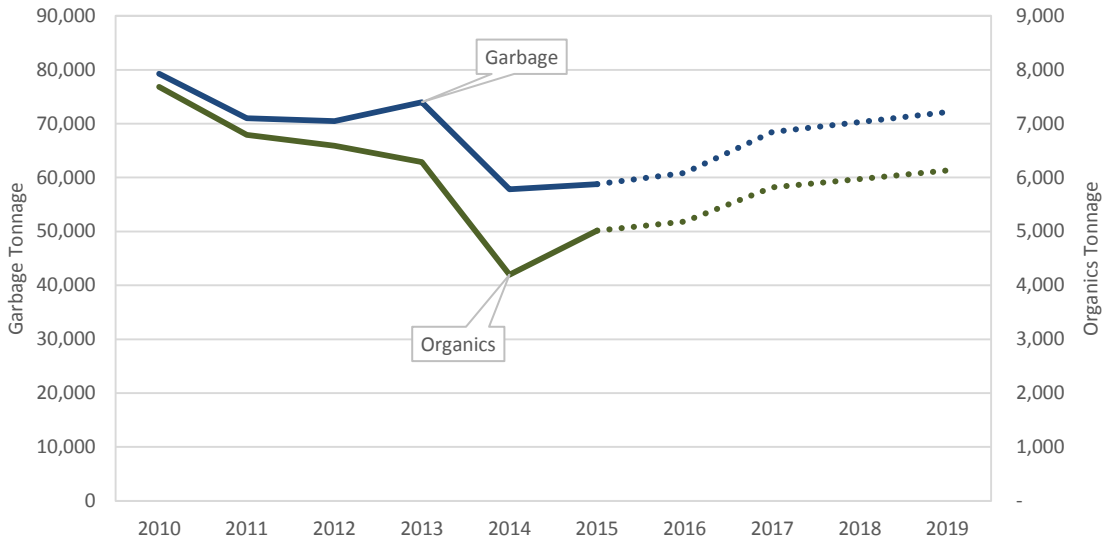
Weekly curbside volume has been declining as customers switch to smaller containers and single-family homes are replaced with multi-family development. These trends are expected to continue, especially as newer homes with smaller yards reduce the need for large yardwaste containers. On-site foodwaste demand has increased with the expansion of multi-family housing and the increased adoption of in-home diversion of foodwaste away from the garbage. A large increase in organics tonnage was seen following the implementation of the foodwaste ban in 2015, though there was not an accompanying increase in subscriptions or subscription revenue because foodwaste tends to be small and dense. Regardless, on-site volume is expected to double by 2019. Total organics tonnage is expected to increase 6.3 percent over the rate period.

5.6. Self-Haul

Self-Haul demand is measured in tonnage. Customers at transfer stations pay $145 per ton for garbage and $110 for organics. There is 0.20 ton minimum charge. Trucks visiting the transfer station are weighed and charged for their tonnage. Passenger cars are automatically charged the 0.20 ton minimum as a flat rate regardless of their actual weight. SPU has no plans to change any of these rates.

With temporary closure of the North Transfer Station in 2013, self-haul tonnage declined as customers postponed trips, conserved, or visited King County's transfer station in Shoreline instead. SPU is projecting a slow return of these customers when the new North Transfer Station opens later in 2016. See Figure 5-7.

Figure 5-10: Historic and Projected Self-Haul Tonnage



6. RATE DESIGN

Rate design is the last step in the rate-setting process in which the structure and level of the rates for each of the different services and service levels is determined.

Rate design is the point at which non-cost considerations such as rate gradualism, encouraging waste reduction, low-income rate assistance, and other policy issues are factored into the rates. In some cases these considerations result in deviations from setting rates at their cost of service.

6.1. 2017-2019 Rate Design Strategy

There have been no changes to rate design. This rate study proposes equal increases across all rates of 7.2 percent on April 1, 2017; 1.9 percent on April 1, 2018; and 4.0 percent on April 1, 2019. The following rates would remain unchanged throughout the proposed rate period:

- Transfer Stations: All rates at SPU transfer stations.
- Zero Can/Vacancy rate: The rate paid for vacant units with no service, and a small number of legacy customers with no garbage service
- Bulky Item Pickups: $30 charge for appliance pickups, $20 charge for electronics, and an $8 additional fee for items with CFCs.
- New Account Charge: $10 fee assessed on new accounts.

6.2. Residential Curbside (Single-Family) Garbage Rates

The rates charged by SPU for residential garbage can service vary with the garbage service levels to which the customer subscribes. Currently, SPU's variable can rates are structured so that customers' bill increases with the amount of garbage service to which they subscribe. Both single-family and multi-family dwellings can subscribe to variable can service though this service is sometimes synonymous with single-family, while on-site service (See Section 5.3) is synonymous with multi-family.

In addition to covering the cost of garbage collection, transfer, and disposal, residential can rates cover recycling collection and processing costs, part of compost collection and processing costs, and low income rate assistance. Can rates are shown in Table 6-1. Increasing rates for larger cans provide important price signals to encourage customers to recycle, reduce waste and minimize their can size. A typical single-family customer is reported as a 32 gallon garbage can (and a 96 gallon yardwaste cart).

Table 6-1: Residential Curbside (Single-Family) Rates

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Extras	10.60	11.35	11.55	12.00
Garbage Can/Cart Size				
12 Gallon (Micro)	21.30	22.85	23.30	24.25
20 Gallon (Mini)	26.10	28.00	28.55	29.70
32 Gallon (Standard)	34.00	36.45	37.15	38.65
64 Gallon	68.00	72.90	74.30	77.25
96 Gallon	102.00	109.35	111.45	115.90

6.3. Residential On-Site (Multi-Family) Garbage Rates

Residential detachable container service is available to apartment buildings with five or more residential units. Detachable rates reflect SPU's contract payments structure and include a flat monthly account fee, a trip rate charged for each container pick-up, and a volume rate (a trip rate that varies with container size):

*Monthly Rate = Pickups per Month * (Trip Rate + Volume Rate * Container Size)*

Dumpster rate components are designed to further encourage dumpster customers to recycle, reduce waste and minimize the number of collections per week and the number of containers. Proposed rates are below:

Table 6-2: Residential On-Site (Multi-Family) Rates

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Monthly Account Fee	37.40	40.10	40.85	42.50
Detach Rate Components				
Pickup Rate	28.05	30.05	30.60	31.80
Uncompacted Volume Rate	21.55	23.10	23.55	24.50
Compacted Volume Rate	43.80	46.95	47.85	49.75

Compacted rates are higher than un-compacted rates because a compacted container can hold up to five times the garbage of an un-compacted container. Based on SPU data, compacted containers weigh 2.03 times regular containers, on average. Therefore, the volume rate for compacted dumpsters is charged at 2.03 times that of uncompacted container rates.

6.4. Commercial Rates

Commercial rates include container and drop box service for both garbage and organics. Individual rate components may vary from what allocated costs dictate in an effort to further encourage dumpster customers to recycle, reduce waste and minimize the number of collections and containers. Commercial customer rate changes are identical to those for residential customers.

Can

Can service rates are shown in Table 6-3 for weekly pickup, though customers may subscribe to any frequency of pickup which is logistically feasible.

Table 6-3: Commercial Can Rates

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
On-Site Cans (Weekly Pickup)				
20 Gallon	31.61	33.99	34.64	35.94
32 Gallon	46.33	49.58	50.44	52.39

64 Gallon	90.28	96.78	98.51	102.40
96 Gallon	105.87	113.45	115.61	120.16

Detach (Dumpsters)

Detach services include uncompacted and compacted service. The contents of the container are tipped into the collection vehicle and customers are charged for each tip (pick up), regardless of the amount of waste within the container. The formula for commercial detachable rates is the same as for residential customers:

*Monthly Rate=Trip Rate * Pickups per Month + Volume Rate * (Pickups Per Month * Container Size)*

Table 6-4: Commercial Detach Rates

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Monthly Account Fee	25.20	27.00	27.50	28.60
Detach Rates				
Pickup Rate	16.40	17.60	17.95	18.65
Uncompacted Volume Rate	27.75	29.75	30.30	31.50
Compacted Volume Rate	56.35	60.40	61.55	64.00

Drop Box

Drop box service customers are delivered a roll-off container that is then picked up and transferred for disposal through one of the transfer stations. Customers are charged for the delivery of the container, the pick-up of the container, a rental/account fee, and a per ton (disposal) fee for its content. The disposal fee is intended to cover SPU's cost of transfer and disposal, taxes on the tons disposed, and a portion of SPU's administrative costs. Proposed drop box fees can be found in Table 6-5.

Table 6-5: Dropbox Detach Rates

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Monthly Account Fee	107.75	115.50	117.70	122.40
Pickup Rate	207.95	222.90	227.15	236.25
Tonnage Rate	177.40	190.15	193.75	201.50

6.5. Organics Rates

Organics service is divided into curbside and on-site rates. Curbside rates are generally single-family yardwaste customers, on-site rates are multi-family and commercial foodwaste customers. On-site foodwaste rates are based on commercial garbage can rates, but a 32 percent discount is offered for organics. Detach is also available at the same pickup and volume rate as detach commercial garbage, but again with a 32 percent discount.

Table 6-6: Organics Rates

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Curbside Yardwaste Weekly (Single-Family)				
20 Gallon (Mini)	5.65	6.05	6.15	6.40
32 Gallon	8.50	9.10	9.25	9.60
96 Gallon (Standard)	10.85	11.65	11.85	12.30
On-Site Foodwaste Cans (Multi-Family, Commercial)				
32 Gallon	31.51	33.71	34.30	35.63
64 Gallon	61.39	65.81	66.99	69.64
96 Gallon	71.99	77.14	78.62	81.71

6.6. Transfer Station Rates

SPU is not proposing any changes to rates at transfer stations at this time.

Table 6-7: Transfer Station Rates

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Garbage				
Minimum	30.00	30.00	30.00	30.00
Per Ton	145.00	145.00	145.00	145.00
Organics				
Minimum	20.00	20.00	20.00	20.00
Per Ton	110.00	110.00	110.00	110.00

6.7. Other Rates

Other rates include ancillary charges including cleaning, locking and unlocking, and secured building entry fees, among others. This category also includes rate which only apply to specific customers such as railhead disposal fees or CAP.

All other rates will increase the same as other rates. Ancillary charges are roughly 3.6 percent of residential garbage revenue and 1.2 percent of commercial revenue, or about $1.8 million in 2015. A full list of ancillary rates is located in Appendix E Rate Tables.

Railhead Disposal (Argo Direct) Fee

Non-contract commercial waste is brought by private transfer stations to the railhead in south Seattle, where it is placed on a train and taken to the landfill in Arlington, Oregon. Railhead tonnage is not a significant source of revenue and makes up less than one percent of SPU's total tonnage. There is a 25-ton minimum charge.

Table 6-8: Railhead Disposal (Argo Direct) Fee

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Railhead Rate per Ton	113.40	121.55	123.85	128.80
Minimum	2,835.00	3,038.75	3,096.25	3,220.00

Clear Alley Program (CAP) Bag Rates

Starting in 2009, residential and commercial customers located within areas designated by SPU, and whose containers were located in the right-of-way, were required to subscribe to a pre-paid bag service in lieu of container service. Rates for the service are designed so that customers pay an equivalent bill as detach customers on a volume basis.

Table 6-9: Clear Alley Program (CAP) Bag Rates

	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Garbage Bag Size				
15 Gallon	4.50	4.80	4.90	5.10
30 Gallon	6.40	6.85	7.00	7.30
Organics Bag Size				
15 Gallon	3.05	3.25	3.30	3.45
30 Gallon	4.35	4.65	4.75	4.95

7. UTILITY DISCOUNT PROGRAM

Qualified low-income customers receive a 50 percent discount on their solid waste bill or a fixed credit on their SCL bill (if they do not receive an SPU bill directly). For can customers the fixed credit is equal to 50 percent of the typical solid waste customer's bill (i.e., 50 percent of the single can rate plus food and yard waste. For apartment dwellers the fixed credit is equal to 50 percent of the average dumpster bill per household). This approach is consistent with the other City utilities.

There is no discount on extra garbage or food and yard waste charges for qualified low-income customers. Extra garbage or food and yard waste is billed at full rates. Low income rate credits can be found in Table 7-1.

Table 7-1: Proposed UDP Rates and Credits

Customer Type	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
Seattly Public Utilities Discounts				
SPU Customer Discount	50% Discount	50% Discount	50% Discount	50% Discount
Seattle City Light Credits				
Multi-Family Can Customer	17.00	18.20	18.55	19.30
Multi-Family Detach Customer	13.90	14.90	15.20	15.80
Organics	5.45	5.85	5.95	6.20

SPU is financially anticipating a large expansion of this program and the inclusion of automatic enrollment of certain low income households. The program, with the proposed rates, is expected to expand from $2.8 million in 2016 to $4.2 million in 2019.

Utility Low Income Emergency Assistance Program

The Emergency Assistance Program offers eligible low-income customers facing shut off due to delinquent bills an emergency credit of 50 percent off their past-due combined bill, up to a maximum credit of $371 (in 2016) for wastewater, water, and solid waste combined. They are eligible to receive this credit once per calendar year or twice per calendar year if children under the age of 18 live in the household. In 2012 the eligibility requirements were changed from 120 percent of the federal poverty level to 70 percent of state median income leading to increased usage of this service. Annual solid waste charges to this program do not exceed $100,000 and are not a significant expense to the SWF.

APPENDIX A STATEMENT OF OPERATING RESULTS

The Statement of Operating Results shows all components of the debt service coverage calculations. It does not display non-cash expenses.

Statement of Operating Results ($ Millions)

	2015 Actual	2016 Projected	2017 Proposed	2018 Proposed	2019 Proposed	2020 Estimated
Operating Revenue						
Direct Service	112.7	118.6	125.6	129.9	134.3	138.2
Commercial	54.0	55.2	58.6	60.2	62.1	63.3
Other	7.6	7.7	8.7	8.9	9.2	9.2
RSF Withdrawals (Deposits)	(2.5)	(0.9)	-	-	4.5	-
Total Operating Revenue	174.8	187.8	202.0	208.2	219.4	220.2
Operating Expenses						
Contracts	100.0	105.9	111.0	114.8	118.7	122.8
Branch O&M	39.7	37.0	40.5	41.4	43.5	44.9
Taxes	20.6	21.9	26.1	27.5	28.2	28.6
Depreciation	9.4	11.2	13.3	13.5	14.1	13.8
Total Operating Expenses	169.7	176.0	190.8	197.3	204.5	210.2
Net Operating Income	5.0	11.7	11.2	11.0	14.9	10.1
Other Income (Expenses)						
Investment, Sales, and Other	0.9	0.1	0.1	(0.1)	(0.2)	(0.3)
Interest Expense	(5.1)	(7.9)	(8.5)	(8.1)	(7.8)	(7.4)
Total Other Income (Expenses)	(4.2)	(7.7)	(8.4)	(8.2)	(8.0)	(7.7)
Contributions and Grants	0.6	0.8	0.8	0.8	0.8	0.8
Net Income (Loss)	1.4	4.8	3.5	3.5	7.7	3.2
Revenue Available for Debt Service						
With Credit for Taxes	43.3	42.1	47.6	48.8	53.7	48.9
Without Credit for Taxes	25.4	23.2	24.7	24.5	28.9	23.7
Annual Debt Service	12.5	15.4	16.3	16.2	16.2	15.8
Debt Service Coverage						
With Credit for Taxes (Target = 1.5)	3.5	2.7	2.9	3.0	3.3	3.1
Without Credit for Taxes (Target = 1.7)	2.0	1.5	1.5	1.5	1.8	1.5

APPENDIX B STATEMENT OF CASH FLOW

	2015 Actual	2016 Projected	2017 Proposed	2018 Proposed	2019 Proposed	2020 Estimated
Starting Balance	**32.4**	**42.2**	**42.4**	**43.5**	**22.8**	**23.6**
Additions to Cash						
Operating Revenues	178.2	187.8	202.0	208.2	219.4	220.2
Non-Operating Revenues	6.7	6.6	6.8	6.8	6.9	7.0
Grants	0.6	0.8	0.8	0.8	0.8	0.8
Total Additions to Cash	**185.5**	**195.1**	**209.5**	**215.8**	**227.0**	**228.0**
Deductions from Cash						
Contracts	102.0	107.9	113.0	116.8	120.7	124.8
Branch O&M	35.2	41.3	45.0	46.2	48.5	50.0
Cash Contributions to CIP	5.4	8.3	8.0	29.7	12.6	4.7
Taxes	20.6	21.9	26.1	27.5	28.2	28.6
Debt Service	12.5	15.4	16.3	16.2	16.2	15.8
Total Deductions from Cash	**175.7**	**195.0**	**208.4**	**236.5**	**226.2**	**224.0**
Ending Cash Balance	**42.2**	**42.4**	**43.5**	**22.8**	**23.6**	**27.5**

APPENDIX C COST ALLOCATION

This appendix contains a full list of cost centers, budgeted costs for 2017, and an allocation to general customer classes. Some totals may not add due to rounding; table is in thousands of dollars.

Cost Center	Allocation Method	Residential	Commercial	Transfer Station	Total
SPU Branch O&M		**23%**	**26%**	**45%**	**25%**
Billing	Customer Counts and Trips	3,804	-	95	3,899
Environmental - Landfills	Tonnage	556	668	291	1,514
Environmental - Waste Reduction (All)	Tonnage	203	244	107	555
Environmental - Waste Reduction (Residential)	Tonnage	735	-	-	735
G&A - Communications	Customers	447	20	-	467
G&A - Contract Management	Management Estimates	2,835	945	-	3,780
Transfer Stations - Hauling (All)	Tonnage	160	110	37	307
Transfer Stations - Hauling (Garbage)	Tonnage	534	641	280	1,455
Transfer Stations - Hauling (Organics)	Tonnage	(186)	(12)	(10)	(207)
Transfer Stations - Hauling (Recycling)	Tonnage	114	-	-	114
Transfer Stations - Material Loading	Tonnage	360	351	117	828
Transfer Stations - Operations	Tonnage	3,047	2,095	702	5,844
Clean City	Tonnage	2,418	2,905	1,268	6,592
G&A – General, HR	Proportional Assignment	15,434	4,732	916	21,083
Contract Expense		**63%**	**48%**	**34%**	**58%**
N050102 Curbside Garbage	Direct Assignment	20,154	-	-	20,154
N050103 Curbside Recycling	Direct Assignment	9,747	-	-	9,747
N050104 Multi-family Recycling	Direct Assignment	7,325	-	-	7,325
N050105 Curbside Organics	Direct Assignment	16,518	91	-	16,609
N050106 COM&MF Garbage Collection	Ad-hoc	10,816	15,380	-	26,195
N050501/07 Garbage Disposal & Transfer	Tonnage	5,058	6,076	2,652	13,786
N050107 Recycling	Tonnage	8,106	-	-	8,106
N050107 Compost	Tonnage	4,410	277	226	4,913
N050201 LHWMP	Volume	2,731	1,431	-	4,161
Taxes		**12%**	**16%**	**11%**	**13%**
City Utility Tax	Ad-hoc	11,873	5,163	-	17,036
City Tonnage Tax	Tonnage	1,558	1,871	817	4,246
State B&O Tax	Revenue	2,096	911	143	3,151
CIP, Financial Policies, and Non-Rates Revenues		**3%**	**10%**	**9%**	**5%**
	Ad-hoc	3,889	4,762	750	9,400
Solid Waste Fund Total	Total in Dollars	134,740	48,661	8,392	191,793
	Class Share of SWF Total	**70%**	**26%**	**4%**	**100%**

APPENDIX D DEMAND ANALYSIS

The following is an overview of the demand projection for the major demand categories. Actuals may not match those published elsewhere by SPU.

Customer Class	Rate	2015 Actual	2016 Projected	2017 Proposed	2018 Proposed	2019 Proposed	2020 Estimated
Residential Curbside Can Pickups	0 Can	2,114	2,177	2,007	1,911	1,815	1,911
	12 Gallon	19,892	20,836	21,632	22,448	23,264	22,448
	20 Gallon	46,942	47,854	48,666	49,534	50,403	49,534
	32 Gallon	86,675	85,097	82,935	80,866	78,797	80,866
	64 Gallon	7,081	7,265	7,452	7,632	7,811	7,632
	96 Gallon	2,008	2,158	2,291	2,432	2,573	2,432
	Total	**164,713**	**165,388**	**164,982**	**164,823**	**164,664**	**164,823**
Residential On-Site Detach	Accounts	5,261	5,280	5,277	5,290	5,303	5,290
	Pickups	37,516	37,700	37,744	37,908	38,073	37,908
	Volume (Cubic Yards)	81,673	82,610	83,397	84,435	85,473	84,435
Commercial Garbage	Accounts	8,145	8,064	8,030	7,996	7,961	7,996
	Pickups	72,984	71,251	70,748	70,307	69,866	70,307
	Volume (Cubic Yards)	100,070	99,021	97,543	96,822	96,063	96,822
	Dropbox Tonnage	4,147	4,207	3,966	3,915	3,839	3,915
Organics Yardwaste Pickups	13 Gallon	32,391	32,797	32,973	33,149	33,326	33,149
	32 Gallon	17,538	19,199	20,856	22,512	24,169	22,512
	96 Gallon	96,094	95,642	94,725	93,808	92,891	93,808
	Total	**146,023**	**147,637**	**148,554**	**149,470**	**150,386**	**149,470**
Organics Foodwaste Pickups	Pickups	1,939	2,092	2,229	2,365	2,502	2,365
	Volume (Cubic Yards)	7,056	8,002	8,923	9,844	10,765	9,844
Transfer Station Tonnage	Garbage	58,780	60,848	68,467	70,317	72,168	70,317
	Organics	5,015	5,181	5,818	5,976	6,133	5,976
System-wide Tonnage	Garbage	311,924	312,583	321,791	323,373	326,338	323,373
	Organics	93,380	95,942	98,566	100,284	102,019	103,695
	Recycling	85,943	87,109	88,272	89,435	90,598	91,763

APPENDIX E RATE TABLES

Most solid waste rates are rounded to the nearest nickel.

Customer	Rate	2016 Adopted	2017 Proposed	2018 Proposed	2019 Proposed
April 1 Rate Increase		3.4%	7.2%	1.9%	4.0%
Residential Curbside Can	0 Can	6.85	6.85	6.85	6.85
	12 Gallon	21.30	22.85	23.30	24.25
	20 Gallon	26.10	28.00	28.55	29.70
	32 Gallon	34.00	36.45	37.15	38.65
	64 Gallon	68.00	72.90	74.30	77.25
	96 Gallon	102.00	109.35	111.45	115.90
	Extras	10.60	11.35	11.55	12.00
Residential On-Site Detach	Account Fee	37.40	40.10	40.85	42.50
	Pickup Charge	28.05	30.05	30.60	31.80
	Uncompacted Volume	21.55	23.10	23.55	24.50
	Compacted Volume	43.80	46.95	47.85	49.75
Yardwaste	13 Gallon	5.65	6.05	6.15	6.40
	32 Gallon	8.50	9.10	9.25	9.60
	96 Gallon	10.85	11.65	11.85	12.30
	Extras	5.40	5.80	5.90	6.15
Foodwaste	32 Gallon	31.51	33.71	34.30	35.63
	64 Gallon	61.39	65.81	66.99	69.64
	96 Gallon	71.99	77.14	78.62	81.71
Commercial Cans	20 Gallon	31.61	33.99	34.64	35.94
	32 Gallon	46.33	49.58	50.44	52.39
	64 Gallon	90.28	96.78	98.51	102.40
	96 Gallon	105.87	113.45	115.61	120.16
Commercial Detach	Account Fee	25.20	27.00	27.50	28.60
	Pickup Rate	16.40	17.60	17.95	18.65
	Uncompacted Volume	27.75	29.75	30.30	31.50
	Compacted Volume	56.35	60.40	61.55	64.00
Commercial Dropbox	Account Fee	107.75	115.50	117.70	122.40
	Pickup Rate	207.95	222.90	227.15	236.25

	Tonnage Rate	177.40	190.15	193.75	201.50
Clear Alley Rates	15 Gallon Garbage Bag	4.50	4.80	4.90	5.10
	30 Gallon Garbage Bag	6.40	6.85	7.00	7.30
	15 Gallon Organics Bag	3.05	3.25	3.30	3.45
	30 Gallon Organics Bag	4.35	4.65	4.75	4.95
Ancillary Rates	Can/Cart Delivery	26.05	27.95	28.50	29.65
	Dumpster Delivery	31.40	33.65	34.30	35.65
	Small Roll-off Delivery	41.75	44.75	45.60	47.40
	Large Roll-off Delivery	65.30	70.00	71.35	74.20
	Can/Cart Rollout/Reposition	2.65	2.85	2.90	3.00
	Detach Rollout/Reposition	7.75	8.30	8.45	8.80
	Enter Secure Building	5.20	5.55	5.65	5.90
	Dumpster Cleaning	39.20	42.00	42.80	44.50
	Roll-off Cleaning	52.20	55.95	57.00	59.30
	Can/Cart Cleaning	10.45	11.20	11.40	11.85
	Connect/Disconnect	44.35	47.55	48.45	50.40
	Dry Run	91.35	97.95	99.80	103.80
	Truck, Hourly Special	235.00	251.90	256.70	266.95
	Swamper, Hourly Special	78.20	83.85	85.45	88.85
Misc., Bulky, Etc.	Garbage Curbside Extra	10.60	11.35	11.55	12.00
	Organics Curbside Extra	5.40	5.80	5.90	6.15
	Organics On-Site Extra	7.20	7.70	7.85	8.15
	CFCs Charge	8.00	8.00	8.00	8.00
	Electronics	20.00	20.00	20.00	20.00
	Bulky Item/Appliance	30.00	30.00	30.00	30.00
Transfer Station Rates	Garbage, per Ton	145.00	145.00	145.00	145.00
	Garbage, Minimum Charge	30.00	30.00	30.00	30.00
	Organics, per Ton	110.00	110.00	110.00	110.00
	Organics, Minimum Charge	20.00	20.00	20.00	20.00
	Vehicle Tires	13.00	13.00	13.00	13.00
	Large Appliances	30.00	30.00	30.00	30.00