

1512 Eureka Road, Suite 220, Roseville, CA 95661
Tel: 916-782-7821 | Fax: 916-782-7824

2600 Tenth Street, Suite 411, Berkeley, CA 94710
Tel: 510-647-9674

627 S. Highland Avenue, Suite 300, Los Angeles, CA 90036
Tel: 323-559-7470

To: Julia Dawson, San Francisco Department of Public Works

From: Garth Schultz, William Schoen, Emily Ginsburg, Rose Radford and David Pinter, R3 Consulting Group, Inc.

Date: April 18, 2017

Subject: Task Order #2 – Memorandum on Tasks 2.1 through 2.8

Attachments: Listed at end of Memorandum

Dear Julia Dawson,

R3 Consulting Group, Inc. (R3) is pleased to submit the following Memorandum detailing the findings and recommendations from our work reviewing Recology's Refuse Rate Application pursuant to Task Order #2 – Comprehensive Review of Final Rate Application and Technical Support. This Memorandum contains both high-level summaries and detailed analyses for the specific areas of interest identified by the City of San Francisco's Department of Public Works (Public Works). The areas of interest for the 2017 Final Rate Application submitted by Recology include the following:

- Task 2.1 Expense Analysis
- Task 2.2 Revenue Analysis
- Task 2.3 Corporate Allocations and Profit Analysis
- Task 2.4 Third Party Leases
- Task 2.5 Capital Cost Analysis
- Task 2.6 COLA Review
- Task 2.7 Rate Structure
- Task 2.8 Zero Waste Incentives

Each of these tasks is discussed in this Memorandum, with recommended adjustments to the 2017 Final Rate Application for staff consideration provided where appropriate. R3 appreciates the opportunity to be of service to Public Works; please contact me at gschultz@r3cgi.com or (510) 292-0853 if you have any questions related to this Memorandum.

Sincerely,

R3 CONSULTING GROUP


Garth Schultz | Principal

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1 Executive Summary

R3 Consulting Group, Inc. (R3) has been engaged by the San Francisco Public Works Department (Public Works) to complete Task Order #2, which included a comprehensive review of Recology's Final Rate Applications and participation and assistance to staff with Director's Hearings. Our work involved a detailed review of Recology's Final Rate Application for both Recology San Francisco (RSF) and Recology Sunset Scavenger and Recology Golden Gate (RSS/RGG), referenced jointly in this Memorandum as Recology, focusing on items of significance identified by Public Works and R3 staff.

1.1 Summary of Findings

To assist Public Works, R3 has evaluated figures presented in the 2017 Rate Application, checked mathematical formulas for accuracy and logical consistency, and verified information via extensive review of Recology's supporting documentation. In addition, multiple meetings and calls with Public Works, San Francisco Department of the Environment (SFE), and Recology were held throughout this process were to provide clarification and help focus efforts under Task Order #2. At Public Works' direction, R3 also conducted several independent analyses to further analyze and verify specific components of the rate application. Overall, R3 finds the 2017 Rate Application to be logical and consistent in the presentation of its data, accurate in its representation of historical data and assumptions made for projections reasonable. Recology's proposed changes for existing programs, and new programs and capital investments, are in line with the City's goals and needs. However, R3 is recommending several adjustments, and some additional suggestions, to further refine methodology and figures in the 2017 Rate Application.

1.2 Summary of Recommended Adjustments

- The escalation factor used to increase certain RY 16 and RY 17 expenses should be revised to 2.67% from the 3.00% (and in the case of Schedule M.2, 3.30%) factor used in the both Final Rate Application;¹
- Intercompany processing of compostables, brush, processed fines, sheetrock, wood and concrete and "out-of-county" (totaling \$14,181,155) should be removed from the RSF Operating Ratio Expenses – this results in a reduction in the Proposed Tipping Charge per Ton from \$186.15 to \$183.77 (based on the calculations in the Final Rate Application before "post-filing changes" issued by Recology);
- Changing the Proposed Tipping Charge per Ton from \$186.15 to \$183.77 in the RSS/RGG Final Rate Application results in a reduction in the Net Revenue Requirement from \$324,964,140 to \$323,372,208 – this results in a reduction in the proposed rate increase of 0.60%, from 22.96% to 22.36% (or 16.40% to 15.80% after rebates and reimbursements are applied, and based on the calculation in the Final Rate Application before "post-filing changes" issued by Recology); and
- Not accepting Recology's proposal to include pension costs as part of the fixed labor cost category in the COLA calculation in the future. Please see Section 7 of this Memorandum for recommended

¹ The use of a 3.30% escalation factor in Schedule M.2 has been confirmed as an error by Recology, and is noted as such in the Proposed Filing Changes to Final Application.

calculation mechanisms for the annual COLA adjustment, as well as calculations of escalation factors for use in future Rate Application processes.

1.3 Summary of Recommendations

- Despite a recent positive trend in worker safety metrics, the significant increase in Recology's workers' compensation costs since 2013 highlights the need for Recology's to continue to improve the safety of its workers.
- While we have not identified any issues with Recology's overall projected 2018 Pension levels and Health Insurance costs based on the supporting documentation provided, Recology did not meet the City's expectations in controlling these costs, which are significant, and should act to do so.
- Recology should provide the more information in support of its Rate Applications, specifically the information listed in Section 10 Recommendations for Enhanced Reporting. For example:
 - Recology should provide the City with updated Pension Funding Projections covering all Pension liabilities as part of all future Rate Applications. That data can serve as a basis for setting the interim year Pension COLA adjustments, rather than conducting annual actuarial projections.
 - Updated accounting of historical TIRR and DART Rates and Modification Factors. This should include similar data for the period covered by the prior Rate Application so that there is an extended historical record.
 - Supporting documents for the projected Workers Compensation Costs (e.g., third party projections).
 - Discussion of any changes to the methods used to allocate or otherwise project Worker Compensation expenses from those of the prior Rate Application. If there have been no changes positively indicate as such.
 - Supporting documentation for the projected Health Insurance expense (e.g., third party supporting documentation for Schedule G-3 Monthly Rates and other factors used to calculate projected costs).
 - Comparative Schedule D – Total Operating Expenses (Variance Analysis and Explanations for Significant Variances);
 - Explanations for all significant variances, with the impact of inflation or changes in other unit cost factors separately identified from the impact of changes in FTE employees, with applicable support as appropriate;
 - Financial statements should have supplemental schedules with Rate Application line item expenses and profit calculation per Rate Application calculation; and
 - Discussion of any changes to the:
 - 5-year variance (Actual to Projected);
 - 5-year Profit Analysis (as part of Rate Applications and Financial Statements);
 - Tonnage Variance; and
 - Migration Analysis.

2 Expense Analysis

2.1 Objective

Refresh the analysis of line item expenses in the Rate Applications for RSF and RSS/RGG. Prepare tables/graphs illustrating trends for major expense categories between RY2014 and projected RY2017. Highlight significant variances from year-to-year for historical expenses, as well as in the base year for Rate Application (RY2018), for major expense categories. Identify and review new expense items proposed for inclusion in rate base. Identify recommended adjustments to specific line item expenses. This task may include meetings with Recology to review documentation to support historical expenses, as well as formulas used to calculate base year values.

2.2 Methodology

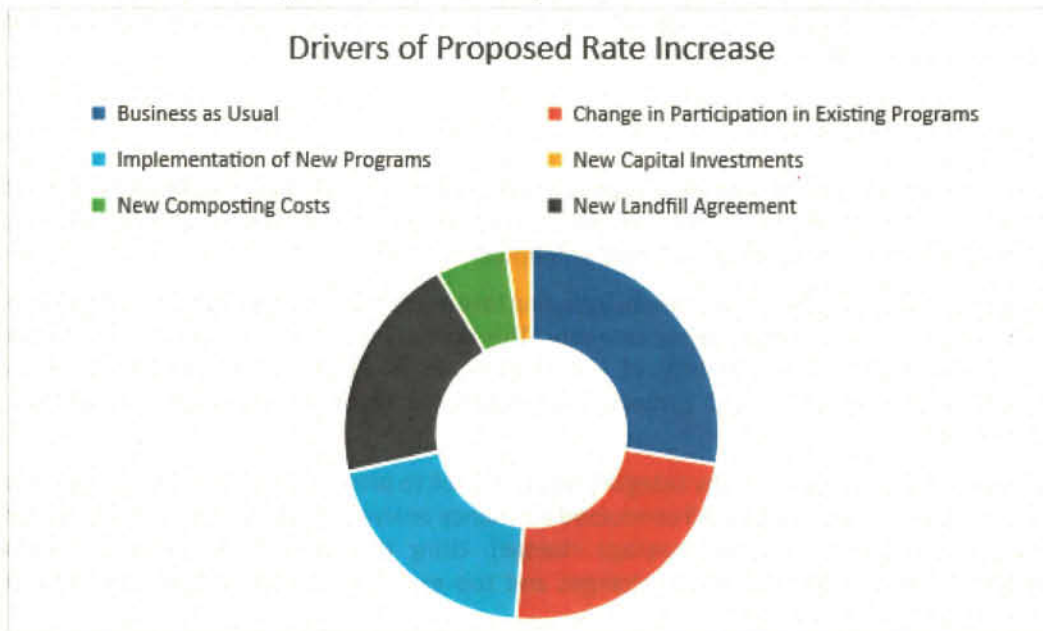
To verify historical and projected operating expenses included in the Final Rate Application for Recology San Francisco (RSF), and Recology Sunset Scavenger and Recology Golden Gate (RSS/RGG), collectively "Recology," R3 reviewed each expense category as follows:

- R3 reviewed the Final Rate Application, including rate model spreadsheets submitted by Recology, to analyze each operating expense category. This review included an assessment of Recology's logical consistency and accuracy of calculations, in addition to an evaluation of overall reasonableness of costs and projected increases based on R3's industry knowledge and experience;
- To assess change in expenses by category from RY 2014 to projected RY 2017, and from projected RY 2017 to projected RY 2018, R3 conducted a variance analysis (by dollar amount and percentage change, in addition to annual average change). Using this analysis, R3 identified operating expenses trends, large magnitude changes and top expense categories, and other changes of note;
- If insufficient support was provided in Recology's Narrative Summary and Summary of Assumptions to demonstrate the basis for historic and projected expenses, R3 requested a more detailed explanation and/or additional supporting documentation for review;
- Supporting documentation of dollar amounts, and corporate allocations of expenses, were reviewed and tied to the amounts shown in the Final Rate Application to further verify expenses;
- To obtain clarification on questions regarding expenses, R3 met with Recology on several occasions during March 2017. During these meetings, R3 discussed operating expense changes, went over the Requests for Information (RFI) (RFI's #1 through #6 included as Attachment A to this Memorandum) and supporting documentation, and walked through the rate model spreadsheet formulas with Recology staff;
- The status of RFI items and additional explanations for expense changes were, and are, followed up on via a series of check-in calls between R3 and Recology. To date, several such check-in calls have been conducted and a standing call time established going forward; and
- R3 has also met with San Francisco Department of Environment (SFE) staff for further clarification of programmatic changes reflected in the Final Rate Application, including head count and routing changes, in addition to coordination of Final Rate Application review/information requests.

2.3 Drivers of Proposed Rate Increase

To analyze the drivers of Recology’s proposed 22.96% rate increase, R3 assessed the relative magnitude of operating expense changes presented by Recology in the rate application and additional supporting documentation. This high-level assessment considers normal, expected changes to the cost of doing business (“business as usual”) in comparison to the impacts of operational changes from implementing new programs (e.g., Pier 96, new 16-gallon black/64-gallon blue roll-out, etc.), growth of existing programs in response to increased participation, the cost of new capital infrastructure (West Wing), and costs relating to the new landfill contract.

Figure 1: Drivers of Proposed 22.96% Rate Increase



The table (below) and figure (above) show the major contributors to the rate increase, totaling to \$60,683,521 for Recology’s increased revenue requirement. Shown, the largest driver is an increase in what could be considered the regular costs to doing business, followed by the maintenance and expansion of existing programs in response to greater participation, and the implementation of new programs in support of the City’s goal to achieve zero waste. Costs related to the new landfill agreement is also a substantial contributor, and finally the increased costs for the composting operation and capital investment in the West Wing are also large enough to be considered as main drivers.

Table 1: Drivers of Proposed Rate Increase

Type of Change	\$	%
Business as Usual	\$ 16,838,070	6.37%
Change in Participation in Existing Programs	\$ 14,331,386	5.42%
Implementation of New Programs	\$ 12,231,003	4.63%
New Capital Investments	\$ 1,302,460	0.49%
New Composting Costs	\$ 3,766,309	1.43%
New Landfill Agreement	\$ 12,214,293	4.62%
	\$ 60,683,521	22.96%

For these elements the approximate magnitude, not exact dollar values, is what should be taken away from this analysis. This is in large part due to the timing differences in the items being considered, making a high-level view of operating expenses a more suitable means for assessing relative impact.

Another way to look at the rate increase drivers is collection (Recology San Francisco) vs. post collection (Recology Sunset Scavenger/Recology Golden Gate). The relative amount each contributes to driving the proposed rate increase is approximately equal, with post collection representing just over half the estimated amount of additional revenue needed. See table and figure below.

Figure 2: Estimated Allocation of Proposed Rate Increase between Collection and Post Collection Operations

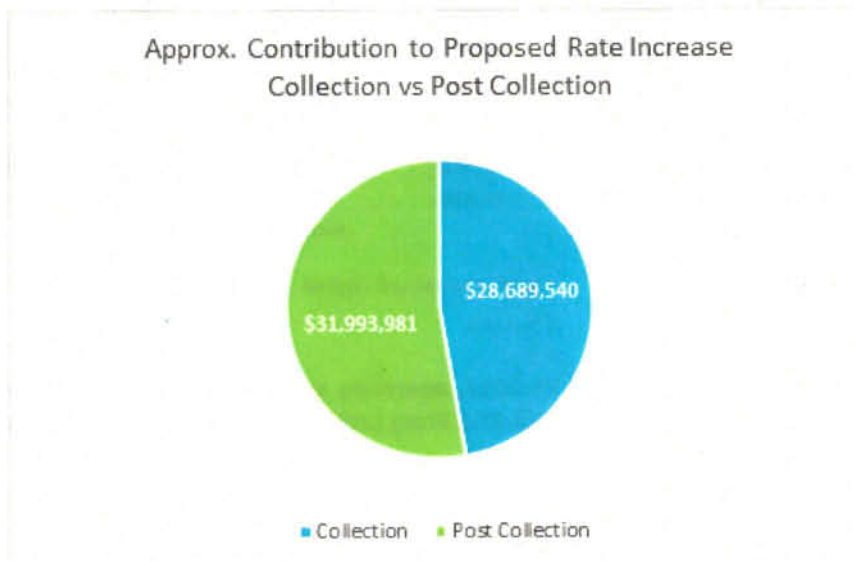


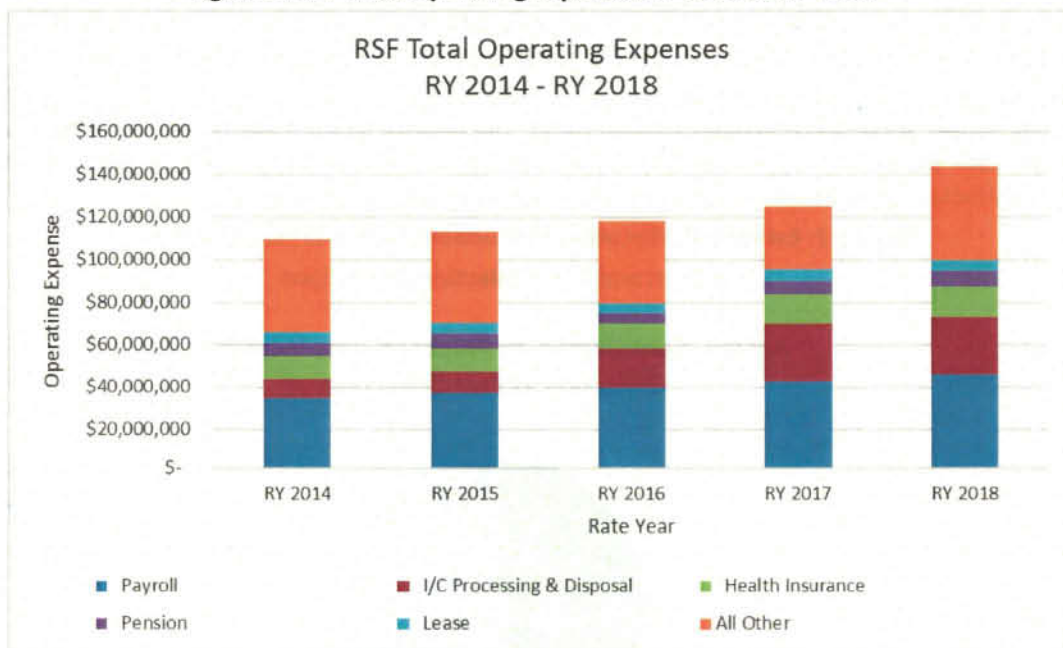
Table 2: Collection vs. Post Collection

Collection vs Post Collection Split	\$	%
Collection	\$ 28,689,540	10.86%
Post Collection	\$ 31,993,981	12.11%

2.4 Analysis of Recology San Francisco (RSF) Expenses

Overall, RSF estimates its total operating expenses will grow by a total of ~\$34.7 million (31.7%) from RY 2014 to projected RY 2018, representing an average annual increase of approximately \$8.7 million (7.9%) over that period. Figure 1, below, shows RSF’s total operating expenses (historical and projected) and the amounts attributable to operating expenses in the 2017 Final Rate Application. As shown, the most significant, and growing, operating costs are payroll, intercompany processing and disposal, and health insurance, in that order.

Figure 3: RSF Total Operating Expenses RY 2014 to RY 2018



In the range of RY 2014 to projected RY 2017, operating expenses grow by ~\$15.8 million (14.4%), an average annual increase of ~\$5.3 million (4.8%). From projected RY 2017 to projected RY 2018, operating expenses climb another ~\$18.9 million (15.1%).

The following sections detail the top five (5) expense categories contributing to RSF’s operating cost. Combined, these expense categories account for over three quarters (~76%) of RSF’s total projected operating budget in RY 2017, and approximately 70% of the projected operating budget in RY 2018.

2.4.1 Payroll

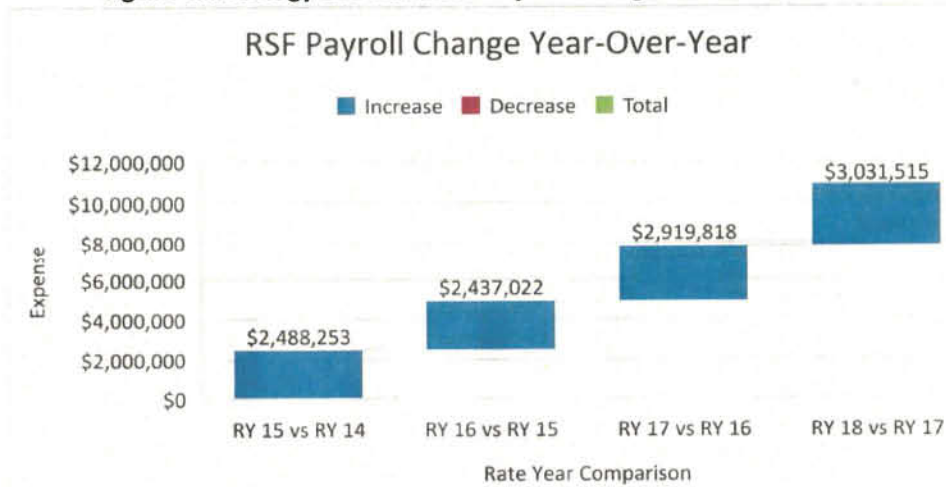
Payroll is the single largest operating expense category, accounting for approximately 32-34% of the total operating expenses from RY 2014 to projected RY 2018. Over the period, growth is ~\$2.4 – \$3 million year over year, or ~7% per year.

Table 3: Recology San Francisco Payroll Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
Payroll	\$34,864,213	\$37,352,466	\$39,789,488	\$42,709,306	\$45,740,821
Total Operating Expenses	\$109,272,348	\$112,855,626	\$118,392,078	\$125,056,693	\$143,945,111
% of Total Operating Expenses	32%	33%	34%	34%	32%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
	\$ Change	\$2,488,253	\$2,437,022	\$2,919,818	\$3,031,515
	% Change	7.1%	6.5%	7.3%	7.1%

Between RY 2014 and RY 2017 Payroll costs have increased a total of ~\$7.8 million (22.5%), an annual average change of ~\$2.6 million (7.5%). From RY 2017 to RY 2018, Payroll costs are projected to rise ~\$3 million (7.1%). See Figure 4, below, which shows the year over year change in Payroll costs for the period under review.

Figure 4: Recology San Francisco Payroll Change Year over Year



Findings

Payroll expenses are based on the number of employees and hours worked, and account for staff benefits (sick, vacation, and holiday time), overtime, holiday and weekend pay. Actual and projected head counts and payroll expenses are provided in total and by labor category in the Final Rate Application, Schedule G.1. R3 consulted with SFE on head count and program needs, and SFE confirmed that the increases in head count accurately reflect program needs.

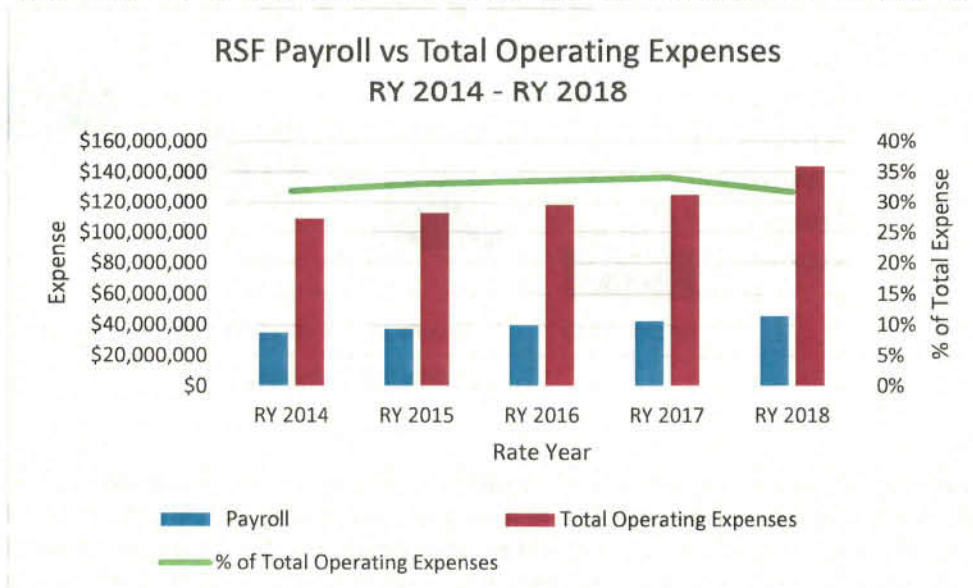
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- Increases in Payroll expense are driven by operational changes and the corresponding increases in head count by operating unit:
 - Hauling operation head count will increase by 5.88 FTE in RY 2017 to accommodate the change in landfill facility, as Hay Road Landfill is a further distance than Altamont Landfill. Most of the projected increase falls into the “Driver/Helper” labor category;
 - Recycle Central will increase its head count by approximately 3 FTE in RY 2017, and an additional 5 FTE in RY 2018, to allow for the processing of additional material types accepted through the expanded recycling program, and increased volume in collected recyclables overall;
 - Transfer station staff will increase approximately 3 FTE in RY 2017, and an additional 3 FTE in 2018. During the March 15th, 2017 Director’s Hearing, Recology stated the increase in transfer station staff is mainly due to increased tonnage received through the Public Reuse and Recycling Area (PRRA);
 - Hazardous Waste will have two new positions added in RY 2018: one driver to handle an anticipated increase in HHW pickup program participation, and one to provide backup service and/or HHW staffing schedule support; and
 - Other operating units also have projected increases in head count, but to a lesser degree (< 1 FTE), or anticipate some staffing reductions.
- It should be noted that other Payroll related expenses are also on the rise: combined, Health Insurance, Payroll Taxes, Workers Comp, and Pension grow approximately 10% from RY 2016 to RY 2017, and ~10% in 2018;
- Anticipated changes in payroll expense are, overall, within the historical range regarding annual growth. See Figure 5, below.

Figure 5: Recology San Francisco Payroll and Total Operating Expense Comparison



2.4.2 Intercompany Processing and Disposal

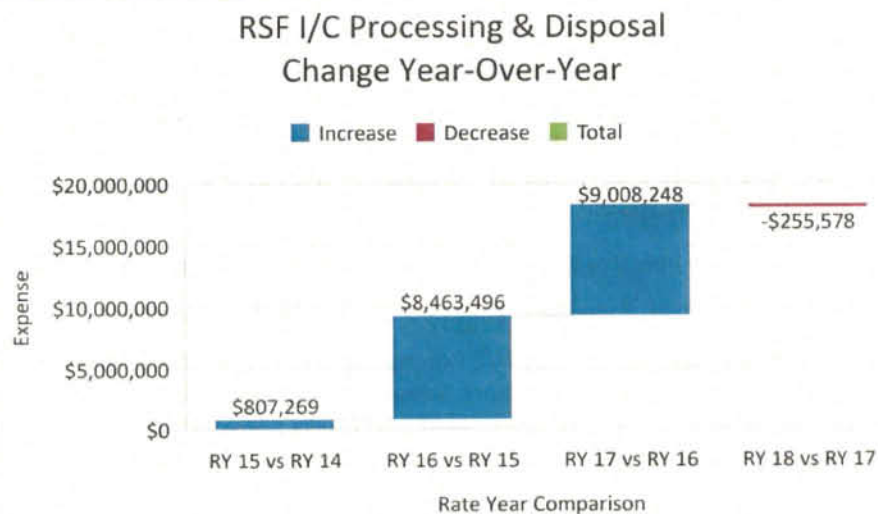
Intercompany (I/C) Processing and Disposal costs have increased to reflect the rising cost per ton disposed and per ton composted. As a percentage of total operating expenses, I/C Processing and Disposal was 9% in RY 2015, climbing to 16% in RY 2016, and peaking at 22% in RY 2017 before dropping to 19% in RY 2018. As shown in Table 4, below, these costs are increasing while still exhibiting some volatility.

Table 4: Recology San Francisco I/C Processing and Disposal Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
I/C Processing & Disposal	\$9,097,351	\$9,904,619	\$18,368,115	\$27,376,363	\$27,120,785
Total Operating Expenses	\$109,272,348	\$112,855,626	\$118,392,078	\$125,056,693	\$143,945,111
% of Total Operating Expenses	8%	9%	16%	22%	19%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
	\$ Change	\$807,269	\$8,463,496	\$9,008,248	-\$255,578
	% Change	8.9%	85.4%	49.0%	-0.9%

From RY 2014 to RY 2017 the cost of I/C Processing & Disposal has increased approximately \$18.3 million (~201%), and annual average change of ~\$6.1 million (67%). From RY 2017 to RY 2018 the cost is projected to decrease approximately \$255,000 (~-1%), reflecting the projected decrease in disposal tons. See Figure 6, below, which shows the year over year change in these costs for the period under review. Figure 7 compares this cost category to the total operating expenses.

Figure 6: Recology San Francisco I/C Processing & Disposal Change Year over Year



Findings:

I/C Processing & Disposal costs are calculated for each material stream by multiplying the tonnage by the per ton cost to process or dispose of that material. Tonnages are projected based on historical trends, and per ton rates are based on the facility fees (which are escalated for inflation).

Landfill

- The change in landfill facility from Altamont to Hay Road has driven disposal costs higher than historical costs for this expense category;
 - The disposal fee per ton has increased substantially, from \$12.16 at Altamont to \$31.22 at Hay Road in RY 2016. The Hay Road disposal fee per ton is escalated by about 3% in RY 2017, and RY 2018.
 - R3 understands that there were major decision points regarding landfill facility use we are certain the City and Recology have discussed at length. This item was addressed by Mark Arsenault in his testimony during the March 8th Director's Hearing, in which he cited reasons Recology won the bid to provide landfill service to the City (e.g. most competitively priced proposal, etc.).
- Disposal tons have grown by 8.2% from RY 2014 to RY 2017. RSF projects a 4.4% decrease from RY 2017 to RY 2018; and
- Note that disposal tons include residual from recycling processing operations.

Compost

- I/C processing expenses are projected to increase for compostable materials due to increased composting facility costs (i.e., tighter regulations on composting operations have brought about higher environmental compliance fees at Recology's composting facilities, Jepson Prairie Organics and Blossom Valley Organics, resulting in higher tip fees). The rate per ton for compostable materials (mixed organics) is \$75.45 for RY 2017 and \$43.77 for green waste;
- While I/C Disposal is not included in Recology's calculation of OR, I/C Processing (i.e., composting operations and other intercompany processing services) is included. When asked for details, Recology supported I/C Processing's inclusion in the OR by explaining that, unlike disposal, composting represents a larger risk due to the following:
 - Recology must keep capacity available as the City's volume of collected compostable materials increases;
 - The organics industry is less mature and represents greater uncertainty; and
 - Tightening environmental regulations contributes to greater risk.

For these reasons, Recology includes I/C Processing in the OR so that if costs increase due to these greater risk factors the expense is more adequately covered via the yearly adjustments. This is preferred to the alternative: Recology could potentially see a substantial increase in composting operation expenses and need to wait for the next Final Rate Application process to recoup.

R3 believes that I/C Processing should be excluded from OR based on Recology's testimony that Recology makes a profit on intercompany processing services; to eliminate "double profit" on I/C Processing charges, R3 recommends that these expenses should be eliminated from the OR calculation;

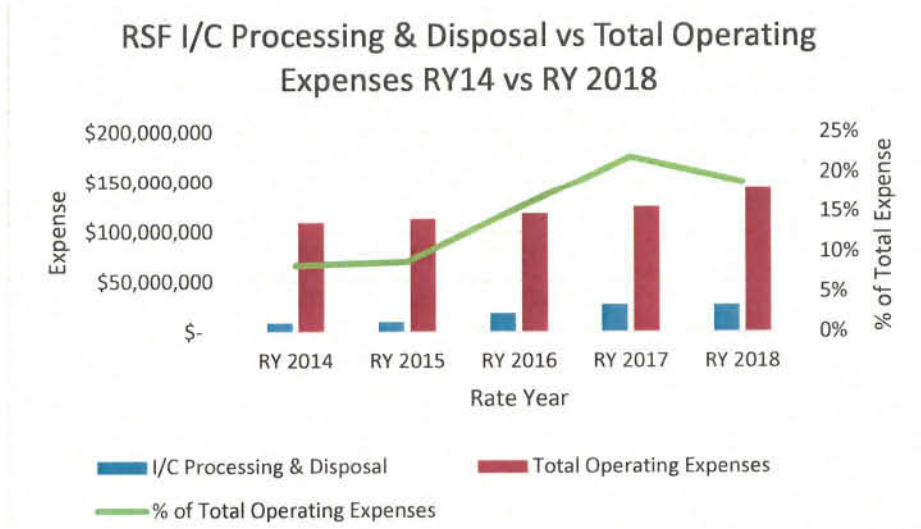
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- Compostable material tonnages increased ~7% from RY 2014 to RY 2017, and are projected to increase ~0.60% in RY 2018. Brush tonnages decreased ~15% from RY 2014 to RY 2017, and are projected to decrease ~0.40% in RY 2018.

C&D

- The cost to recycle construction and demolitions (C&D) materials (sheet rock, wood, concrete and processed fines,) is increasing in San Francisco, and elsewhere in the Bay Area, due to the decline in recycling markets; and
- Recovered construction and demolition debris are projected to remain relatively steady from RY 2016 tonnages (except for treated wood, which is projected to increase ~32% in RY 2017). From RY 2014 to RY 2017, C&D tonnages increase by 114%, reflecting the City’s construction boom, and are projected to decrease slightly in RY 2018 by ~-0.40%.

Figure 7: Recology San Francisco I/C Processing & Disposal and Total Operating Expense Comparison



2.4.3 Health Insurance

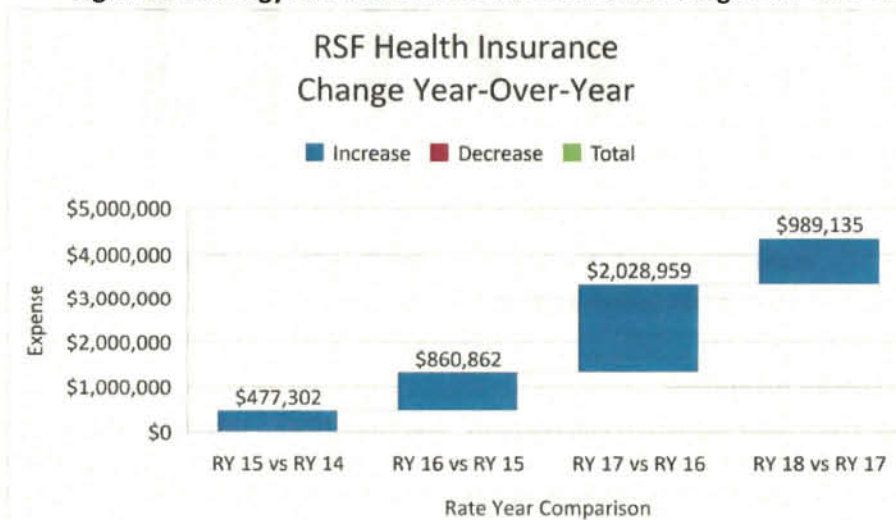
Health Insurance costs have increased considerably. The total Health Insurance cost is the expense of current employee health care coverage plus post-retirement medical costs. As a percentage of total operating expenses, Health Insurance represents approximately 10-11% between RY 2014 and RY 2018.

Table 5: Recology San Francisco Health Insurance Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
Health Insurance	\$10,496,668	\$10,973,970	\$11,834,832	\$13,863,790	\$14,852,925
Total Operating Expenses	\$109,272,348	\$112,855,626	\$118,392,078	\$125,056,693	\$143,945,111
% of Total Operating Expenses	9.6%	9.7%	10.0%	11.1%	10.3%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
	\$ Change	\$477,302	\$860,862	\$2,028,959	\$989,135
	% Change	4.5%	7.8%	17.1%	7.1%

From RY 2014 to RY 2017, the cost of Health Insurance increased approximately \$3.4 million (~32%), an annual average increase of ~1.1 million (~10.7%). From RY 2017 to RY 2018, it is projected the cost will increase again by approximately \$989,000, about 7%. See Figure 8, below, which shows the year over year change in Health Insurance costs for the period under review. There is a notable increase in cost between RY 2016 and RY 2017, about \$2 million. Figure 8 compares this cost category to the total operating expenses.

Figure 8: Recology San Francisco Health Insurance Change Year over Year



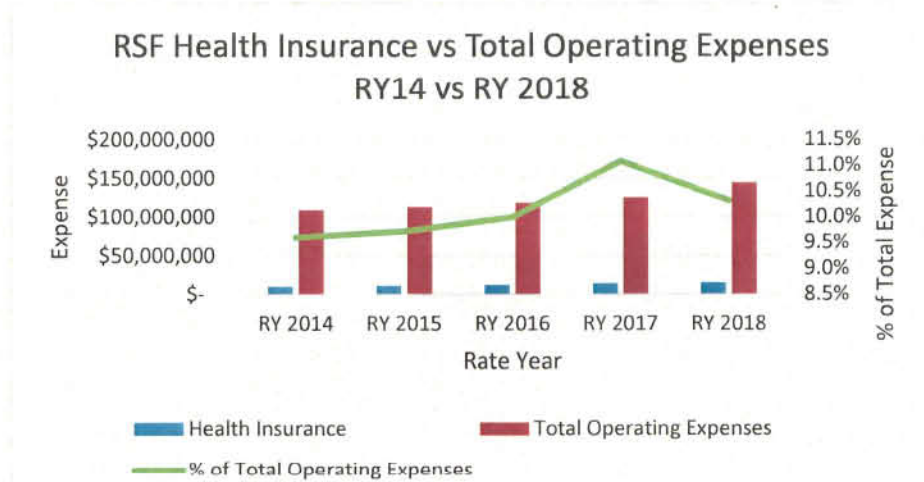
Findings:

2017 projected health insurance cost is calculated using the monthly rate multiplied by 12 months to produce the annual rate, which is then multiplied by the number of people enrolled in the program (number of staff projected in 2017). This amount is then added to the postretirement medical cost, which is the calculated value for the Local 350 Union Retirement Security Plan, or RSP (total monthly rate x 12 months x actual union headcount).

- Recology noted that the main cause of increases in health insurance costs is an increase in rate (13%) combined with an increase in headcount (3%);

- To control costs, Recology employees do contribute to non-union plans. Since the last Rate Application, employee contributions were added for vision and dental (effective 1/1/2014) and medical (effective 1/1/2015). Copayments for non-union plans were changed in 2013 and have not changed since;
- Recology stated that healthcare plans (including copays and benefits) for union employees have not changed since the last Rate Application. Recology has also stated that the most expensive health plan was eliminated as part of the latest Collective Bargaining Agreement with Local 350;
- According to Recology, the projected health and welfare benefit costs are based on anticipated calendar year 2017 costs (current cost of coverage per employee is over \$2,023 per month), inflated by 2.8%² for the second half of the year (health insurance rates are set on a calendar year basis and adjusted for the rate years); and
- Post-retirement costs reflect the cost of participation in the Retirement Security Plan (RSP), sponsored by the Teamsters Benefit Trust. Recology explained that these costs have increased approximately 8.2% per year (on average) over the last few years, which is used to escalate the RY 17 cost for the RY 18 projection.

Figure 9: Recology San Francisco Health Insurance and Total Operating Expense Comparison



2.4.4 Pension

Pension is a large cost category, representing between ~4 – 6.5% of the total operating budget. Per Recology, pension costs are based on projected contributions required to meet Employee Retirement Income Security Act (ERISA) pension plan funding requirements, as determined by RSF’s pension plan actuary. As seen in Table 6 and Figure 10, on the following page, the amount of money spent on Pension decreased substantially in RY 2016 (~\$2.3 million, or ~-32%) compared to RY 2015, and has since increased in RY 2017 and RY 2018 (~23% and ~10%, respectively).

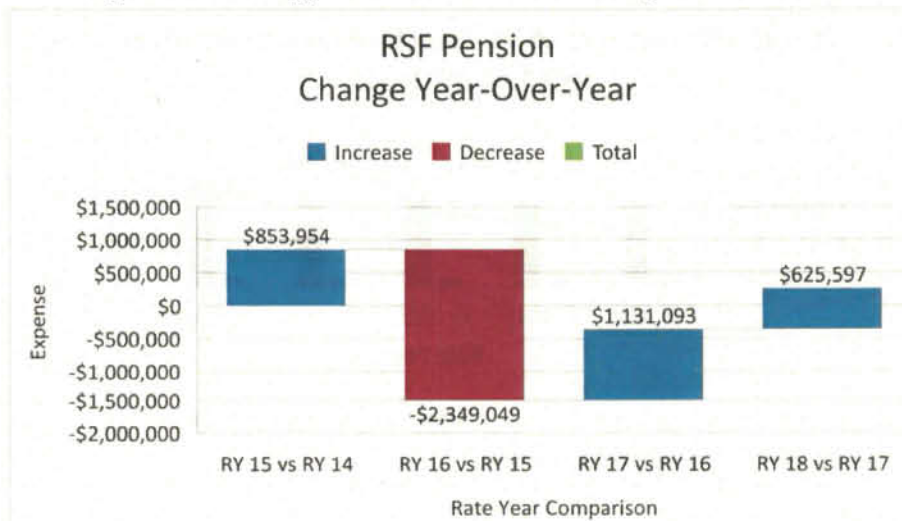
² The inflation factor was developed by RSF’s outside actuaries and is based on historical cost increases.

Table 6: Recology San Francisco Pension Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
Pension	\$6,506,452	\$7,360,406	\$5,011,357	\$6,142,450	\$6,768,047
Total Operating Expenses	\$109,272,348	\$112,855,626	\$118,392,078	\$125,056,693	\$143,945,111
% of Total Operating Expenses	6.0%	6.5%	4.2%	4.9%	4.7%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
	\$ Change	\$853,954	-\$2,349,049	\$1,131,093	\$625,597
	% Change	13.1%	-31.9%	22.6%	10.2%

From RY 2014 to RY 2017 Pension expenses decreased by a total of ~\$364,000 (~5.6%), an annual average change of ~\$121,000 (~-2%). Between RY 2017 and RY 2018, Pension expenses are expected to grow approximately \$625,000 (~10%).

Figure 10: Recology San Francisco Pension Change Year over Year



Findings:

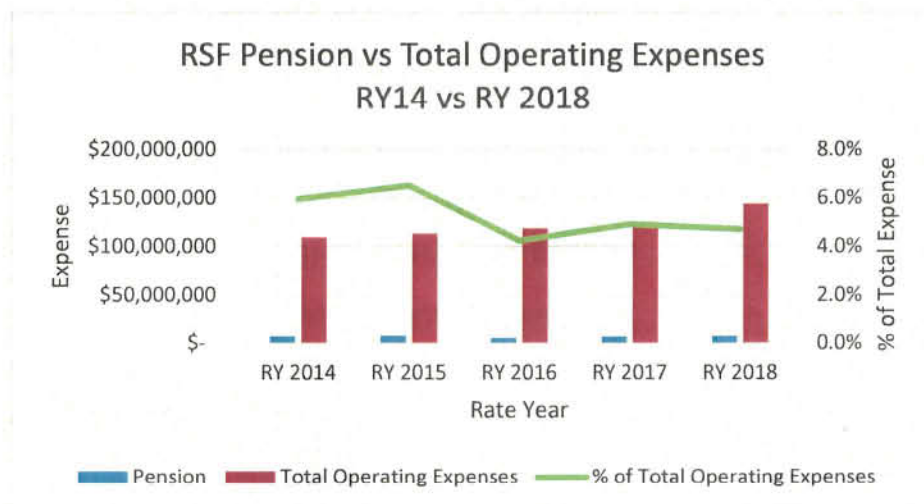
Projected contribution to pensions in 2017 is calculated using 25% of the October – September 2016 cost added to 75% of the October – September 2017 cost. Recology also provides pension benefits for employees represented by the Operating Engineers Local 3 under a separate union-sponsored plan. The plan is funded as a cost per hour for each participating employee.

- Recology explained that past Rate Applications have utilized cash contributions as the mechanism for rate recovery as they are fixed and determinable, based on the contractual obligation under the Local 350 Labor Agreement. Pension contributions are then allocated by Recology’s third party actuary Towers Watson;
- Recology has stated that pension contributions have been approximately equal to pension expense since the last Rate Application;

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- Recology also stated that they contributed more than average in RY 2013, and that overall funding decreased in the interim years because of these contributions along with asset appreciation in the interim period, resulting in an overall \$1 million decrease in pension expense. R3 has not substantially verified this claim;
- Recology’s total pension contributions from FY12 – FY 118 is an average of approximately \$25 million per year;
- The contribution per hour for the Local 3 plan is expected to increase 6% in calendar year 2018, based on historical increases;
- According to the Towers Watson allocation, Recology is projected to make an annual contribution of \$25 million each year from September 30, 2013 to fiscal year ending September 30, 2019; and
- By contributing this amount each fiscal year, Towers Watson comments that Recology is able to meet the plan’s minimum required contributions, meet union negotiated contribution requirements, remain above certain funded status thresholds under PPA and improve the overall well-being of the pension plan.

Figure 11: Recology San Francisco Pension and Total Operating Expense Comparison



2.4.5 Lease Expenses

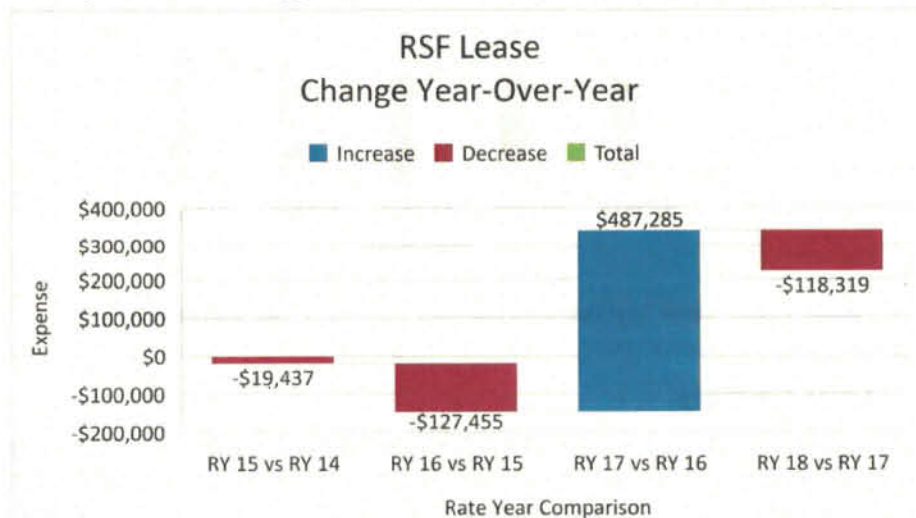
Lease expenses represent approximately 4% of RSF’s total operating expenses. This expense category displays some volatility over the period: decreasing slightly in RY 2015 and RY 2016 (-0.4% and -2.5%, respectively), increasing in RY 2017 (9.9%), and decreasing slightly again in RY 2018 (-2.2%).

Table 7: Recology San Francisco Lease Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
Lease	\$5,074,374	\$5,054,938	\$4,927,483	\$5,414,768	\$5,296,449
Total Operating Expenses	\$109,272,348	\$112,855,626	\$118,392,078	\$125,056,693	\$143,945,111
% of Total Operating Expenses	4.6%	4.5%	4.2%	4.3%	3.7%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
\$ Change		-\$19,437	-\$127,455	\$487,285	-\$118,319
% Change		-0.4%	-2.5%	9.9%	-2.2%

Between RY 2014 and RY 2017 Lease expenses grew a total of ~\$340,000 (~6.7%), an annual average change of ~\$113,000 (2.2%). From RY 2017 to RY 2018, Lease costs are projected to decrease by ~\$118,000 (~ -2.2%).

Figure 12: Recology San Francisco Lease Change Year over Year



Findings

- Per RSF’s Summary of Assumptions: Capital requirements for trucks, equipment, and leasehold improvements are projected over the rate period. Costs are added as equipment is acquired and leased over specified lease years. Generally, lease terms are assigned as follows:
 - Trucks and rolling equipment: 7 years
 - Stationary equipment: 10 years

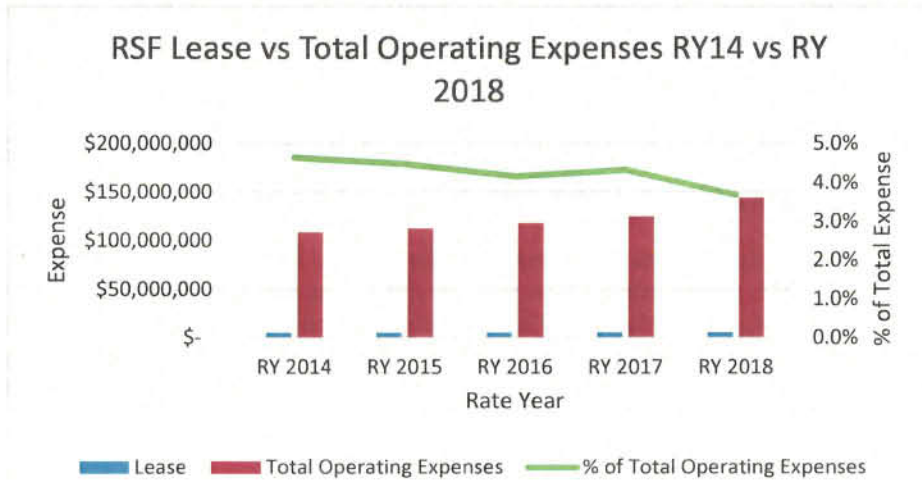
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- Furniture and fixtures: 8 years
- Facility improvements: 15 years or shorter
- The lease rates are calculated based on the asset lives shown above utilizing an implicit interest rate of 1.7%. The interest rate is reset monthly, based on the cost of Recology Inc.'s capital. RSF believes adequate financing will be available for all capital expenditures from Recology Inc.'s line of credit, lease lines with third party lessors, and/or California Pollution Control Financing Authority financing.
- Recology continually buys and leases equipment as part of its normal operations, and as part of its business management, plans equipment replacement to avoid large spikes in lease expenses year to year. To simplify the calculation of lease expenses in the rate application, Recology uses a mid-year convention.
- At the time a lease is issued, Recology uses the market rate and the type of equipment purchased determines the lease term. When a lease expires, the expense of that equipment is then "free" (no longer on the rates) barring routine maintenance since its cost has been paid for in prior years; and
- The lease rate at the top of Schedule H.2 is based on the historical average going back to late 2014, and is inclusive of both the principal payment and interest rate.

Figure 13: Recology San Francisco Lease and Total Operating Expense Comparison



2.4.6 Other Operating Expense Trends

The following operating expenses display notable variances from year-to-year historical expenses and/or in RY 2018.

- **Property Rental:** From RY 2017 to RY 2018, Property Rental jumps ~\$1.9 million (~47%), which is largely due to the costs of Recology's lease with the Port of San Francisco for Pier 96 increasing by 93% from \$148,333 to \$285,696 per month in RY 2018. Property Rental remains stable from RY 2014 to RY 2017, growing a total of ~\$388,000 (~11%) during that time.

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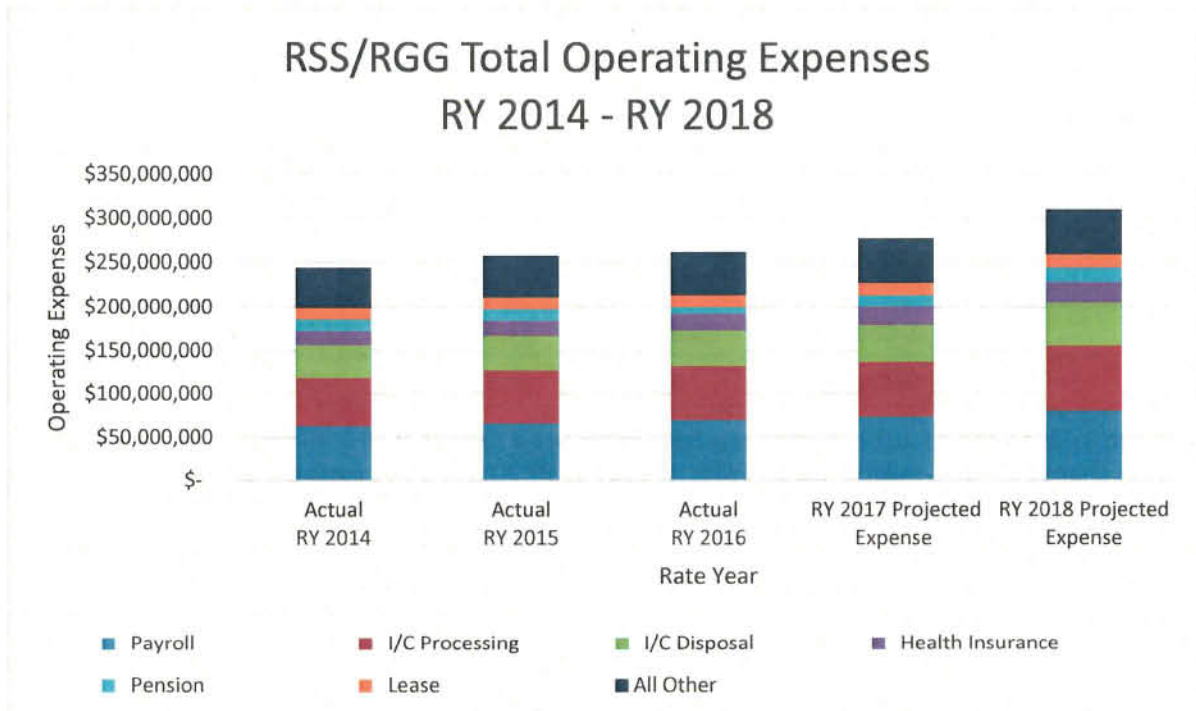
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- **Licenses & Permits, Workers Compensation, Depreciation:** From RY 2017 to RY 2018, the costs associated with these expense categories increase significantly (~\$892,000 or ~35%, ~\$788,000 or ~28%, and \$676,000 or 39%, respectively).
- **Freight:** Between RY 2014 and RY 2017, the cost of Freight has increased a total of ~\$181,000 (~17%). This expense closely reflects the prior year experience: RY 2017 is based on six months of actuals and six months of budget. Freight is calculated based on the cost per load and numbers of loads shipped from Recycle Central, Tunnel Avenue Metal Rail care, and Other Freight.
- **Bridge Tolls, Tire & Tubes, Repairs & Maintenance:** RSF's increased costs for tolls and tires & tubes (from RY 2014 to RY 2017, \$469,000 or 56% and \$74,000 or 28%, respectively) is due to the transition from Altamont Landfill (one toll, shorter distance) to Hay Road (two tolls, longer distance) in January 2016, which increased tolls during RY 2016. There are now two tolls for RY 2017 and RY 2018. Regarding Repairs & Maintenance, the increasing trend in expenses (\$243,000, or 48%, from RY 2014 to RY 2017) is due to the average age of the equipment (Pier 96, iMRF, asphalt, tip floors, paving, etc.) and the increase in the size of RSF's hauling fleet.
- **Bad Debt, Postage, Supplies:** These expense categories show a relatively significant percentage increase from RY 2014 to RY 2017 (~ 1096%, 113% and 13.3%, respectively). While of note, the dollar amount this represents is not on the same scale as major expense categories in the sections above (~\$118,000, ~\$1,700 and ~\$223,000, respectively). Bad debt projections are based on historical data, and regarding postage RSF's invoices are mailed internally. In the past several years, RSF had an increase in commercial self-haul (see Schedule F.1), which increases the number of invoices mailed. RSF is looking to move to a third-party print house and lock-box. The expense for Supplies is projected based on RY 2017 year-to-date actuals with an adjustment for inflation.

2.5 Analysis of Recology Sunset Scavenger/Recology Golden Gate (RSS/RGG) Expenses

RSS/RGG projects that its total operating expenses will grow by a total of ~\$66.7 million (27.4%) from RY 2014 to projected RY 2018, representing an average annual increase of approximately \$16.7 million (6.8%) over that period. Figure 14, below, shows RSF's total historical and projected operating expenses, and the amounts attributable to operating expense categories in the 2017 Final Rate Application. As shown, the largest operating costs are payroll, intercompany processing and intercompany disposal, which are increasing from RY 2014 to RY 2018.

Figure 14: RSS/RGG Total Operating Expenses RY 2014 to RY 2018



From RY 2014 to projected RY 2017, operating expenses grow by ~\$33.5 million (13.7%), an average annual increase of ~\$11.2 million (4.6%). From projected RY 2017 to projected RY 2018, operating expenses increase another ~\$33.2 million (12%).

The following sections detail the top five (5) expense categories contributing to RSS/RGG’s operating cost. Combined, these expense categories account for ~83% of RSS/RGG’s total projected operating budget in RY 2017, and approximately 84% of the projected operating budget in RY 2018.

2.5.1 Payroll

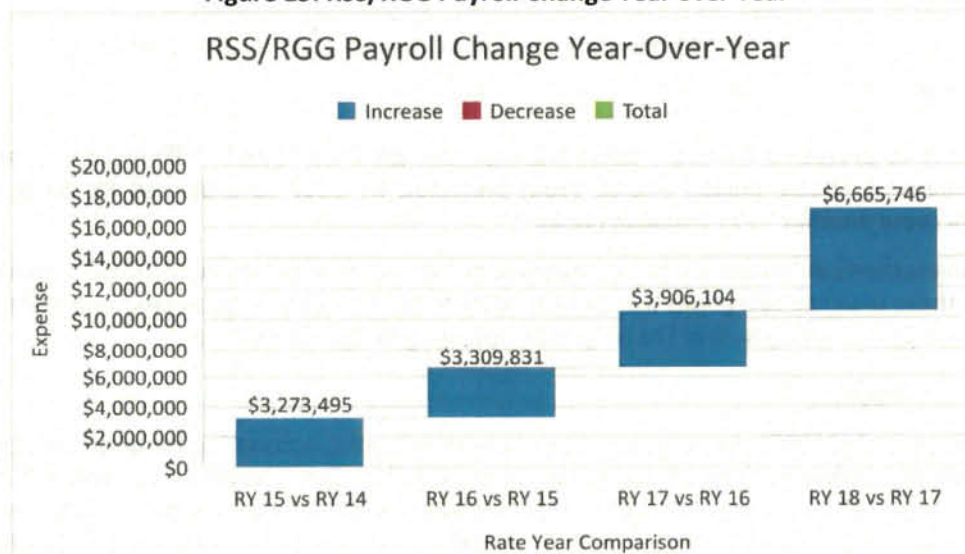
Payroll represents RSS/RGG’s largest operating expense category, accounting for approximately 26% of the total operating expenses from RY 2014 to projected RY 2018. Over the period, growth is ~\$3-4 million year over year, or ~5% per year, until spiking ~\$6.7 million in RY 2018 to correspond with the new routing and additional drivers needed for the Fantastic 3 collection program. R3 consulted with SFE on head count program needs, and SFE confirmed the increase in head count accurately reflects program needs.

Table 8: RSS/RGG Payroll Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
Payroll	\$63,163,426	\$66,436,921	\$69,746,753	\$73,652,857	\$80,318,603
Total Operating Expenses	\$243,538,113	\$257,276,343	\$261,310,600	\$277,008,295	\$310,210,541
% of Total Operating Expenses	25.9%	25.8%	26.7%	26.6%	25.9%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
	\$ Change	\$3,273,495	\$3,309,831	\$3,906,104	\$6,665,746
	% Change	5.2%	5.0%	5.6%	9.1%

Between RY 2014 and RY 2017 Payroll costs have increased a total of ~\$10.5 million (16.6%), an annual average change of ~\$3.5 million (5.5%). From RY 2017 to RY 2018, Payroll costs are projected to rise ~\$6.7 million (9.1%). See Figure 15, below, which shows the year over year change in Payroll costs for RY 2014 to RY 2018.

Figure 15: RSS/RGG Payroll Change Year over Year



Findings

Payroll expenses are based on the number of employees, hours worked, staff benefits (sick, vacation, and holiday time), overtime, holiday and weekend pay. Actual and projected head counts and payroll expenses are provided in total and by labor category in the Final Rate Application, Schedule G.1.

- Increases in Payroll expense is driven by operational changes and the corresponding increases in head count by operating unit:
 - Fantastic 3 Split Collection is projected to add 23 FTE drivers in RY 2018 to staff the additional 23 routes associated with the split truck collection transition from trash and recycling to trash and organics;

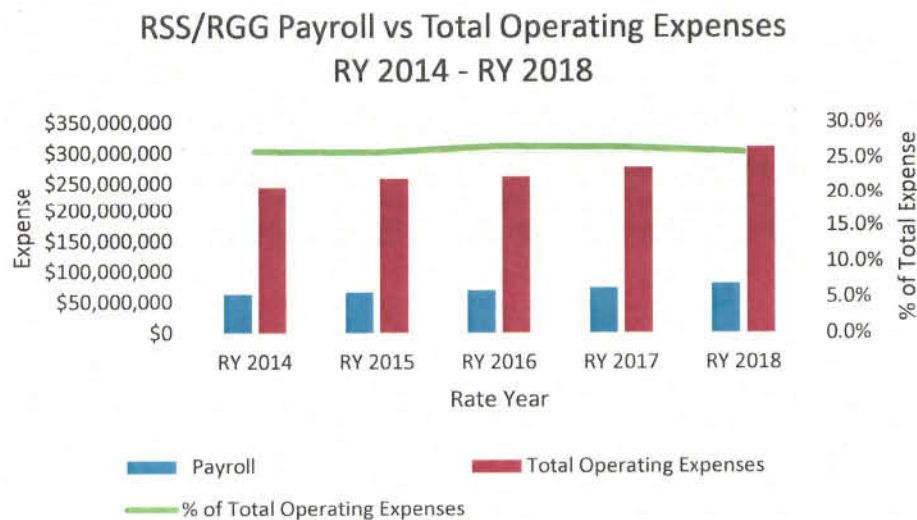
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- Truck and Garage head count will increase by 4.28 FTE in RY 2017, and 2 FTE in RY 2018, to support the change in Fantastic 3 routing and maintain the additional 23 trucks added to the fleet. Most of the projected increase falls into the “Union - Shop” labor category;
- General & Administrative staff will increase 2.46 FTE in RY 2017, and another 2 FTE in RY 2018;
- Commercial Recycling will gain ~2 FTE in RY 2017, and another 2 FTE in RY 2018. Waste Zero Specialists are being added to the head count in support of the City’s zero waste goals and related program implementation (e.g., apartment diversion program and event clean-up);
- Other operating units will also have staffing reductions, or modest increases in headcount. For example:
 - Abandoned Materials Collection (2 FTE gained in RY 2018);
 - Bulky-Item Recycling (~3 FTE gained RY 2017-RY 2018);
 - Public Refuse Receptacles (~1 FTE gained RY 2018);
 - Roll-Off Collection (~3 FTE gained RY 2017-RY 2018).
- It should be noted that other Payroll related expenses are also on the rise: combined, Health Insurance, Payroll Taxes, Workers Comp, and Pension grow approximately 17% from RY 2016 to RY 2017, and ~12% in 2018;
- Anticipated changes in payroll expense are, overall, within the historical range regarding annual growth except for RY 2018, due to the Fantastic 3 program routing changes. See Figure 16, below.

Figure 16: RSS/RGG Payroll and Total Operating Expense Comparison



2.5.2 Intercompany Processing and Disposal

Intercompany Processing and Disposal costs have increased to reflect the rising cost per ton disposed and per ton composted. As a percentage of total operating expenses, I/C Processing remains steady at about

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24% and I/C Disposal at ~16%. Yet when viewed year to year these expense categories show more volatility, see Table 9 on the following page.

Table 9: RSS/RGG I/C Processing and I/C Disposal Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
I/C Processing	\$55,832,048	\$61,255,697	\$62,741,858	\$63,844,859	\$76,234,662
I/C Disposal	\$37,755,912	\$39,596,954	\$41,476,565	\$42,183,927	\$49,169,175
Total Operating Expenses	\$243,538,113	\$257,276,343	\$261,310,600	\$277,008,295	\$310,210,541
I/C Processing % of Total Operating Expenses	22.9%	23.8%	24.0%	23.0%	24.6%
I/C Disposal % of Total Operating Expenses	15.5%	15.4%	15.9%	15.2%	15.9%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
I/C Processing	\$ Change	\$5,423,649	\$1,486,161	\$1,103,001	\$12,389,803
I/C Processing	% Change	9.7%	2.4%	1.8%	19.4%
I/C Disposal	\$ Change	\$1,841,042	\$1,879,611	\$707,362	\$6,985,247
I/C Disposal	% Change	4.9%	4.7%	1.7%	16.6%

Unlike RSF, I/C Processing and I/C Disposal are split into two operating expense line items in the RSS/RGG rate model. From RY 2014 to RY 2017 the cost of I/C Processing has increased approximately \$8 million (14.4%), and annual average change of ~\$2.7 million (4.8%), and I/C Disposal has increased ~4.4 million (~12%), an annual average change of ~\$1.5 million (3.9%). From RY 2017 to RY 2018 the cost of I/C Processing is projected to increase approximately \$12.4 million (~19.4%), and I/C Disposal is projected to increase ~\$7 million (~17%). See Figure 17 and Figure 18, on the following page, show the year over year change in these costs for the period under review. Figure 19 compares this cost category to the total operating expenses.

Figure 17: RSS/RGG I/C Processing Change Year over Year

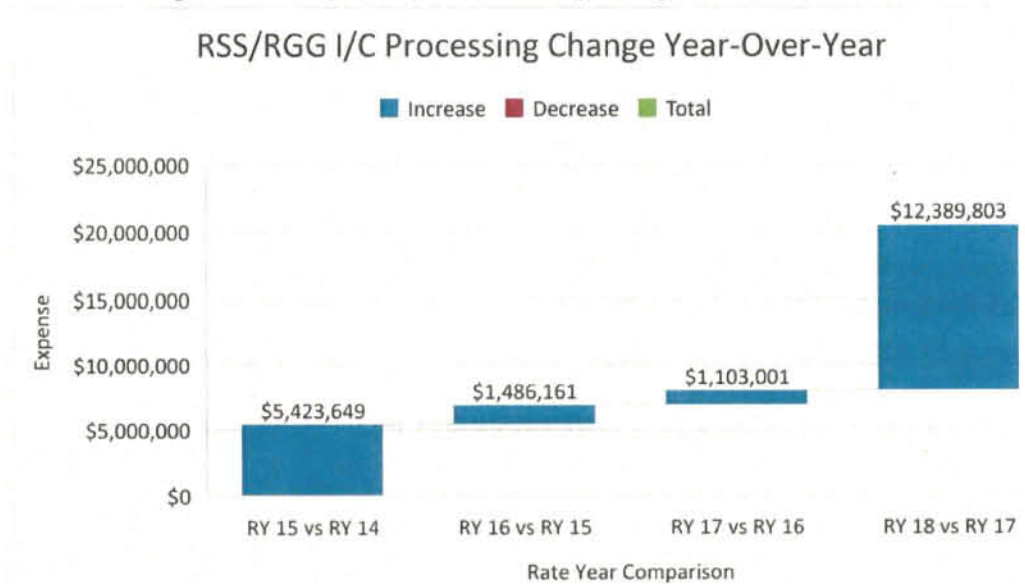
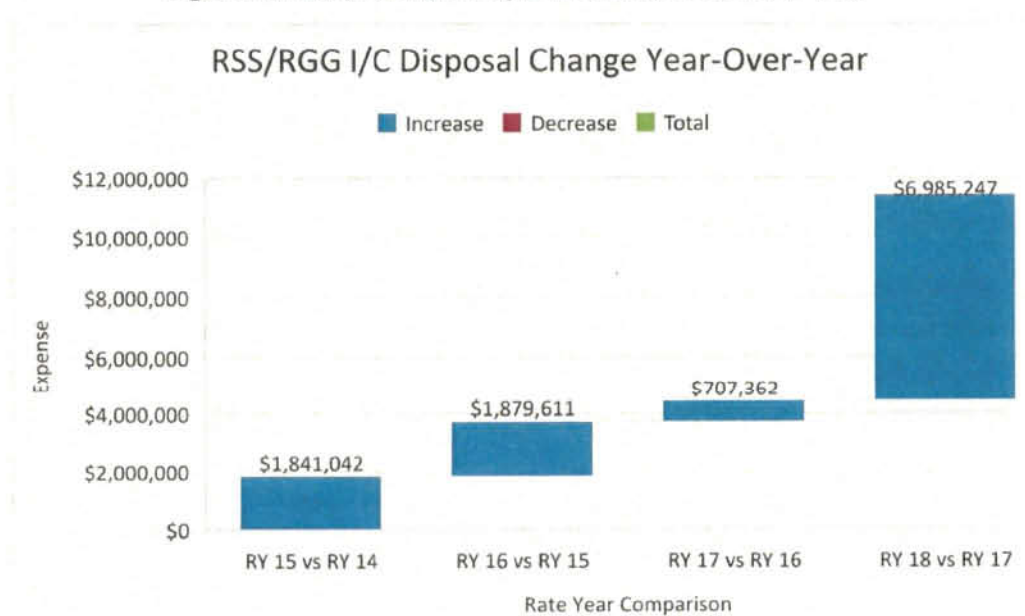


Figure 18: RSS/RGG I/C Disposal Change Year over Year



Findings:

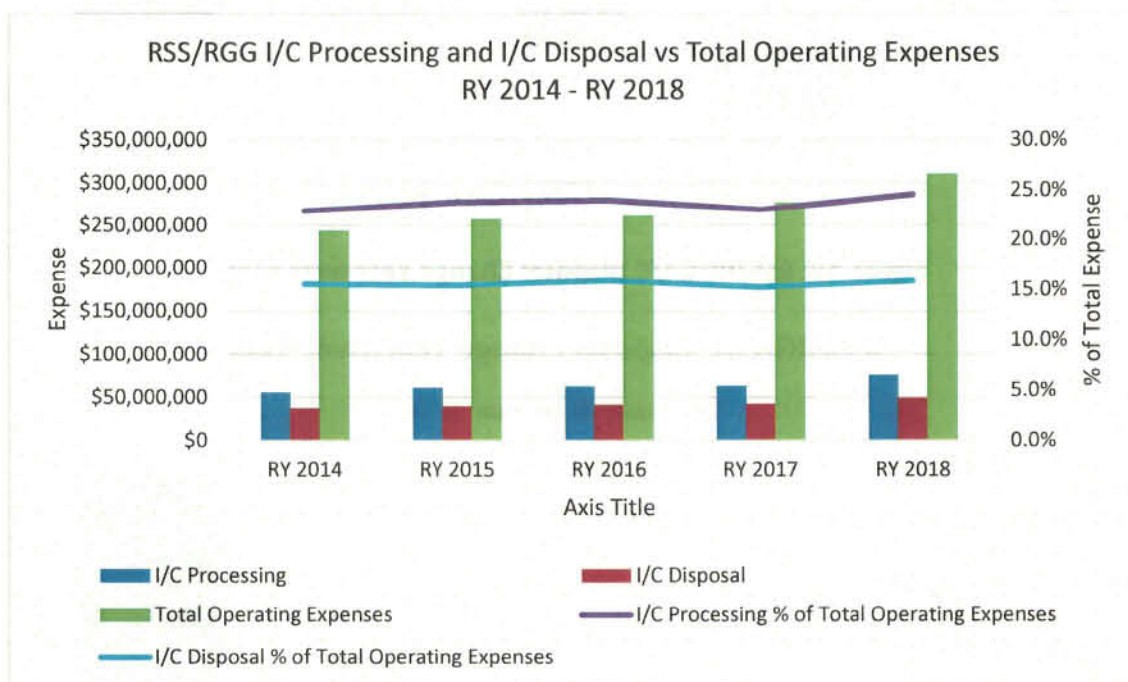
- Per RSS/RGG’s Summary of Assumptions, disposal costs are determined based on the estimated disposal tonnage and the projected RSF tip charge at the Tunnel Avenue Transfer Station. The estimated disposal tonnage is based on current tonnage collected, with disposal tonnage adjusted downward to account for projected increases in recycling and composting services as well as the

initiation of trash processing. See the RSF Summary of Assumptions for more details on disposal costs.

- I/C Disposal costs from RY 2014 to RY 2015 reflect \$0 in Figure 18 above; this is due to the use of Altamont Landfill, a non-Recology owned operation, prior to the transition to Hay Road Landfill, which is owned by Recology and shows as an intercompany expense.
- I/C Processing and I/C Disposal expenses are not included in Recology’s calculation of OR for RSS/RGG; and

Additional findings regarding intercompany processing and disposal are detailed in Section 2.3.2 I/C Processing and Disposal, above.

Figure 19: RSS/RGG I/C Processing, I/C Disposal and Total Operating Expense Comparison



2.5.3 Health Insurance

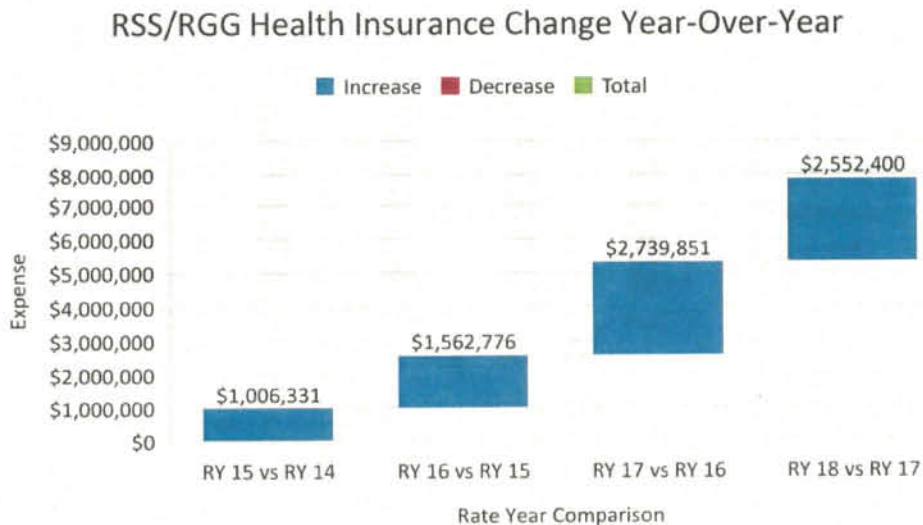
Health Insurance costs are on the rise: as a percentage of total operating expenses, Health Insurance represents approximately 7-8% between RY 2014 and RY 2018. Total Health Insurance cost is the expense of current employee health care coverage plus post-retirement medical costs.

Table 10: RSS/RGG Health Insurance Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
Health Insurance	\$16,440,315	\$17,446,646	\$19,009,422	\$21,749,273	\$24,301,673
Total Operating Expenses	\$243,538,113	\$257,276,343	\$261,310,600	\$277,008,295	\$310,210,541
% of Total Operating Expenses	6.8%	6.8%	7.3%	7.9%	7.8%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
	\$ Change	\$1,006,331	\$1,562,776	\$2,739,851	\$2,552,400
	% Change	6.1%	9.0%	14.4%	11.7%

From RY 2014 to RY 2017, the cost of Health Insurance increased approximately \$5.3 million (~32%), an annual average increase of ~1.8 million (~10.8%). From RY 2017 to RY 2018, it is projected the cost will increase by approximately \$2.5 million, about 12%. See Figure 20, below, which shows the year over year change in Health Insurance costs for the period under review. There is a notable increase in cost between RY 2016 and RY 2017, and RY 2017 and RY 2018. Figure 21 compares this cost category to the total operating expenses.

Figure 20: RSS/RGG Health Insurance Change Year over Year



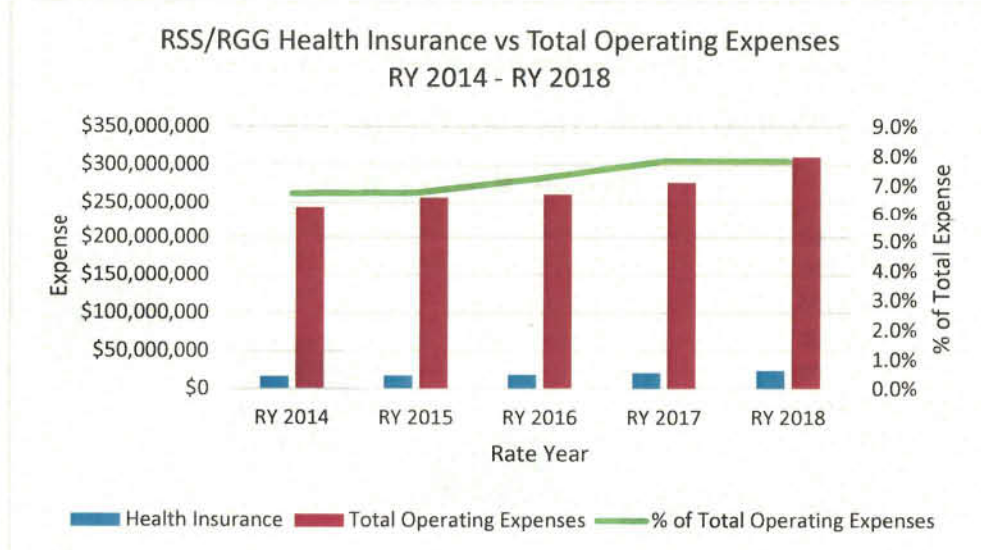
Findings:

- Per RSS/RGG Summary of Assumptions and other explanations provided by Recology:
 - During the last several years, RSS and RGG, like other employers, have experienced significant increases in the cost of health care coverage. The current cost of coverage is

over \$2,224 per employee per month and is expected to be \$2,311 per employee per month in RY 2018.

- RSS and RGG have implemented changes to the health benefits provided to non-union employees to control costs, including increased co-payments and benefit reductions. Union programs are governed by collective bargaining agreements.
 - The projected health and welfare benefit costs contained in this Final Rate Application are based on anticipated calendar year 2017 costs, inflated by 2.8% for the second half of the year (health insurance rates are set on a calendar year basis and adjusted for the rate years). The inflation factor was developed by RSS and RGG’s outside actuaries and is based on historical cost increases.
 - Post-retirement costs in this Final Rate Application reflect the cost of participation in the Retirement Security Plan (RSP), sponsored by the Teamsters Benefit Trust. The RSP provides post-retirement medical benefits to union members who qualify under the terms of the applicable collective bargaining agreements. The RSP cost is paid monthly for each eligible employee. These costs have increased approximately 8.2% per year over the last few years. The current monthly cost of the base program is \$677 per eligible employee per month, and is expected to increase 8.2% to \$733 per eligible employee per month as of July 1, 2017
- See Section 2.6 Detailed Analysis of Health Insurance Costs for more information on health insurance.

Figure 21: RSS/RGG Health Insurance and Total Operating Expense Comparison



2.5.4 Pension

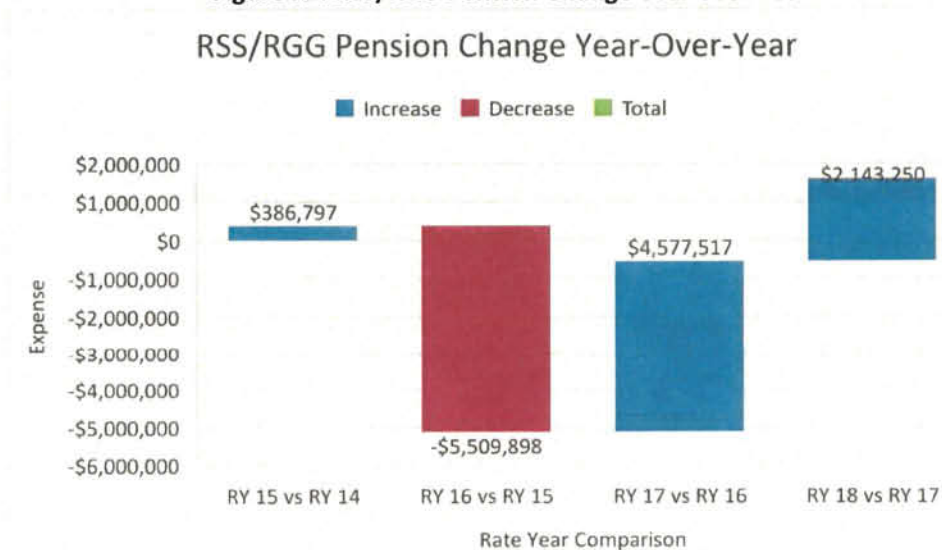
Pension is a significant cost category, representing between ~3 –5% of RSS/RGG’s total operating budget. As seen in Table 11 and Figure 22, below, the amount of money spent on Pension decreased considerably in RY 2016 (~\$5.5 million, or ~-40%) compared to RY 2015, and has since increased in RY 2017 and RY 2018 (~56% and ~17%, respectively).

Table 11: RSS/RGG Pension Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
Pension	\$13,257,583	\$13,644,380	\$8,134,483	\$12,712,000	\$14,855,250
Total Operating Expenses	\$243,538,113	\$257,276,343	\$261,310,600	\$277,008,295	\$310,210,541
% of Total Operating Expenses	5.4%	5.3%	3.1%	4.6%	4.8%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
\$ Change		\$386,797	-\$5,509,898	\$4,577,517	\$2,143,250
% Change		2.9%	-40.4%	56.3%	16.9%

From RY 2014 to RY 2017 Pension expenses decreased by a total of ~\$546,000 (~4.1%), an annual average change of ~\$182,000 (~-1.4%). Between RY 2017 and RY 2018, Pension expenses are expected to grow approximately \$2.1 million (~17%).

Figure 22: RSS/RGG Pension Change Year over Year



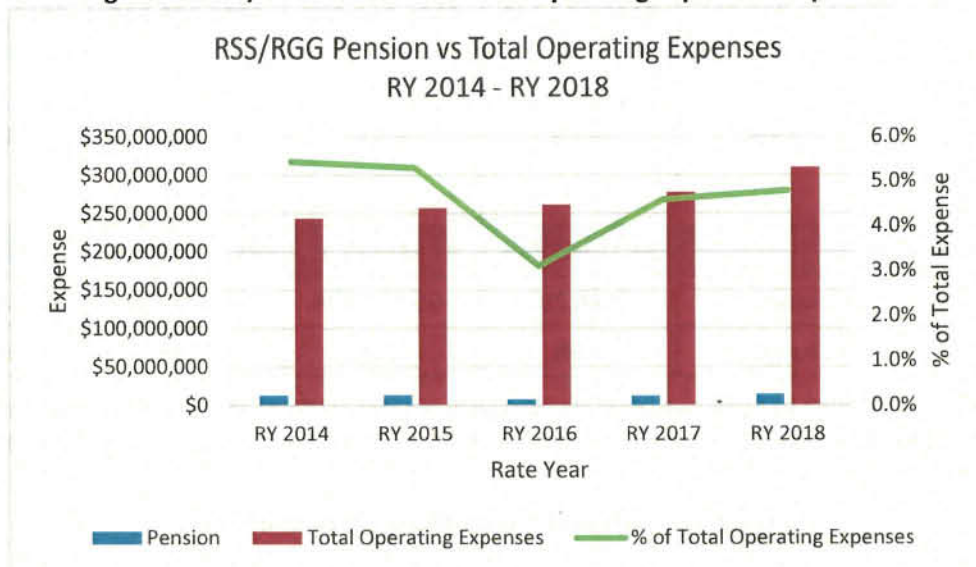
Findings

- Per RSS/RGG’s Summary of Assumptions:
 - Pension costs are based on projected contributions to meet Employee Retirement Income Security Act (ERISA) pension plan funding requirements, as determined by RSS and RGG’s pension plan actuary.
 - RSS and RGG’s contributions are expected to be \$12,712,000 in RY 2017 and \$14,855,250 in RY 2018. Analysis from Recology’s third-party actuaries show that future contributions

are projected to be stable at approximately \$14,900,000 per year based on current expectations for discount rates, returns on assets, and relatively static employment levels.

- See Section 2.3.4 Pension and Section 2.5 Detailed Analysis of Pension Costs for R3’s findings on this cost category and additional information.

Figure 23: RSS/RGG Pension and Total Operating Expense Comparison



2.5.5 Lease Expense

Lease expenses represent approximately 5% of RSS/RGG’s total operating expenses. This expense category displays some volatility over the period: increasing slightly in RY 2015 (0.8%), decreasing -1.5% in RY 2016, increasing considerably in RY 2017 (13.7%), and decreasing again in RY 2018 (-5.8%).

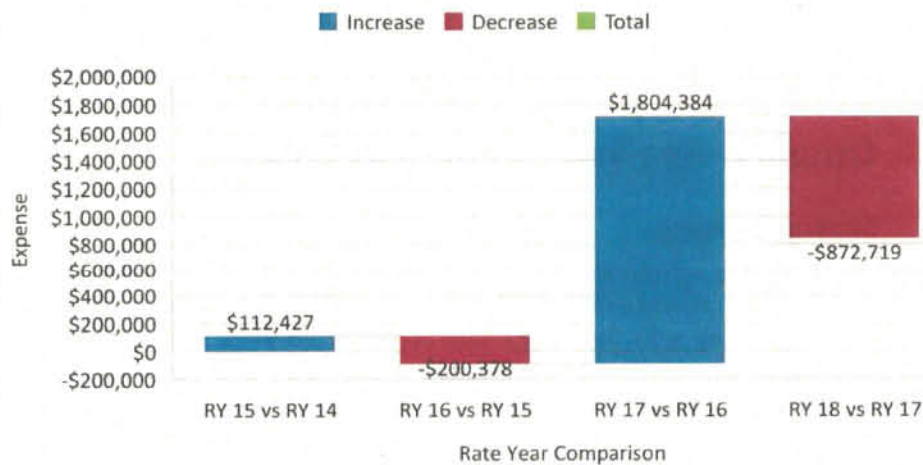
Table 12: RSS/RGG Lease Analysis

Item Description	RY 2014	RY 2015	RY 2016	RY 2017	RY 2018
Lease	\$13,275,271	\$13,387,698	\$13,187,320	\$14,991,704	\$14,118,986
Total Operating Expenses	\$243,538,113	\$257,276,343	\$261,310,600	\$277,008,295	\$310,210,541
% of Total Operating Expenses	5.5%	5.2%	5.0%	5.4%	4.6%
Variance Analysis		RY 15 vs RY 14	RY 16 vs RY 15	RY 17 vs RY 16	RY 18 vs RY 17
\$ Change		\$112,427	-\$200,378	\$1,804,384	-\$872,719
% Change		0.8%	-1.5%	13.7%	-5.8%

Between RY 2014 and RY 2017 Lease expenses grew a total of ~\$1.7 million (~13%), an annual average change of ~\$5.72 million (4.3%). From RY 2017 to RY 2018, Lease costs are projected to decrease by ~\$872,000 (-5.8%).

Figure 24: RSS/RGG Lease Change Year over Year

RSS/RGG Lease Insurance Change Year-Over-Year



Findings

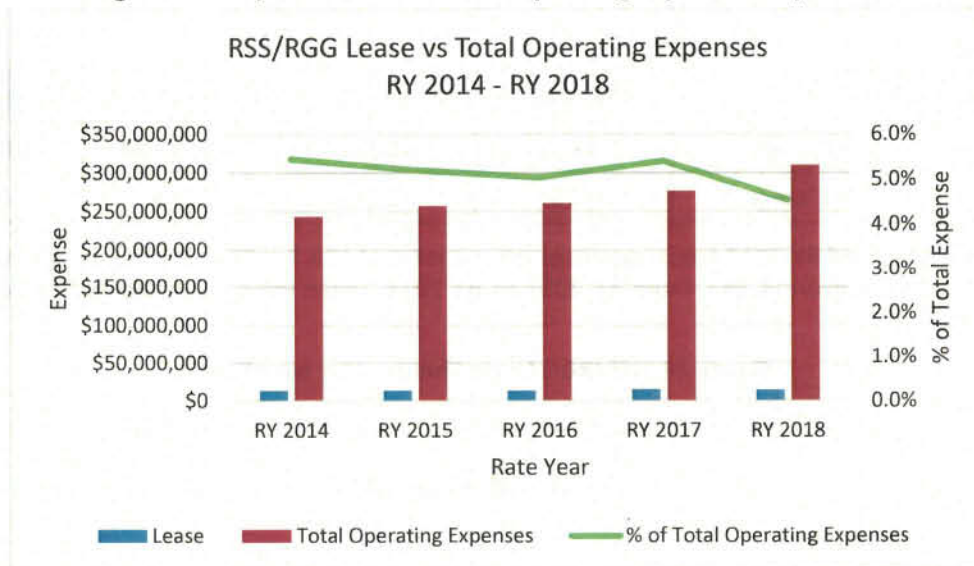
- Per RSS/RGG’s Summary of Assumptions, capital requirements for trucks, equipment, and leasehold improvements are projected based on the replacement schedule and anticipated facility and program needs. Costs are added as equipment is acquired and leased over specified lease years. Generally, lease terms are assigned as follows:
 - Trucks and rolling equipment: 7 years
 - Stationary equipment: 10 years

- o Facility improvements: 15 years

The lease rates are calculated based on the asset lives shown above utilizing an implicit interest rate of 1.7%. The interest rate is reset monthly, based on the cost of Recology Inc.'s capital. RSS and RGG believe adequate financing will be available for all capital expenditures from Recology Inc.'s line of credit, lease lines with third party lessors, and/or California Pollution Control Financing Authority financing.

- See Section 2.3.5 Lease Expense and Section 5 Third Party Leases for R3's findings on this operation expense category and more information.

Figure 25: RSS/RGG Lease and Total Operating Expense Comparison



2.6 Detailed Analysis of Pension Costs

2.6.1 Summary Findings

Pension funding levels have increased at a relatively moderate rate since 2014, with RSS/RGG's pension funding levels increasing at an average rate of 3% per year, and RSF's increasing at 1% per year. While we have not identified any issues with Recology's overall projected 2018 Pension levels based on the supporting documentation provided, it was the City's expectation that Recology would aggressively pursue changes to the union pension plan to control costs as part of the recent renegotiation process. This does not appear to have occurred as Recology has reported that there have been no changes to the union Pension plan since the last Rate Application.

Figure 26: Historical Pension Funding Levels

Total Pension Contributions		
Million		
FY12	\$	38.60
FY13	\$	25.00
FY14	\$	25.00
FY15	\$	25.00
FY16	\$	12.00
FY17	\$	25.00
FY18	\$	25.00
Average	\$	25.09

Source: JP Email, March 31, 2017 Re: FW:RFI#6

Pension Funding Levels

Pension costs are based on projected contributions to meet Employee Retirement Income Security Act (ERISA) pension funding requirements, as determined by Recology's pension plan actuary

Changes Since the Last Rate Application

Recology's pension plan has a negotiated annual contribution that has not changed since the last Rate Application. Benefits under this plan are capped annual at \$55,000 per year, which manages rate payer liability as it's not subject to annual increases. Recology reported that since the last Rate Application, non-union employees are no longer participants in the pension plan as new employees are entered into a defined contribution 401(k) plan. While we understand that this is the current case, this action was reported by Recology as having taken place at the time of the last Rate Application, and is not a new action.³

2018 Projected Compared to 2016 Actuals

RSS/RGG's 2018 projected Pension expense is 12% higher than its 2014 Actual expense (3% average annual increase), while RSF's expense is 4% higher (1% annual increase), which we find to be reasonable.

2.6.2 Historical Cost Analysis

Attachment B provides Actual and Projected Labor line items for RSS/RGG. Attachment C provides a similar accounting for RSF.

2014 Actuals vs. Projection

- RSS/RGG's Actual Pension cost was 2.9% higher than projected for 2014.

³ Per page 10 of the 2013 Staff report.

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- RSF's Actual Pension cost was 25.2% higher than projected.

2014 – 2016 Actuals

- RSS/RGG's Actual costs decreased by more than 38% from 2014 to 2016 due to a reported decrease of more than 40% in 2016. With respect to this reported decrease, Recology's 2013 Rate Application projecting \$25 million in Total Recology Contributions for the period Oct-Sep 2016, but reporting actual contributions of \$12 million for that same period in the 2017 Final Rate Application.
- RSF's Pension costs decreased by 23% in FY 2016 as compared to 2014 Actuals.

2017 and 2018 Projections

- RSS/RGG is projecting an 82.6% increase in its Pension costs for 2018 as compared to 2016 Actuals, due to the Oct-Sept 2016 lower reported contribution.
- RSF is projecting a 35.1% increase in its Pension costs for 2018 as compared to 2016 Actuals.

2018 Projections vs. 2014 Actuals

- RSS/RGG is projecting a 12% increase in its Pension costs for 2018 as compared to 2014 Actuals. A 3.0% average annual increase.
- RSF is projecting a 4% increase in its Pension costs for 2018 as compared to 2014 Actuals. A 1.0% average annual increase.

2.6.3 2013 Report Recommendation

2013 Staff Report Recommendations

The 2013 Staff Report stated that:

Recology has frozen its pension plan with respect to new non-union personnel, who now participate in a defined contribution plan that is not subject to fluctuating funding requirements. Union pension obligations are governed by contractual obligations and program changes are limited under the current collective bargaining agreements. When those agreements are renegotiated, however, it is staff's expectation that Recology will aggressively pursue changes to the union pension plan in an effort to control those costs as the City has done with its own employee pension plan over recent years. The City's efforts to control pension liabilities and annual employer contributions to the pension plan have included requiring employee contributions to the pension plan (between 7.5% and 11.5% of salary is deducted from bi-weekly paychecks), increasing the age at which full benefits can be realized to 65, and basing retirement compensation on 75% of the average of the final three years salary. The Companies may also consider freezing the union pension plan, and implementing a defined contribution plan similar to that implemented for new non-union personnel. It is also staff's expectation that its review of any future applications will consider the reasonableness of overall negotiated pension benefits when determining what portion of those expenses are appropriate to include in the rate base.

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As noted above, Recology has not made any changes to its negotiated annual contribution limit since the last Rate Application, or any other changes.

2013 Directors Report Recommendations

The 2013 Director's Report identified several recommendations related to the review of future Rate Applications, including issues related to Pension Expenses. The following is excerpted from the 2013 Director's Report:

Staff conducted a thorough review of the collection, processing, and disposal operations of the Companies, as detailed in Section 8 of the staff report. Staff found that most of the Companies' proposed expenses were accurate and reasonable, and did not recommend adjustments to those line items. However, staff also recommended that the Companies do more to control costs in the areas of health care, pensions and workers' compensation. Staff argued that the Companies could do more to control health care costs if they required employees to make regular contributions for their health care coverage and if they required employees to make co-payments for medical visits. Staff provided evidence that the City requires these sorts of contributions from its own employees for health care, while the Companies do not (Exh. 76) (see Attached). Staff noted that the City, by voter mandate, also has enacted a number of changes to its pension system that have lessened the City's pension liability. Staff recommended, and I agree, that the review of future Rate Applications should consider the reasonableness of overall negotiated pension and health benefits, including requiring co-payments when determining what portion of those expenses are appropriate to include in the rate base. In future rate reviews staff also may consider recommending excluding from the operating ratio the health care cost increases that are above a reasonable amount.

Recology's Response

Recology stated that:

- *"Recology's pension plan has a negotiated annual contribution that has not changed since the last Rate Application. Benefits under this plan are capped annual at \$55,000 per year, which manages rate payer liability as it's not subject to annual increases. Lastly, non-union employees are no longer participants to the pension plan as new employees are entered into a defined contribution 401(k) plan, which further lessens rate payer liability"* (Attachment A).

Note: R3's understanding is that the non-union 401K plan was in place at the time of the prior Rate Application and does not represent a change in the program since that prior Rate Application.

- *...as indicated in the 2013 application, we contributed \$3.5M more than average in RY 2013 and along with asset appreciation in the interim period, our overall funding requirements decreased, which resulted in an overall \$1 million decrease in pension (Attachment A).*

2.7 Detailed Analysis of Workers Compensation Costs

2.7.1 Summary Findings

Despite a recent positive trend in worker safety metrics, the significant increase in Recology's workers' compensation costs since 2013 highlights the need for Recology's to continue to improve the safety of its workers. Current data (OSHA accident frequency and severity benchmarks and modification factors), show an overall positive safety trend over the past 5 years, and projected expenses appear reasonable

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given current safety performance. Recology’s “Limit Targets” are measured using three metrics: Incidence Frequency Rate, Lost Time Frequency Rate, and Incurred WC Cost* % Payroll. Comparing FY 16 vs FY 15, Recology’s recent safety performance has improved using all three measures.

RSS/RGG’s and RSF’s 2014 Workers Compensation Costs were significantly higher than projected; 31.5% and 19.1% respectively, in addition, both RSS/RGG’s and RSF’s Workers Compensation Costs increasing by more than 10% in 2015 and 2016. The 2018 Projections reflect an average annual increase in RSS/RGG’s expense of 6.3% as compared to 2014 Actuals, while RSF’s 2018 Projected expense reflects an average annual increase of 4.6% since 2014. While Workers Compensation costs have increased significantly since the last Rate Application, RSS/RGG’s 2018 projected expenses are 3.3% higher than 2016 Actuals, reflecting an average annual increase of less than 2% for the next two years, while RSF’s 2018 projected expenses are 3.7% less than 2016 Actuals.

Some of the increase in Workers Compensation costs is due to increased staffing levels. Recology also made a change to the method it uses to allocate workers compensation costs in 2015, which it reported is superior to the prior method that was used, and similar to how other companies allocate workers compensation costs. R3 requested Recology report on the impact the change in methodology has had on the costs allocated to RSS/RGG and RSF, which is presented below.

Table 13: Change in Workers Compensation Allocation Methodology

Note: Analysis completed in 2015, when the change was made.			
	Old Methodology	New Methodology	Difference
Recology Golden Gate	2,289,952	2,099,854	190,098
Recology Sunset Scavenger	6,566,627	6,804,546	(237,919)
Recology San Francisco	3,445,150	3,367,065	78,085
Total	12,301,729	12,271,465	30,264

Source: John Porter, April 6, 2017 email RE: R3-Recology Follow-up Call Discussion Items

In 2015, the impact of the change was less than \$50k and Recology expects the impact to be similar for all other years. Recology also reports that KPMG audited the new method.

2.7.2 Historical Cost Analysis

Attachment D provides Actual and Projected Labor line items for RSS/RGG. Attachment E provides a similar accounting for RSF.

2014 Actuals vs. Projection

Both RSS/RGG’s and RSF’s Actual Workers Compensation costs were significantly higher in 2014 than it projected in its 2013 Rate Application:

- RSS/RGG’s Actual 2014 Workers Compensation costs were 31.5% higher than projected.
- RSF’s Actual 2014 Workers Compensation expense were 19.1% higher.

2014 – 2016 Actuals

Both RSS/RGG and RSF experience more than a 10% annual increases in Workers Compensation costs in 2015 and 2016

- RSS/RGG’s WC costs increased by 21% (10.5% average annual increase)

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- RSF's Workers Compensation costs increased by 23% (11.5% average annual increase)

2017 and 2018 Projections

- RSS/RGG is projecting a total increase of 3.3% in its Workers Compensation costs over the next two years (less than 2% annual average increase).
- RSF is projecting a 3.7% **decrease** in Workers Compensation costs over the next two years. The 2018 Projected expense is 18% higher (5% average annual increase since 2014).

2018 Projections vs, 2014 Actuals

- RSS/RGG's 2018 Projected expense is 25% higher than its 2014 Actual expense (a 6.3% average annual increase since 2014).
- RSF's 2018 Projected expense is 18.4% higher than its 2014 Actual expense (a 4.6% average annual increase since 2014).

2.7.3 2013 Report Recommendations

Director's Report Recommendation

As noted above, concerns were expressed about the projected increase in workers' compensation costs, and the need for assurances that the Companies safety programs are effective, and that they are doing everything in their power to minimize accidents and injuries associated with workers' compensation costs.

The 2013 Director's Report identified several recommendations related to the review of future Rate Applications, including issues related to Workers Compensation costs:

Staff conducted a thorough review of the collection, processing, and disposal operations of the Companies, as detailed in Section 8 of the staff report. Staff found that most of the Companies' proposed expenses were accurate and reasonable, and did not recommend adjustments to those line items. However, staff also recommended that the Companies do more to control costs in the areas of health care, pensions and workers' compensation....

Likewise, workers' compensation costs for the combined Companies are projected to increase by 12.1% in RY13 and 7.2% in RY 14 based on actuarial projections and broker estimates. I am concerned about increasing worker's compensation costs and seek assurances from the Companies that their safety programs are effective and that the Companies are doing everything in their power to minimize accidents and injuries associated with worker's compensation costs. Public Works has been able to reduce its Loss Workday Case Rate from 10 to 1 simply by implementing a return-to-work policy and also has reduced its total Recordable Injury Rate from 18 to 8. I understand that the Companies hired a new Safety Director two years ago and are in the process of implementing a number of changes to its safety program. Public Works safety program managers have expressed a strong desire to collaborate with the Companies to determine if there are opportunities for the Companies to undertake some of the actions Public Works has taken to improve its own safety record and reduce workers' compensation costs. I strongly encourage the Companies to undertake such a collaborative effort.

Companies' Response

Recology provided a description of the regulatory changes that have contributed to the increases in workers' compensation costs, which is available in Section L of the Rate Application, "Recology Response to 2013 Director's Report." In response to the Director's Report recommendation, Recology identified the following five measures it has taken to control workers' compensation costs:

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1. Increasing safety staffing and expanding safety education opportunities;
2. Adding an on-site physical therapy clinic;
3. Moving a claims adjuster on-site;
4. Safety immersion training for Temporary Assigned Work (TAW) employees; and
5. The retention of a consultant to design a comprehensive program encompassing the above elements.

OSHA Frequency and Severity Rates

Recology also provided Total Incident Recordable Rates (TIRR) and Days Away Restricted or Transferred (DART) statistics, which are Occupational Safety and Health Administration (OSHA) measures of worker safety (also in Section L of the Final Rate Applications). TIRR is the average number of reportable injuries reported per 100 employees (frequency rate), and DART is measure of severity (severity rate). Recology reported a reduction in both factors from 2012 to 2016 for subsidiary companies (Recology Golden Gate, Recology San Francisco, Recology Sunset Scavenger, and the SF Region as a whole).

Modification Rates

The effectiveness of Recology’s safety program can also be measured by its Experience Modification Factor,⁴ or EMOD. Attachment F provides an historical accounting of Recology’s Modification Factor, which shows improvement over the period.

Table 14: Historical MOD Factors

	2012	2013	2014	2015	2016
Sunset Scavenger	1.731	1.497	1.679	1.720	1.490
Golden Gate	1.370	1.031	0.926	1.038	0.932
Recology SF	1.206	0.854	0.881	0.915	0.715

Source: John Porter, April 3, 2017 email FW: Mod Factors

2.8 Detailed Analysis of Health Insurance Costs

2.8.1 Summary Findings

Projected 2018 Health Insurance reflect average annual cost increases (10%+ per year) that are approximately twice as high as the average annual increases in workers’ compensation costs. While Recology has taken some steps to control costs, except for eliminating the most expensive union health care plan, recent negotiations did not result in any union employee health care contributions or copays,

⁴ The Experience Modification Factor, which is calculated by the National Council on Compensation, provides a means for comparing a company’s safety record to the performance of similar businesses within its industry. A rating of 1.00 is average (Industry Standard); a rating of less than 1.0 is favorable and greater than 1.00 is unfavorable. The Experience Rating Plan places an emphasis on the number (frequency) of claims and, to a lesser extent, the severity of workplace accidents.

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which is not in line with the City's expectation that Recology would aggressively pursue changes to control union health care costs as part of the most recent contract negotiations, as discussed below.

Changes Since the Last Rate Application

While Recology reported that it has made some changes to control health care costs since the last Rate Application, including requiring non-union employees to contribute to vision, dental and medical plans, Health Insurance costs continue to climb at a significant rate. 2018 Projected Health Insurance costs for RSS/RGG and RSF are 47.8% (12% average annual increase), and 41.5% (10.4% average annual increase) higher than the 2014 Actual expenses. Other than reducing the most expensive union health care plan (Health Net), Recology reported that no changes have been made to the Union health care plan since the prior Rate Application. Recology reported, however, that relative to health care inflation, it believes it has done a very respectable job of managing health care costs.

2013 Staff Report Recommendations

The 2013 Staff Report noted that the Companies' health care costs were rising faster than any other major expense and staff is extremely concerned about this trend. The Companies reported that they have implemented changes to the non-union health and benefits to control costs, including increased co-payments and benefit reductions. Union programs are governed by the contractual obligations and program changes are limited under the current collective bargaining agreement. When those agreements are renegotiated, however, it is staff's expectation that the Companies will aggressively pursue changes to union health and benefits to control those costs, including co-payments and benefit reductions like the steps taken to control non-union costs at the Companies and those taken by the City for its own employees.

2.8.2 Historical Cost Analysis

Attachment G provides Actual and Projected Labor line items for RSS/RGG. Attachment H provides a similar accounting for RSF.

2014 Actuals vs. Projection

Both RSS/RGG's and RSF's Actual Health Insurance costs were both lower than projected:

- RSS/RGG's Actual 2014 Health Insurance costs was 12.0% lower than Projected; and
- RSF's Actual 2014 Health Insurance cost was 6.7% lower.

2014 – 2016 Actuals

Moderately high increases in Health Insurance costs were realized in 2015 and 2016:

- RSS/RGG's Health Insurance costs increased by 15.6% (7.8% annual average increase); and
- RSF's Health Insurance costs increased by 12.7% (6.4% annual average).

2017 and 2018 Projections

Both RSS/RGG and RSF are projecting significant increases in Health Insurance costs in 2017 and 2018:

- RSS/RGG is projecting a 27.8% increase in its Health Insurance costs over the next two years (an average annual increase of 13.9%); and
- RSF is projecting a 25.5% increase in its Health Insurance costs over the next two years (an average annual increase of 12.8%).

2018 Projections vs. 2014 Actuals

- RSS/RGG's 2018 Projected expense is almost 50% higher than the 2014 Actual cost (12% average annual increase); and
- RSF's 2018 Projected expense is 41.5% higher than the 2014 Actual cost (10.4% average annual increase).

Recology has identified the cause of increases in health insurance costs for Sunset and Golden Gate to be due an increase in insurance rate (9%) combined with an increase in headcount (6%), and for Recology San Francisco due to an increase in insurance rate (13%) combined with an increase in headcount (3%). Recology stated that reinsurance costs were too insignificant to include the rate application.

2.8.3 2013 Report Recommendations

Director's Report Recommendation

As noted above, the Director recommended examining health benefits specifically during future Rate Applications. Specifically, the Director recommended to:

- Require co-payments when determining what portion of these expenses are appropriate to include in the rate base;
- Consider excluding the health care cost increases above a reasonable amount from the operating ratio;
- Consider requiring employees to make regular contributions for health care coverage; and
- Consider requiring employees to make co-payments for medical visits.

Companies' Response

Union Employees - Recology reported that the healthcare plans offered to the union employees (including copays and benefits) have not changed since the last Rate Application, except for adding any ACA required benefits, and eliminating the most expensive health plan as part of the latest Collective Bargaining Agreement with Local 350. Recology reported that their union contract does not allow it to make changes to the benefits.

Non-Union Employees - Recology stated that employees do contribute to non-union plans. Since the last Rate Application, employee contributions were added for vision and dental (effective 1/1/2014) and medical (effective 1/1/2015). Copayments for non-union plans were changed in 2013 and have not changed since.

Recology also reported that, relative to health care inflation, it believes it has done a good job of managing health care costs.

2.9 Analysis of Proposed Routing Changes

2.9.1 Background on Proposed Routing Changes

Recology is proposing the addition of 23 recycling routes, which Recology represents as being necessary to implement the switch from the current routing configuration wherein the trash (black) and recycling (blue) are co-collected utilizing split-body trucks and the organics (green) are collected in single-chamber body trucks to the proposed new configuration wherein the black and green will be collected in split-body trucks and the blue will be collected in the single-chamber body trucks.

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Recology has represented that the reason for the 23-route increase is due to the limitations in the length of time it will take to collect blue containers via the single-chamber trucks. Recology provided R3 with its detailed analysis of the proposed future routing configuration, which included key assumptions such as:

- The amount of time it takes to service each type of container via each type of truck (which were specifically measured by Recology staff conducting time-and-motion studies in the field in 2016);
- The number of stops that can be collected by each type of route in a normal 8-hour route workday;
- The number of tons of materials that can be collected by each truck; and
- The number of expected tons per day each for trash, recycling and organics.

Recology also described the process by which the above-noted information was used to establish the proposed 23-route increase. That process involved Recology using its routing software (RouteSmart) to build the future routes based on the assumptions noted above, and further informed by the pilot project of the new routing configuration conducted during Summer 2016. The results generated by Route Smart were further reviewed and vetted by Recology staff to ensure that the routes were workable, and considered important information such as geography and the specific waste generating habits of particular neighborhoods.

2.9.2 Analysis of Proposed Routing Changes

The primary variable resulting in the 23 additional routes as presented by Recology (and verified by R3 during our analysis) is the projected time to collect recycling on the single-chamber recycling routes. As presented by Recology, each of the 83 single-chamber recycling routes is projected to collect just over 4 tons of recycling at an average of 8.2 hours per route; given Recology's testimony (and data provided to R3) indicating that the recycling routes could collect up to 6 tons per route, it is clear that time on route, and not truck capacity, is the primary factor affecting the need for 23 additional routes.

At Public Works' request, R3 has conducted an analysis demonstrating the effect that a reduction of one (1) route would have on the cost of labor, overtime, and depreciation. As shown, a reduction of one (1) route could result in savings of approximately \$42,000 per year; however, as noted, this analysis does not include the potential for increases in worker's compensation costs that Recology has indicated could arise with an increase in over-time spent completing routes. R3 does not have information from Recology regarding the potential cost impacts that might result from an increase in worker's compensation costs. This is demonstrated in Table 14, on the following page.

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Table 15: Estimate of Change in Annual Expenses as a Result of Reducing One (1) Single-Chamber Recycling Route

Statistics Provided by Recology	
Proposed Single Chamber Recycling Routes	83
Estimated Average Route Hours Per Day	8.20
Total Average Daily Route Hours	680.60
Reduce by 1 Route	
Single Chamber Recycling Routes	82
Total Average Daily Route Hours	680.60
Estimated Average Route Hours Per Day	8.30
Additional OT Hours Per Route	0.10
Additional OT Hours Per Day	8.2
Cost Per OT Hour	\$ 71
Additional OT Cost Per Day	\$ 579
Additional OT Cost Per Week	\$ 2,895
Additional OT Cost Per Year	\$ 150,562
Cost/Benefit Analysis of Reducing 1 Route	
Increased OT Cost Per Year	\$ 150,562
Decreased Salary and Benefits	\$ (147,926)
Decreased Depreciation (1 truck)	\$ (45,143)
Net Increase (Decrease) in Annual Expenses	\$ (42,507)
Changes in Worker's Compensation Costs	UNKNOWN

3 Revenue Analysis

3.1 Objective

Review the assumptions and calculations used to project revenues by customer category (e.g., residential, apartment, commercial). Compare RY2014 actual revenues to approved RY2014 rate schedule and assess accuracy of projections and assumptions from prior Rate Application (and in particular customer migration assumptions). Identify recommended adjustments to underlying assumptions and projections based on historical review.

3.2 Analysis

3.2.1 Summary Findings

RSS/RGG Rate Revenues

Based on existing service levels, RSS/RGG are projected to generate \$264 million in collection revenue at current rates. A detail of projected revenue at current rates is provided in Schedule F-1 of the Recology Sunset Scavenger and Recology Golden Gate Rate Schedules (Attachment I). As shown, RSS/RGG's revenue accounts for small increases in the number of Residential, Apartment, Commercial and Compactor accounts. Projected increases in the number of accounts is based on the average growth seen over the past few years.

RSF Recyclable Material Sales and Tip Fee Revenues

Based on projected tonnage, RSF is expected to generate \$115 million in tip fee revenue of which \$105 is intercompany revenue from the Collection Companies. The remaining revenue of \$10 million is from third party customers. A detail of projected tipping fees can be found in Schedule F.1 of the Recology San Francisco Rate Schedules (Attachment J).

Under the 2013 Director's Report and Rate Order, a portion of Recology's collection revenues are deposited in a Zero Waste Incentive (ZWI) account, with Recology able to earn those funds to the extent it can meet four tiers of disposal goals. The current application proposes to continue the ZWI program, with several modifications.

Recyclable Commodities

The recycling commodity price assumptions for materials processed at Recycle Central are based on the average of the actual prices received for the previous five years (Attachment K). All market risks (and rewards) for the price variances are borne by RSF. Recycling revenue is calculated based on the projected tons of each commodity, multiplied by the assumed price per ton based on the five-year average for each commodity. Additional beverage container revenue from the Bottle Bill is included in the revenue calculations. CalRecycle is proposing to restructure the Bottle Bill program. Should changes in funding occur, Recology proposes to include any adjustments as part of the annual compensation adjustment⁵

⁵ Source: Summary of Assumptions pg. 16, Section VIII. Revenues.

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Tip Charges

Tip charges for processing, hauling, and disposal of materials delivered by RSS/RGG, as well as other customers, are determined by dividing the total revenue requirement by the total tons. A system-wide tip fee charge is used for all of RSF's operations, including all operations at the Tunnel Avenue facility and Recycle Central.

Intercompany Dirt, Inerts & Other

The amount of revenue projected for Dirt, Inerts & Other is held constant from RY 2016 to RY 2017. As discussed with Recology, in RY 2018 the amount is projected to increase with the inflationary factor, in addition to a \$500,000 increase related to a stewardship contract with a trade group which is under an NDA.

Other Revenue Not Subject to Rate Increase

Not all revenue is subject to the rate increase, however, it is important to also review Recology's other commercial revenues, particularly contract revenues, since these amounts are components of the calculation of Revenue at Current Rates per Application (in RSSRGG Schedule F.1, cell H51), which feeds into the calculation of the Rate Increase (Schedule B.1).

R3 reviewed supporting documentation provided by Recology for its contract revenues, and there is a noted upward trend in this revenue stream for historical and projected values. No changes are necessary, although R3 did note the Final Rate Application's change in the projected contract revenue for RY 2017 (RSS/RGG Schedule F.1 cell F47), in which the estimated RY 2018 amount was used (\$5,895,493) instead of the RY 2017 amount (\$4,726,577) provided in Recology's supporting documentation.

3.2.3 Apartment Migration

Recology is proposing revenues for RSS/RGG that include an assumed reduction of 1% revenue from apartments resulting from migration. This value is calculated in the Final Rate Application as a reduction in forecast revenue of \$641,723 in FY 2018. Recology's net projected revenues from apartments in RY 2018, including the 1% migration assumption, is \$63,530,581.

This 1% reduction is greater than the average 0.2% reduction reported by Recology between FY 2014 and RY 2016. This proposed revenue reduction is due to apartment migration (meaning lower amounts of trash and greater amounts of diversion) is proposed to be driven by new programs and staffing focused on increasing levels of diversion in apartments. If Recology achieves diversion increases / trash reductions because of these efforts, then the City should expect Recology's reported FY 2018 apartment revenues to be at or below \$63,530,581.

4 Corporate Allocation & Profit Analysis

4.1 Objective

Review reasonableness of administrative overhead and intercompany charges allocated to the SF Companies, including the allocation method and derivation thereof, for significant cost categories. Review the “disallowed expenses” identified by Recology in their reconciliation of the General ledger to Schedule D to determine if they are reasonable and appropriate. Review intercompany charges to identify the existence of “double profit” on intercompany transactions, including disposal, processing, and rental costs. Calculate the effective operating ratio (OR) earned for RY2014 through projected RY2017, consistent with the approved methodology, and compare to the allowable OR. Validate that Zero Waste Incentive Funds applied to offset capital investments (primarily at Pier 96) are not included in expenditures for purposes of calculating OR.

4.2 Corporate Allocations Analysis

4.2.1 Summary Findings

Overall “Corporate Services” expenses have increased at a moderate rate since 2014, with RSS/RGG’s 2018 overall Corporate Services expenses projected to be 21.2% higher than its 2014 actual expenses (an approximate 5.3% average annual increase), and RSF’s overall expenses projected to be 5.5% higher (an approximate 1.4% annual increase). Within the Corporate Services category, however, there are several individual expense line items that have increased more dramatically over that four-year timeframe. Specifically, the significant increases include:

- For RSF:
 - IT Services expense has increased by 15.0 percent, or \$99,055 (2018 projected vs. 2014 actual).
- For RSS/RGG:
 - Corporate Management expense has increased by 50.4 percent, or \$649,270 (2018 projected vs. 2014 actual).
 - Environmental Compliance expense has increased by 33.3 percent, or \$151,106 (2018 projected vs. 2014 actual).
 - IT Services expense has increased by 23.1 percent, or \$470,796 (2018 projected vs. 2014 actual).

The Company reported that these costs are driven by rate year 2016 cost allocations, and provided a supplemental schedule showing rate year 2016 costs by department being allocated, the disallowed costs schedule, and the general ledger showing overall department costs. In addition, the Company reported that the increases are primarily due to additional employee headcount to support the operations. (Attachment A, RFI #6, item #1)

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R3 Recommendation – We recommend updating the Corporate Services inflation factor of 3.3% to be consistent with the COLA inflation factor that is used for other expenses in the Application.⁶

Corporate Services Expense Allocations – According to the Company’s “Summary of Assumptions” (page 15 for RSF, and page 10-11 for RSS/RGG), Corporate Services expenses for RY 2017 are allocated as follows:^{7,8}

- Corporate Management – Allocated based on percentage of Recology, Inc’s total revenue.
- Technology – Allocated based on percentage of Recology, Inc’s total revenue.
- Human Resources – Allocated based on percentage of employees relative to total Recology, Inc. employee headcount.
- Corporate Accounting Services – Allocated based on percentage of Recology, Inc’s total revenue.
- Environmental Compliance – Allocated based on percentage of Recology, Inc’s total revenue.
- IT Services – Allocated based on a series of measures that approximate computer usage: the percentage of Recology Inc.’s checks written and customer counts that are attributable to each company.

The Company also reported that RSF is allocated an expense amount from the Recology Commodities Trading Group (i.e., RSF handles a portion of the billing associated with commodity trading). (Attachment A, RFI #6, item #8)

Changes to Allocations Since the Last Rate Application – The allocation methods described above represent no changes since 2013 Rate Application.⁹

Corporate Services Expense Inflation Factor – After the Corporate Services line item expense amounts for RY 2017 are determined using the allocation methods described above, the Company then uses an inflation factor of 3.3% to calculate the projected Corporate Services expenses for RY 2018.

Changes to Inflation Factor Since the Last Rate Application – As part of the 2013 Rate Review, the Company originally included a 3.7% inflation factor for Corporate Services expenses, which was then reduced to 3.4% during the review process, and was further reduced to 3.2% based on review of projected payroll and payroll tax increases using the San Francisco-San Jose-Oakland CPI. We are making a similar recommendation for this rate review, to keep the Corporate Services inflation factor in line with other COLA-type inflation factors used in the Rate Application.

4.2.2 Historical Cost Analysis

Attachment L provides actual and projected “Corporate Services” expense line items for RSS/RGG. Attachment M provides a similar accounting for RSF.

⁶ This correction has also been noted in the “Proposed Post-Filing Changes to Final Application.”

⁷ Recology reported that no changes to “Corporate Services” expense allocations have been made since the previous 2013 rate review. (Attachment A, RFI #6, item #2).

⁸ The Company reported that there are no corporate expenses that are “directly assigned” to RSF or RSS/RGG; rather, all corporate expenses are allocated from the parent company. (Attachment A, RFI #6, item #4).

⁹ Based on comparison of 2013’s Schedule C “Summary of Assumptions” to 2017’s Schedule C “Summary of Assumptions”.

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2014 Actuals vs. Projection

- RSS/RGG's actual overall Corporate Services expenses for 2014 were 9.8% higher than projected for 2014.
- RSF's actual overall Corporate Services expenses for 2014 were 14.8% higher than projected.

2018 Projections vs. 2014 Actuals

- RSS/RGG is projecting a 21.2% increase in its overall Corporate Services expenses for 2018 as compared to 2014 actuals. This represents an approximate 5.3% average annual increase.
- RSF is projecting a 5.5% increase in its overall Corporate Services expenses for 2018 as compared to 2014 actuals. This represents an approximate 1.4% average annual increase.

4.2.3 2013 Recommendations

2013 Director's Report Recommendations

The 2013 Director's Report identified several recommended changes related to Corporate Services expenses. The following individual recommendations are excerpted from the 2013 Director's Report for both RSF and RSS/RGG:

- *"Reduce inflation factor on corporate services expenses from 3.4% to 3.2%"* (page 8 for RSF, and page 9 for RSS/RGG); and
- *"Exclude certain corporate expenses from allocation to SF companies (as corrected)"* (page 8 for RSF, and page 9 for RSS/RGG).

2013 Staff Report Recommendations

The 2013 Director's Report recommendations above are more fully explained by the 2013 Staff Report. Specifically, the following is excerpted from the Staff Report (page 13, Section 8.15 "Management Fees"):

"Recology's draft Application included a corporate inflation factor of 3.7%, which was reduced to 3.4% through the draft Application review process. At that time, staff recommended the inflation factor be further reduced to 3.2% to reflect a 2.2% projected increase in payroll and payroll taxes for RY14 versus Recology's 2.8% projected increase. The 2.2% projected increase recommended by staff is based on the State's 2014 projection of the change in the San Francisco-San Jose-Oakland CPI, which is the benchmark used for calculating indexed adjustments to labor and payroll expenses. Staff recommends setting the Corporate inflation factor to 3.2% versus the Company's 3.4% figure.

Public Works' certified public accountant analyzed allocated Recology corporate costs to assess the appropriateness and reasonableness of allocated corporate charges (Exh. 70). The consultant analyzed the following allocated corporate costs in Exh 1, Sch. D all companies:

- *Corporate Administration*
- *Human Resources*
- *Finance*
- *Information Technology*
- *Environmental Compliance*
- *Sustainability*

Based on this review, the consultant determined that certain Recology corporate costs were improperly allocated to the Companies and therefore recommended a reduction in Recology's allocated cost basis of \$98,151. When allocated to the San Francisco companies, which have an allocation factor of 37.6%, this results in a reduction of \$36,905 to management expenses. Staff concurs with this recommended adjustment."

4.3 Profit Analysis

4.3.1 Summary Findings

Both RSF and RSS/RGG's allowable operating ratio for RY 2018 is set at 91 percent for the purposes of this rate review, and is further reduced to 89 percent¹⁰ as an incentive for achieving high diversion of materials from landfill. Between 2014 and 2017, RSF and RSS/RGG combined achieved operating ratios ranging between 86.7% and 90.8%, which is equivalent to a profit on allowable expenses ranging between 10.1% and 15.4%.

R3 Recommendation – We recommend disallowing all intercompany processing and disposal expenses from the operating ratio / profit calculation, including all organics and green waste processing and disposal expenses.

Expenses Not Subject to Profit Calculation – “Non-allowable” expenses and “pass-through” expenses are not included for purposes of calculating profit using the operating ratio. Non-allowable expenses are costs for which no compensation is allowed as part of the rate adjustment process, and pass-through expenses are costs which are allowed to be recovered through the rate adjustment, but for which no profit is allowed (i.e., these expenses are “passed-through” to ratepayers without profit). Although the Rate Applications do not appear to currently contain any non-allowable expenses, the following costs are designated as pass-through expenses that are not subject to the operating ratio / profit calculation.

- **RSF Pass-Through Expenses**
 - Recology Hay Road / Altamont Disposal
 - Impound Account (through RY 2016 only, zero as of projected RY 2017)
 - License & Permits
- **RSS/RGG Pass-Through Expenses**
 - Disposal Cost
 - Processing Cost
 - Impound Account
 - License Expenses

The Company also reported that certain legal and community outreach costs not considered to be rate-related were not included in the operating ratio / profit calculation, although it is not clear where these costs are represented in the Application. (Attachment A, RFI #6, item #10)

¹⁰ A lower operating ratio translates to a higher profit margin. Specifically, a 91% operating ratio is equal to a 9.9% profit on allowable expenses, and an 89% operating ratio is equal to a 12.4% profit on allowable expenses.

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Changes Since the Last Rate Application – “Licenses and Permits” and “License Expenses” were not previously designated as pass-through expenses in the 2013 Rate Application. We believe that including these expenses as pass-throughs for the 2018 Rate Application is reasonable, and appropriately resolves previous 2013 recommendations related to handling the “Brisbane Tax” as a pass-through expense (this expense is one of several line items included in RSF’s Schedule L.2 “Licenses and Permits”). In addition, it should also be noted that the “Impound Account” is no longer designated as a pass-through expense for RSF, as this amount is zero as of RY 2017 (the Impound Account does, however, continue to be included as a pass-through expense for RSS/RGG).

4.3.2 Historical Operating Ratio Analysis

Attachment N provides an historical overview of the operating ratio achieved by RSF and RSS/RGG, and for both companies combined.

RY 2014 – 2016 Actuals, and RY 2017 Projection

- RSF achieved the following operating ratios between RY 2014 and 2017:
 - 92.9% in RY 2014 (equivalent to 7.7% profit on allowable expenses);
 - 92.2% in RY 2015 (equivalent to 8.4% profit on allowable expenses);
 - 87.9% in RY 2016 (equivalent to 13.8% profit on allowable expenses); and
 - 91.2% projected for RY 2017, based on draft Rate Application (equivalent to 9.6% profit on allowable expenses).
- RSS/RGG achieved the following operating ratios between RY 2014 and 2017:
 - 89.1% in RY 2014 (equivalent to 12.3% profit on allowable expenses);
 - 88.8% in RY 2015 (equivalent to 12.6% profit on allowable expenses);
 - 85.9% in RY 2016 (equivalent to 16.5% profit on allowable expenses); and
 - 90.6% projected for RY 2017, based on draft Rate Application (equivalent to 10.4% profit on allowable expenses).
- As a whole, RSS/RGG and RSF achieved the following operating ratios between RY 2014 and 2017:
 - 90.6% in RY 2014 (equivalent to 10.4% profit on allowable expenses);
 - 90.1% in RY 2015 (equivalent to 10.9% profit on allowable expenses);
 - 86.7% in RY 2016 (equivalent to 15.4% profit on allowable expenses); and
 - 90.8% projected for RY 2017, based on draft Rate Application (equivalent to 10.1% profit on allowable expenses).

4.3.3 2013 Recommendations

The 2013 Director's Report identified several recommendations related to the review of future rate applications, including issues related to calculating the profit and operating ratio. The following quotes are excerpted from the 2013 Director's Report: ¹¹

- *"...The Companies calculate rates based on a 91% operating ratio (an allowed 9.9% profit), with an additional 2% operating ratio available for achieving zero waste goals. It should be noted, however, that the Application contains a number of "pass-through" items upon which the Companies are not allowed to calculate any profit, so their effective profit margin is lower. I consider the proposed operating ratio reasonable and consistent with rates allowed in other jurisdictions (Exh. 66)." (page 1);*
- *"...Staff recommended, and I agree, that the review of future rate applications should consider the reasonableness of overall negotiated pension and health benefits, including requiring co-payments when determining what portion of those expenses are appropriate to include in the rate base. In future rate reviews staff also may consider recommending excluding from the operating ratio the health care cost increases that are above a reasonable amount." (page 7); ¹²*
- *"Disallow operating ratio on Brisbane license fee" (page 8, for RSF); and*
- *"The Companies included a new Brisbane recycling fee of \$2.1 million for RY14 (RSF Sch. L.2 Licenses & Permits) in the Application. At the April 15 hearing (Tr. pp. 13-17), the Companies confirmed that this is the business license tax on large recycling establishments adopted by the Brisbane voters in 2011 and City Council in 2012 (Exhs. 31-32). The Companies believe there is no way to avoid this tax and still provide San Francisco with current and expanded levels of service at the transfer station (located on property that borders both San Francisco and Brisbane). The Companies also verified the tax is treated as an operating ratio expense in the application (Tr. pp. 48-49).*

Staff found that there is little risk that Brisbane voters or the City Council will modify this tax and it has a built-in Consumer Price Index adjustment. Staff agreed that the tax is unavoidable, but recommended it be treated as a pass-through, non-operating ratio expense, as are other business license fees and taxes imposed by other counties (primarily in Alameda).

The Companies argued that there is risk connected to the fee. Furthermore, they argued that, unlike the Alameda County fees, which are the result of a City contract (for landfill services), the Brisbane tax is the result of a business decision made by the Companies, and therefore should be subject to the operating ratio. I find the Companies argument unpersuasive and agree with staff that this is a pass-through cost that should not be subject to the operating ratio. Furthermore, I recommend that in the next full rate process, staff examine whether there are other pass-through expenses which should be excluded from the operating ratio calculation." (page 8) ¹³

¹¹ These recommendations are also echoed by the 2013 Staff Report.

¹² A review of the reasonableness of pension and health care costs as part of this 2017 rate review is included separately as part of R3's expense analysis.

¹³ R3 is currently continuing to examine whether there are other pass-through expenses that should be excluded from the operating ratio calculation as part of our separate expense analysis.

5 Third Party Leases

5.1 Objective

Review third-party leases for reasonableness and for the existence of “double profit” and for consistency with agreed-upon methodologies for intercompany leases.

5.2 Analysis

5.2.1 Review of Third Party Leases in Final Rate Application

R3 has reviewed the leasing information included in the Final Rate Application, as well as supplemental documentation provided by Recology. As specified in the 2006 Director’s Report, page 22, Recology must follow “agreed-upon” methodology for treatment of intercompany leases in the Rate Application:

In future Rate Applications, I recommend that the Companies submit a master list of equipment leases booked for the proposed rate period that includes a description of the equipment items, the lessee company, the capitalized cost of the equipment (purchase price plus miscellaneous freight or installation costs), the lease date inception, the term of the lease, the monthly payments, monthly lease rate, monthly lease interest rate, annual lease interest rate, U.S. Bank Prime Rate at lease inception date, and T-Bill rate (either 5 or 7 year depending on whether it is a 60 or 84 mo. lease) + 200 basis points at lease inception date. An officer of Recology must certify that to the best of his or her knowledge, the leases booked between Alta and the Companies are booked at market comparable rates with zero profit accruing to Alta.

R3 requested this information from Recology in the format noted above, and reviewed the data received, including the certification statement. Per the Leasing Letter signed by Recology Executive Vice President and Chief Financial Officer:

This is to certify that when establishing the financing rates used by Recology Leasing (previously Alta Leasing), the methodology prescribed in the 2006 Director’s Report is utilized and represents market rates at the time the lease is executed with no added profit to Recology Leasing.

To gain a deeper understanding of third party leases as they are reflected in the rate application, R3 discussed the leasing process and lease expense treatment with Recology, which is detailed below.

- At the time a lease is issued, Recology uses the market rate (an analysis is run each month to keep current) and the type of equipment purchased determines the lease term;
- The lease rate at the top of Schedule H.2 is based on the historical average going back to late 2014, and is inclusive of both the principal payment and interest rate. As such, R3 finds the resulting monthly lease rate of 1.33% (16% annual) to be reasonable;
- To simplify the calculation of lease expenses in the rate application, Recology uses a mid-year convention. This is an adequate representation, since Recology continually buys and leases equipment as part of its normal operations, and as part of its business management, plans equipment replacement to avoid large spikes in lease expenses year to year; and
- When a lease expires, the expense of that equipment is no longer on the rates, barring routine maintenance, since its cost has been paid for in prior years.

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5.2.3 2013 Staff Report

The 2013 Staff Report included the following in Section 8.12 Leases:

Staff asked the Companies to change the lease terms for all stationary equipment (Exh. 1, RSF Sch. H.2) from 7 to 10 years to match the assumptions in Exhibit 1, RSF Schedule C, p. 10. Mr. Braslaw confirmed at the April 24 hearing (Tr. pp. 578-580) that the Companies agree to change these lease terms. Staff recommends this change be made in RSF Schedule H.2 for the operating equipment on lines 28 (Automate ph neutralization for Compostables Annex run-off) through 33, 35-36, 38-39 and 44-46. Staff calculates that these changes reduce total operating equipment expenses by \$237,700, from \$1,408,455 to \$1,170,755. Public Works' certified public accountant, an independent auditor engaged by the City, analyzed equipment lease costs for reasonableness (Exh. 70). The consultant found that lease rates charged by Recology's leasing subsidiary, an affiliated company, were at market interest rates. The consultant also found that monthly lease payments were appropriate and recommended no further adjustments to lease expenses.

5.2.4 Summary of Assumptions

R3 has reviewed of Schedule H.2 and supporting documentation, and has determined that Recology has followed the direction of the 2013 Staff Report in respect to lease expenses. See Recology's description of lease expenses in the Rate Application as stated in the Summary of Assumptions, below.

RSF

Capital Expenses

Capital requirements for trucks, equipment, and leasehold improvements are projected over the rate period. Costs are added as equipment is acquired and leased over specified lease years. Generally, lease terms are assigned as follows:

Trucks and rolling equipment:	7 years
Stationary equipment:	10 years
Furniture and fixtures	8 years
Facility improvements:	15 years or shorter

The lease rates are calculated based on the asset lives shown above utilizing an implicit interest rate of 1.7%. The interest rate is reset monthly, based on the cost of Recology Inc.'s capital. RSF believes adequate financing will be available for all capital expenditures from Recology Inc.'s line of credit, lease lines with third party lessors, and/or California Pollution Control Financing Authority financing.

RSS/RGG

Capital Expenses

Capital requirements for trucks, equipment, and leasehold improvements are projected based on the replacement schedule and anticipated facility and program needs. Costs are added as equipment is acquired and leased over specified lease years. Generally, lease terms are assigned as follows:

Trucks and rolling equipment:	7 years
Stationary equipment:	10 years
Facility improvements:	15 years

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The lease rates are calculated based on the asset lives shown above utilizing an implicit interest rate of 1.7%. The interest rate is reset monthly, based on the cost of Recology Inc.'s capital. RSS and RGG believe adequate financing will be available for all capital expenditures from Recology Inc.'s line of credit, lease lines with third party lessors, and/or California Pollution Control Financing Authority financing.

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6 Capital Cost Analysis

6.1 Objective

Identify how Recology proposes to treat new capital costs included in the base rate (e.g., West Wing) and in contingent rate schedules (e.g., iMRF, trash processing). Compare to how other jurisdictions treat new capital costs and when those costs may be included in the rate base (e.g., beneficial use test). Assess how different approaches would affect the timing of when capital costs would be included in the rate base, and the potential impact on allowable costs (e.g., capitalized interest). Describe the basis for the capital cost estimates for proposed infrastructure improvements (i.e., West Wing, iMRF, trash processing) – e.g., approved plans, conceptual design – and provide an assessment of the range of uncertainty of those capital cost estimates given the basis for each improvement.

6.2 Analysis

6.2.1 New Capital Costs as Leases

Recology is proposing to treat new capital costs as leases in the rate application, and has identified three primary reasons for the treatment of these expense items:

- Recology's financiers would not accept the OR as a funding mechanism to approve the needed amount of capital outlay for the West Wing, and recommended the leasing approach as an alternative;
- When the interest rate was low it Recology could tolerably cover this financing cost and treat capital costs as a depreciation expenses, however, based Recology's conversations with its financiers it is anticipated the Recology's historically low interest rate will increase from ~3.5% to ~7%, which has driven Recology to put this expense on the rates.; and
- Recology has historically treated similar capital investments in similarly (i.e., as leases).

Although Recology initially proposed to treat capital costs as depreciation expenses, this approach does not adequately cover costs. Specifically, financing costs on depreciation expenses cannot be passed through on rates, but can be passed on for lease expenses. Financing costs for capital investments are legitimate operating expenses and it is correct that they should be factored into the rates, which is why Recology must now change the handling of these expenses from depreciation to lease expenses. Moreover, depreciation expenses are intended to capture improvements to existing facilities and equipment required as part of routine maintenance, not new investments.

To generate the lease rate for facilities, Recology used the same lease rates included in the Rate Application. These are based on historical numbers, and were used to create the 20-year lease rate for the West Wing and other capital costs proposed in the contingent schedules. It should be noted that amortization is also include in the lease rate, along with interest and principal.

When Recology would begin to make lease payments on the West Wing is not settled, as there is no contract in place yet. On large projects, when payment begins depends on the specific terms of the project. To cover West Wing lease costs in RY 2017 and RY 2018, in the rate application Recology has assumed that payment will begin half way through RY 2017, then factors in the full cost in RY 2018.

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6.2.2 How Other Jurisdictions Treat Capital Costs

Other jurisdictions treat solid waste system capital costs according to the terms of arrangements held with their contractors, or as part of a publicly owned and operated system. Four common options for providing solid waste facilities and accompanying equipment are as follows: 1) operating agreement; 2) publicly owned and operated; 3) public private partnership and 4) build, own, operate, transfer. The following examples of local jurisdictions align most closely with 1) operating agreement.

RethinkWaste

The South Bayside Waste Management Authority (RethinkWaste), a joint powers authority in San Mateo County, undertakes an annual rate review process to cover the cost of service and fees through setting solid waste rates for the next calendar year. Trucks and equipment were first purchased via franchise agreement, and interest on these capital costs is considered a pass-through cost in the yearly compensation adjustment application. RethinkWaste reviews all solid waste expenses, and provides a report to its Member Agencies that shows the obligation for each community. Member Agencies determine what rates adjustments, if any, are needed for their specific community and then initiate the prop. 218 process. Once approved via public process, new rates are effective on or after January 1st of each year.

In addition, RethinkWaste owns a materials recovery facility (MRF) and transfer station, the Shoreway, and contracts with South Bay Recycling (SBR) to operate the facility. A portion of SBWMA's budget is for capital expenditures (Shoreway maintenance and enhancement), and undesignated reserve in the RethinkWaste's annual budget may be used on capital projects. RethinkWaste's budget is factored into the Member Agency rate setting process (described above) as a component of the total waste system revenue requirement Member Agency's use to set their rates.

If capital investment is needed for Shoreway operations, RethinkWaste may allow SBR to invoice RethinkWaste to recoup costs. For example, in 2015 RethinkWaste considered the purchase of new fleet equipment, and if approved, SBR would have invoiced RethinkWaste through its regular monthly invoice process based on a 5-year amortization schedule that coincides with the remaining term of the SBR Operations Agreement (which expires at the end of 2020).

Sunnyvale

The Cities of Sunnyvale, in collaboration with Palo Alto and Mountain View, constructed its own MRF and transfer station (SMaRT Station) and contracts with Bay Counties Waste Services (BCWS) to operate the facility. BCWS receives an annual payment in compensation for operating the facility, and the City may trigger four optional investments in new equipment (e.g., film plastics vacuum removal and compactor system) in the operating contract that would result in an adjustment to the annual payment. Other jurisdictions interested in using the recycling facility it would also share in paying the host fee, land rental and capital distribution costs.

6.2.3 Timing of Inclusion in the Rates

In R3's experience, there are some differences between rate models regarding when capital expenses are included in the rate base. Recology's proposal is to include capital expenses in the rate base in the rate year during which Recology receives permit approval for construction. Given the mid-year convention used by Recology for applying leasing costs to the rates, this means that regardless of when permit approval is received (i.e. early, middle or end of a given rate rate) Recology would include half of the leasing costs in the rate base during that year.

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An alternative rate methodologies/conventions and leasing arrangements could allow for payment of leases – and therefore inclusion of leasing costs in the rate base – only upon beneficial use of the facilities. Via this model, rate payers would not pay for the costs of facilities until those facilities are actively operating within the solid waste management system. R3 has staff has previously been engaged in leasing arrangements for solid waste facilities that allow for periodic payment to contractors during construction, but for which the operator of the facility does not begin making lease payments until the facility has been completed, accepted, and put into operation. It should be noted that such a model may result in slightly increased interest amounts due during the lease compared to an arrangement wherein leasing payments begin earlier in the leasing term; this is because the original principal would be held and accumulating interest in higher amounts for a longer period in the former case as compared to the latter. This can be a relatively small amount in the case of a project with a shorter construction schedule; however, for longer construction schedules, the interest on the original principal amount would be capitalized over a longer period, yielding increased interest due via the subsequent lease payments.

Other rate models commonly used in solid waste collection and processing systems often include the cost of infrastructure into the original rate that is set and charged to rate-payers, often well before new infrastructure and facilities are built and put into service. This is a common approach when public agencies procure for solid waste collection and processing services; proposers to those procurement processes may propose to construct new infrastructure and processing facilities, with the cost of development and construction of those facilities being included in the original propose rates. Via this delivery model, rate-payers being paying the cost of development and construction of new infrastructure well before those facilities become operational. This approach is often needed to ensure that companies can secure the financing they need to commit to developing new infrastructure over what may only be a guaranteed 10 to 20-year contract term. In that sense, this model is not readily applicable to Recology and City, in that limited contract terms are not a limitation currently faced by either party.

If Recology were to push out the starting year of the West Wing capital investment by one (1) year, RSF's leasing costs in RY 2018 would be reduced by \$1,302,000 (and by \$651,000 in projected RY2017, per the mid-year rate convention). This would result in a decrease the Proposed Tipping Charge per Ton in RY 2018, which would reduce the proposed rate increase in RY 2018 (by approximately 0.55%). Additionally, if mid-year convention were used for the leasing costs starting in FY 2019, the amount of needed increase in RY 2019 should be reduced in accordance with the fact that only \$651,000 of the full \$1,302,000 leasing cost would be included in the rate base in that rate year (due to mid-year convention).

6.2.4 Basis of Estimates and Range

During Director's Hearings, Recology provided detailed estimates of the construction costs for West Wing and the two Contingent Schedules for the iMRF and Trash Processing. R3 conducted a cursory review of those costs estimates, as has no additional findings or recommendations regarding those estimates beyond the discussion conducted during the Director's hearings.

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7 COLA Review

7.1 Objective

Recology is proposing slight modification of COLA formula that would roll pension into labor. Determine whether the adjustment for these two items is similar enough to be calculated in this way, or whether they have varied significantly in the past, such that they should be continue to be treated separately. Review prior figures and establish findings and recommendations regarding Recology's proposal for the COLA formula.

7.2 Analysis

7.2.1 2013 Report Recommendations

As reported in Section 9.1 (Cost-of-Living Adjustment Mechanism) of the Director's Report on the 2013 Rate Application:

The City and the Companies established the current cost-of-living adjustment (COLA) mechanism as part of the last Rate Application process to allow recovery of cost increases due to inflation. That mechanism incorporates a weighted COLA formula tied to either known (fixed) cost increases, or published indices such as the Consumer Price Index (CPI), the Producer Price Index (PPI), and a fuel index. The Companies proposed modifying to the current COLA mechanism, primarily by adding a Health and Welfare ("H&W") component. Staff recommended further modifications to more accurately align the weighting of COLA components with the Companies' cost structure. Staff also proposed adding components representing the pension and natural gas expenses.

7.2.2 Summary Findings

This review covers the calculation of these two items:

- Cost of Living Adjustment (COLA) Mechanism – The annual COLA used to adjust rates during Indexed Years; and
- Rate Application CPI Inflation Factor – The consumer price index used to project certain Detailed Base Year expenses.

Current COLA Mechanism

The current COLA mechanism incorporates the recommendations in the 2013 Director's Report, including a specific component for Pension expense. A copy of the July 1, 2016 COLA adjustment calculation is provided in Attachment O, that includes the separate Pension and Natural Gas components of the calculation. Attachment O also includes an alternative calculation for the July 1, 2016 COLA with the percentage change in the Pension expense, set equal to the Labor percentage change, which is one of the changes to the COLA mechanism Recology is proposing. As shown, for the July 1, 2016 COLA calculation if Recology's proposed methodology had been used the RSS/RGG COLA adjustment would have resulted in a higher rate increase of approximately \$523,000 (0.19%) (Cell F53), with the prior Labor (payroll) floor of 3.00%, and \$376,694 higher with current floor of 2.25% (Cell L53). The RSF COLA adjustment would also have resulted in a higher rate increase.

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Copies of the July 1, 2015 and July 1, 2014 adjustment calculations are also provided in Attachment O for historical context.

Recology Proposed COLA Mechanism

Recology proposes to continue to use the COLA formula approved in the 2013 Rate Order with two modifications:

- Adjust the weighting of the cost components to reflect Recology's current cost structure, based on the cumulative costs reported for the quarter ending March 31st of the previous year; and
- Remove the pension component of the COLA calculation as an individual item and incorporate it instead into the variable labor component of the formula.

Recology reported that the proposed modified COLA is designed to ensure that Recology fairly recovers costs that increase after RY 2018 until a new rate is established through another rate proceeding. This annual adjustment will protect both ratepayers and Recology by increasing or decreasing rates in conjunction with economic trends. A COLA mechanism also eliminates the need for Recology to apply for new rates, absent significant new programs, facilities, or changes in costs.

Recology also submitted an Historical COLA Trend (Attachment P), that shows the relationship between the Bay Area CPI and the COLA with the Pension as part of payroll, and with the current COLA with Pension as a separate component. Attachment Q provides Recology's Historical Profit Analysis. As shown, Recology's actual average operating ratio (profit level) for the past three years (Rate Term RY 2014 – RY 2016), was 89.1% versus the target of 89.0% with the Diversion Incentive.

Adjusting the Weighting Factors

As noted above, Recology is proposing the following method for adjusting the COLA weighting factors:

Adjusting the weighting of the cost components to reflect Recology's current cost structure, based on the cumulative costs reported for the quarter ending March 31, of the previous year.

As we understand Recology's proposal, Recology is suggesting to present consolidated costs for both RSS/RGG and RSF rather than break them out separately, and base those costs on the nine months ending March 31st expense data.

The more information is consolidated the less specificity and understanding you have of individual components. In general, we recommend providing more not less specificity, provided the additional specificity has value to the City and the ratepayers, and does not place an unreasonable administrative burden on Recology for the additional benefit that results. In the case of the COLA, because the RSS/RGG and RSF COLA adjustments apply to their respective rates, it seems that maintaining separate COLA adjustments are reasonable, and we see no significant benefit to combining the two as the difference in the time to make separate calculations rather than a single combined would appear to be minimal.

Pension

Attachment R summarizes the COLA mechanism that is included in Recology's Final Rate Application for the Rate Year July 1, 2017 through June 30, 2018. As noted in Attachment R (Section III – Modifications of the COLA):

"Under the current labor agreement, Recology must make an annual minimum fixed payment that is not based on any variable attribute but rather by employee. The Companies do not anticipate material variation in the number of employees, and accordingly, consider pension costs largely fixed in nature."

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Attachment S provides a copy of the Towers Watson Pension Funding Projection prepared in March 2013 as part of the prior Rate Application. As noted on page 1 of that document: “Based on the selected economic scenario, Recology is projected to make an annual contribution of \$25 million each year, from fiscal year ending September 30, 2013 through fiscal year ending September 30, 2019...”

As noted in the “Conclusion” section on page 4:

By contributing \$25 million each fiscal year through fiscal year end 2019, based on the data, assumptions, method, and provisions outline in this letter and attachments, Recology is able to:

- *Meet the plan’s minimum required contributions*
- *Meet union negotiated contribution requirements*
- *Remains above certain key funded status thresholds under PPA*
- *Improve the overall well-being of the pension plan*

Local 3 Pension Funding

Recology reported that its Local 3 Pension obligation, which it estimates accounts for approximately 20% of pension expenses, is not fixed. That cost increased 6.1% in 2015, and 5.8%, and the Company has projected that cost to not change in 2017 and then increase by 6.0% in 2018. If we assume that 20% portion of Recology’s Pension liability increases at 6%, and that the other 80% is “largely fixed”, the overall annual Pension adjustment factor would be 1.2% (20% x 6% = 1.2%), which we suggest is not an unreasonable figure to use as part of the next two COLA adjustments, pending further cost projections. Recology’s historical and projected funding for the Local 3 Pension is detailed below.

Figure 27: Recology Funding of Local 3 Pension

	Actual	Actual	Actual	Actual	Projected
	1/1/14 – 12/31/14	1/1/15 – 12/31/15	1/1/16 – 12/31/16	1/1/17 – 12/31/17	1/1/18 – 12/31/18
Pension	\$ 7.81	\$ 7.81	\$ 7.81	\$ 7.81	\$ 7.81
Annuity	0.70	0.70	0.70	0.70	0.70
Funding Improvement Plan	1.92	2.56	3.20	3.20	3.39
Total	\$ 10.43	\$ 11.07	\$ 11.71	\$ 11.71	\$ 11.90
Funding Improvement Plan Inc. %		6.1%	5.8%	0.0%	6.0%

Source: John Porter, April 6, 2017 email RE: R3-Recology Follow-up Call Discussion Items

We understand one of the Recology’s concerns with the current COLA methodology is the cost to have actuarial projections prepared annually. As noted above, we suggest that fixing the Pension adjustment at 1.2% for the next two COLA adjustments is not unreasonable, based on available data, however, a long term Local 3 Pension Funding Projection should be developed. At the time that information is available, the City and Recology may wish to reconsider the weighting used for the Pension portion of the COLA adjustment as part of future COLA adjustments.

Note: Pension is an existing COLA category, and the change in Pension costs is anticipated to become more of a fixed cost over time, distinct from the annual change in the labor expenses. As such, we see no benefit of putting the Pension cost back into the overall Labor expense bucket. We do, however, suggest that Recology provide the City with updated Pension Funding Projections covering all Pension liabilities as part of all future Rate Applications. That data can serve as a basis for setting the interim year Pension COLA adjustments, rather than conducting annual actuarial projections.

7.2.3 Recommended Annual COLA Calculation

The following is the R3's recommendation for the Annual COLA Calculation methodology:

A. Index Calculation Period

12-month rolling average (March - February).

B. Rounding of Calculated Index Adjustment

Index is set at calculated value rounded to two (2) decimal points (e.g., 2.07 %) – (do not round up to nearest quartile).

C. Pension

Maintain Pension portion of COLA (do not roll into Labor).

D. Weighting of Indices | Separate Weightings for RSS/RGG vs. RSF

- Base weighting of indices on Exhibit D values in Directors Report (i.e., estimated costs of the rate year July 1, 2017 – June 30, 2018, which once approved, the component weights will not change for the duration of the period until a new rate is approved.¹⁴
- Maintain separate index weightings for RSS/RGG and RSF (rather than a single blended weighting).

7.2.4 Rate Application CPI Inflation Factor

The following is R3's recommendation for the Rate Application CPI Inflation Factor methodology:

A. Index Calculation Period

12-month rolling average, (October - September).

B. Averaging of 3-Year and 5-Year Index Calculations

Average of 3-year and 5-year averages to determine CPI adjustment factor.

C. Rounding of Calculated Index Adjustment

Index is set at calculated value rounded to two (2) decimal points (e.g., 2.07%) – (do not round up to nearest quartile).

Using the above methodology results in an annual CPI Inflation Factor of 2.67% versus Recology's calculated 3.00%, which is shown in Attachment T – Revised Rate Year 2017 Rate Application CPI Factor.

¹⁴ Consistent with Attachment 4, Section IV – Calculation of Weights.

8 Rate Structure Analysis

8.1 Objective

Identify significant changes in the proposed rate structure for apartment customers and single family residential customers (i.e., fixed and variable components of typical service charges), and the potential effect of those changes (e.g., differential impact on customers depending on their existing service levels). Assess how the fixed/variable rate structure compares to Recology’s fixed and variable expenses. Conduct limited analysis of “tranches” for single-family, multi-family and commercial rates provided by Recology.

8.2 Analysis of Proposed Rates

Recology is proposing significant changes to its residential rate structure as part of its Rate Application. Recology’s proposed residential rate structure consists of four components:

1. Trash Collection Service Rate (\$/month/32 gallons of container capacity)
2. Recycling Collection Service Rate (\$/month/32 gallons of container capacity)
3. Compost Collection Service Rate (\$/month/32 gallons of container capacity)
4. Dwelling Unit Rate (\$/month/dwelling unit)

As shown in Table 16 below, Recology is proposing a decrease in the current trash rate (-60%), and increases in the recycling, compost, and dwelling rates (153%, 153%, and 288% respectively).

Table 16: Proposed Rate Structure

Service Type	Current Rate	Proposed Rate	Variance (Proposed - Current)	
			\$	%
Trash	\$25.90	\$10.44	(\$15.46)	-59.7%
Recycling	\$2.06	\$5.22	\$3.16	153.3%
Compost	\$2.06	\$5.22	\$3.16	153.3%
Dwelling Units	\$5.16	\$20.00	\$14.84	287.6%

Recology is also proposing a shift in the service subscription levels offered to customers, as follows:

- Customers who currently have 32-gallon or 20-gallon trash containers will be downsized to 16-gallon trash containers;
- Customers whose 32-gallon trash containers are downsized will also have their 32-gallon recycling containers upsized to a 64-gallon recycling container; and
- 96-gallon trash containers will no longer be offered. Customers who currently have 96-gallon trash containers will be downsized to 64-gallon trash containers.

Recology has assumed that 90% of customers will “opt-in” to these service level changes, while the remaining 10% will maintain their current service levels (i.e., “opt-out”).

Table 17, on the following page, shows the effects that the changes described above will have on Recology’s revenue streams. Overall, there will be a 16% increase in residential revenues.

Table 17: Residential Revenue Comparison

Service Type	Current Monthly Revenue	Proposed Monthly Revenue	Variance (Proposed - Current)	
			\$	%
Trash	\$3,656,776	\$1,027,978	(\$2,628,798)	-72.0%
Recycling	\$358,772	\$1,163,931	\$805,159	224.4%
Compost	\$269,761	\$662,470	\$392,709	145.6%
Dwelling Units	\$780,192	\$3,024,000	\$2,243,808	287.6%
Total	\$5,065,500	\$5,878,379	\$812,879	16.0%

Figures 28 and 29 below and on the following page illustrate the distribution of rate impacts among all residential customers.

Figure 28: Customer Rate Impact Distribution (Count of Accounts)

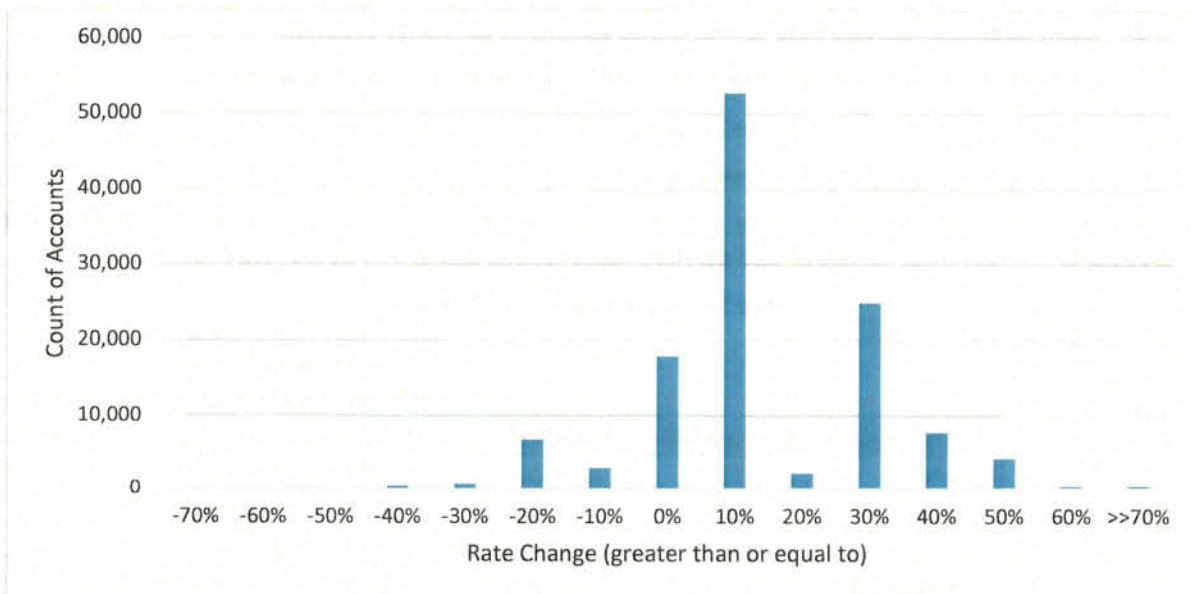


Figure 29: Customer Rate Impact Distributions (Percentage of Accounts)

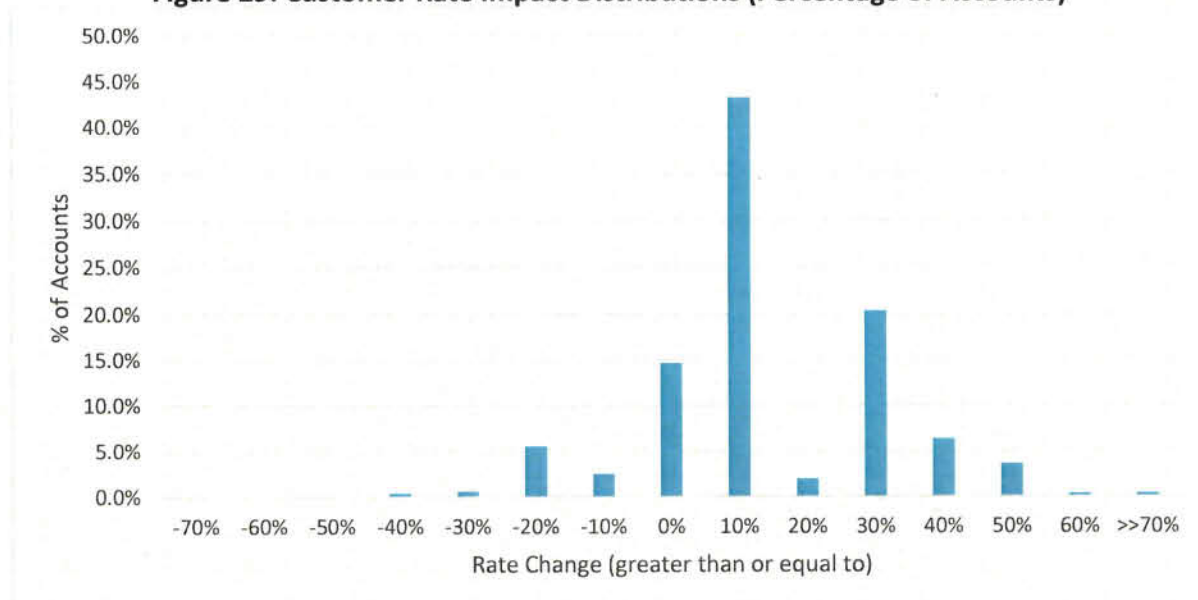


Table 18 below shows the rate impacts to the three most common service subscription levels (service mix)¹⁵, which together make up over 77,000 customers, about 63% of all customers.

Table 18: Rate Impacts to Top 3 Service Mixes

Current Service Mix	Migration Service Mix	Current Monthly Rate	Proposed Monthly Rate	Change in Rate		Count of Accounts	% of All Accounts
				\$	%		
U-1/T-32/R-32/C-32/111	U-1/T-16/R-64/C-32/111	\$35.18	\$40.87	\$5.69	16.2%	43,362	36%
U-1/T-20/R-32/C-32/111	U-1/T-16/R-32/C-32/111	\$25.47	\$35.65	\$10.19	40.0%	22,083	18%
U-1/T-32/R-64/C-32/111	U-1/T-16/R-64/C-32/111	\$37.24	\$40.87	\$3.63	9.8%	11,976	10%

¹⁵ Service mixes are notated as follows: # of dwelling units / trash container size / recycling container size / compost container size / trash container quantity / recycling container quantity / compost container quantity

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While Recology is proposing a 16% increase in residential revenues, over 89,500 customers (about 74%) will experience rate increases greater than 16%. Table 19 below shows the distribution of customer rate impacts along with the most common service mixes¹⁶ within each range.

Table 19: Customer Rate Impact Distribution and Major Service Mixes

Current Service Mix	Migration Service Mix	Count of Accounts	Monthly Dollar Increase	Monthly Percent Increase	% of Accounts within Range	% of All Accounts
11-16.4% Rate Increase						
U-1/T-32/R-32/C-32/111	U-1/T-16/R-32/C-32/111	43362	\$ 5.69	16%	78%	36%
U-1/T-32/R-32/C-32/111	Retain current (opt-out)	4818	\$ 5.69	16%	9%	4%
U-2/T-64/R-64/C-32/111	U-2/T-64/R-64/C-32/111	2034	\$ 8.23	12%	4%	2%
Total		50214	NA	NA	90%	46%
16.4-20% Rate Increase						
U-1/T-32/R-64/C-64/111	U-1/T-16/R-64/C-64/111	2409	\$ 6.79	17%	67%	2%
21-30% Rate Increase						
U-1/T-32/R-64/C-32/111	Retain current (opt-out)	1330	\$ 8.85	24%	37%	1%
U-1/T-32/R-32/C-64/111	U-1/T-16/R-32/C-64/111	819	\$ 8.85	24%	23%	1%
31-40% Rate Increase						
U-1/T-20/R-32/C-32/111	U-1/T-16/R-32/C-32/111	24537	\$ 10.19	40%	93%	20%
41-50% Rate Increase						
U-1/T-20/R-64/C-32/111	U-1/T-16/R-64/C-32/111	2658	\$ 13.35	48%	30%	2%
U-2/T-32/R-32/C-32/111	U-2/T-16/R-32/C-32/111	2439	\$ 20.53	50%	27%	2%
U-2/T-32/R-64/C-32/111	U-2/T-16/R-64/C-32/111	1796	\$ 18.47	44%	20%	1%
> 50% Rate Increase						
U-1/T-20/R-64/C-64/111	U-1/T-16/R-64/C-64/111	556	\$ 16.51	56%	29%	0.5%
Total		36544	NA	NA	NA	30%

8.3 Alternative Rates

R3 modeled alternative rates for the City's consideration which produce a smaller range of rate changes on customers (i.e., fewer extreme outliers). Tables 20 and 21 on the following page show a comparison of rates and revenues within these alternative scenarios.

¹⁶ The specific service mixes shown within Table 18 are those which make up at least 10% of the customers experiencing a rate increase within the indicated range.

Table 20: Alternative Rate Structure Scenarios

	Current	Alternative X.1 33%	Alternative X.2 67%	Proposed
Dwelling Unit Rate	\$5.16	\$10.11	\$15.05	\$20.00
Alternative 1.X: Recycling & Compost = 1/2 of Trash Rate				
Trash	\$25.90	\$15.91	\$13.17	\$10.44
Recycling	\$2.06	\$7.95	\$6.59	\$5.22
Compost	\$2.06	\$7.95	\$6.59	\$5.22
Alternative 2.X: Recycling & Compost = 1/3 of Trash Rate				
Trash		\$20.22	\$16.74	
Recycling		\$6.74	\$5.58	
Compost		\$6.74	\$5.58	

Table 21: Alternative Revenue Scenarios

	Current	Alternative X.1	Alternative X.2	Proposed
Alternative 1.X: Recycling & Compost = 1/2 of Trash Rate				
Trash	\$3,656,776	\$1,566,702	\$1,297,340	\$1,027,978
Recycling	\$358,772	\$1,773,903	\$1,468,917	\$1,163,931
Compost	\$269,761	\$1,009,646	\$836,058	\$662,470
Dwelling Units	\$780,192	\$1,528,128	\$2,276,064	\$3,024,000
Total	\$5,065,500	\$5,878,379	\$5,878,379	\$5,878,379
Alternative 2.X: Recycling & Compost = 1/3 of Trash Rate				
Trash		\$1,991,452	\$1,649,063	
Recycling		\$1,503,218	\$1,244,771	
Compost		\$855,581	\$708,482	
Dwelling Units		\$1,528,128	\$2,276,064	
Total		\$5,878,379	\$5,878,379	

In all scenarios, we assumed that the total proposed revenue would remain constant. The two key variables among these scenarios are:

1. **The Dwelling Unit Rate** – Recology’s proposal included a 288% increase in the per dwelling unit rate. Scenarios X.1 and X.2 assume lesser increases in the dwelling unit rate (33% and 67% of Recology’s proposed increase, respectively).
2. **Recycling and Compost Collection Service Rates** – Recology’s proposal set recycling and compost rates at 50% of the given trash rate. Scenario 2.X assumes recycling and compost rates which are 33.3% of the given trash rate.

Customer Rate Impacts under Alternative Scenarios

Figures 30 and 31 on the following page illustrate the distribution of rate impacts among residential customers under the various scenarios. As shown, while there are some minor shifts in rate impacts under the various scenarios, generally the changes are minimal.

Figure 30: Customer Rate Impact Distribution under Alternative Scenarios (Count of Accounts)

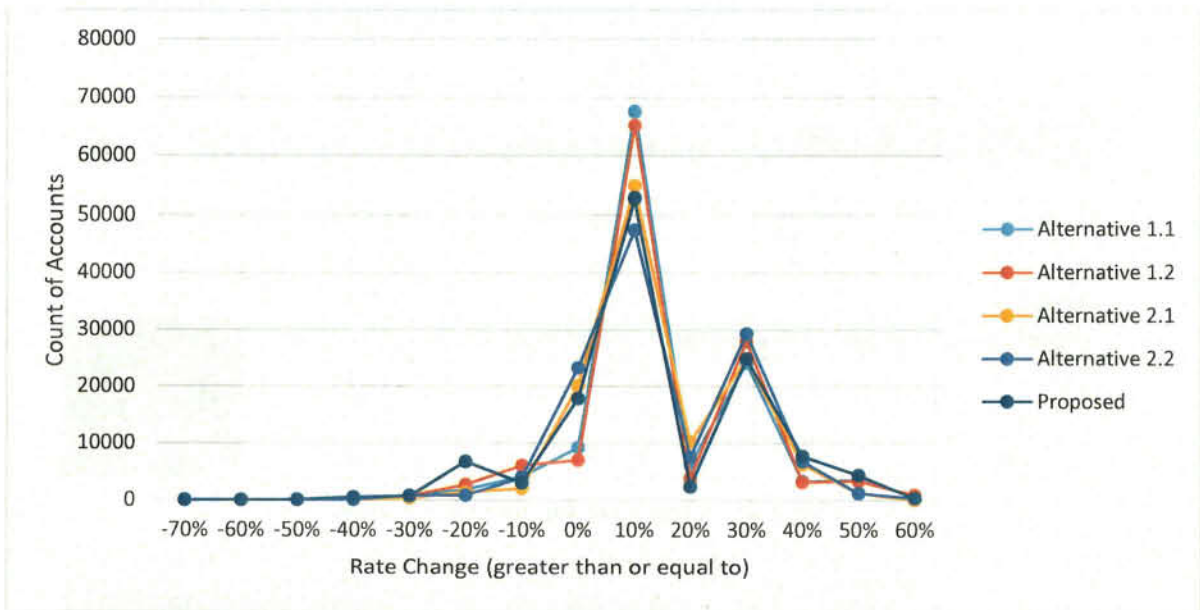
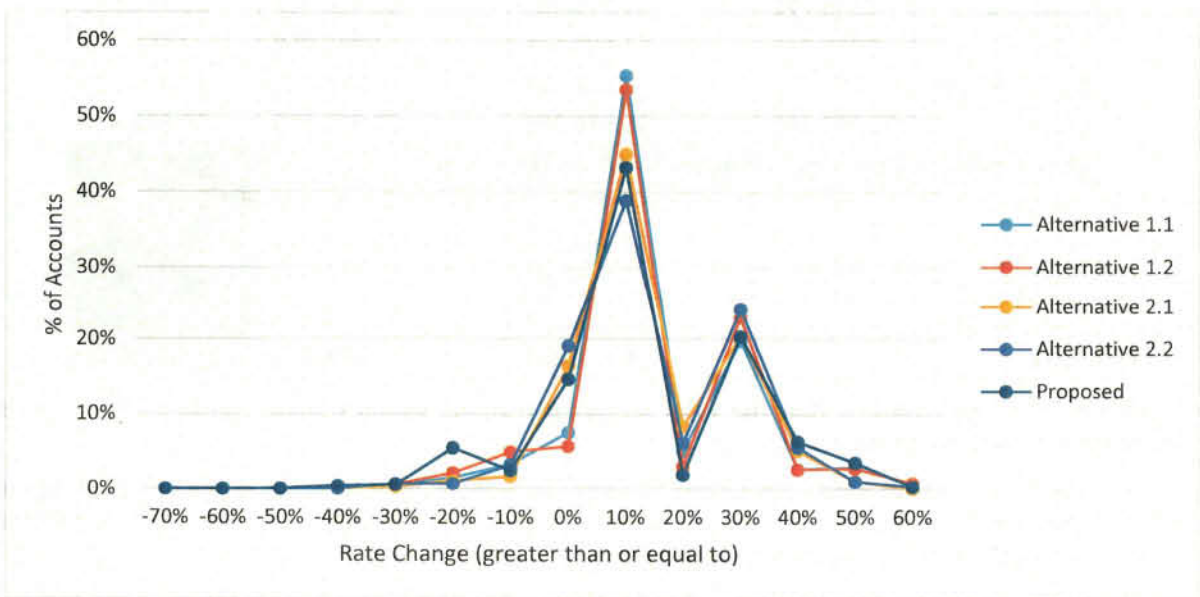


Figure 31: Customer Rate Impact Distribution under Alternative Scenarios (Percent of Accounts)



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Table 22 below shows the rate impacts to the three most common service subscription levels (service mix), under the various scenarios.

Table 22: Rate Impacts to Top 3 Service Mixes under Alternative Scenarios

Current Service Mix	Migration Service Mix	Rate Change (%)					Count of Accounts	% of All Accounts
		Proposed	Alternatives					
			1.1	1.2	2.1	2.2		
U-1/T-32/R-32/C-32/111	U-1/T-16/R-64/C-32/111	16.2%	19.1%	17.7%	14.9%	14.2%	43,362	36%
U-1/T-20/R-32/C-32/111	U-1/T-16/R-32/C-32/111	40.0%	33.4%	36.7%	32.3%	35.8%	22,083	18%
U-1/T-32/R-64/C-32/111	U-1/T-16/R-64/C-32/111	9.8%	12.6%	11.2%	8.6%	7.9%	11,976	10%

Table 23 below shows the distribution of customer rate impacts. Note that while there appears to be a shift in the % of customers experiencing a rate change of greater than versus less than 16% under scenarios 2.1 and 2.2, the actual degree of this shift is not major, as illustrated in Figures 29 and 30. For example, the top service mix in Table 9 would receive a 16.2% rate increase under Recology’s proposed rates, but under scenarios 2.1 and 2.2 would receive a rate increase of 14.9% or 14.2%, respectively.

Table 23: Customer Rate Impact Distribution (% of Total Accounts)

Rate Increase	Proposed	Alternatives			
		1.1	1.2	2.1	2.2
<16%	27%	27%	27%	60%	61%
16-20%	41%	41%	41%	5%	2%
20-30%	2%	5%	3%	8%	6%
30-40%	20%	20%	23%	20%	24%
40-50%	6%	3%	3%	5%	6%
50-60%	4%	3%	3%	1%	1%
≥60%	1%	1%	1%	≈0%	≈0%

Other Scenarios Also Evaluated

During our review of Recology’s proposed rate structure, R3 also evaluated other scenarios including scenarios with a higher ratio of Trash to Recycling/Compost volumetric charges, and a wider range of fixed to variable charges. The results of these additional comparisons were largely like those noted above in this Memorandum, with none of the alternative scenarios substantially reducing the impact to low-waste generating accounts to the satisfaction of R3 and Public Works staff.

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9 Zero Waste Incentives

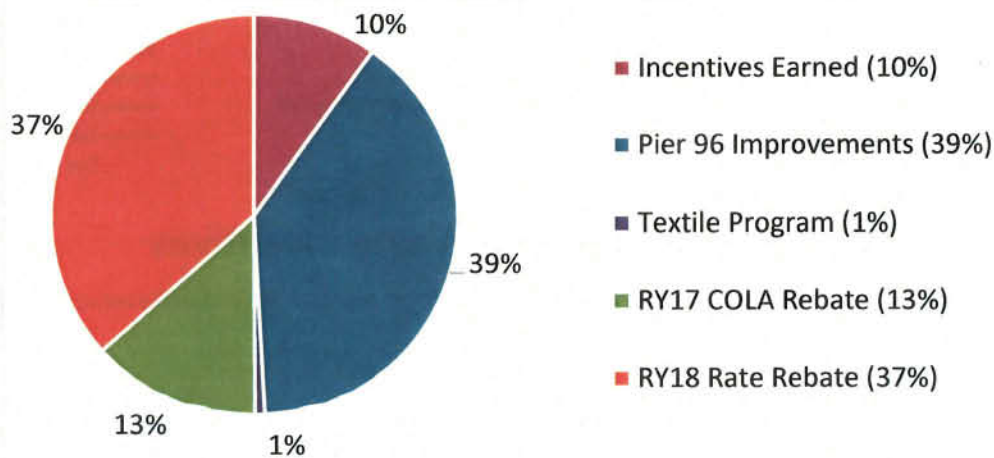
9.1 Objective

Prepare a table of the dollar amounts contributed to the Zero Waste Incentive Fund (ZWIF) since RY2014 (through RY2017) from RSF and RSS/RGG. Prepare a table of actual disposal tons since RY2014 and compare to the Zero Waste Incentive goals established in the prior Rate Application (RY2014-RY2017). Research incentives used in other jurisdictions to promote and reward achievement of diversion goals. Review historical expense tabulations to ensure that redirected ZWIF expenditures are excluded from the base for calculation of operating ratio.

9.2 Analysis

R3 has prepared a chart visualizing the distribution of Zero Waste Incentive Funds from RY 2013 – RY 2017 for Recology San Francisco, Recology Golden Gate, and Recology Sunset Scavenger. A more detailed breakdown of Zero Waste Incentive Fund deposits and distributions is available in Attachment U to this memo.

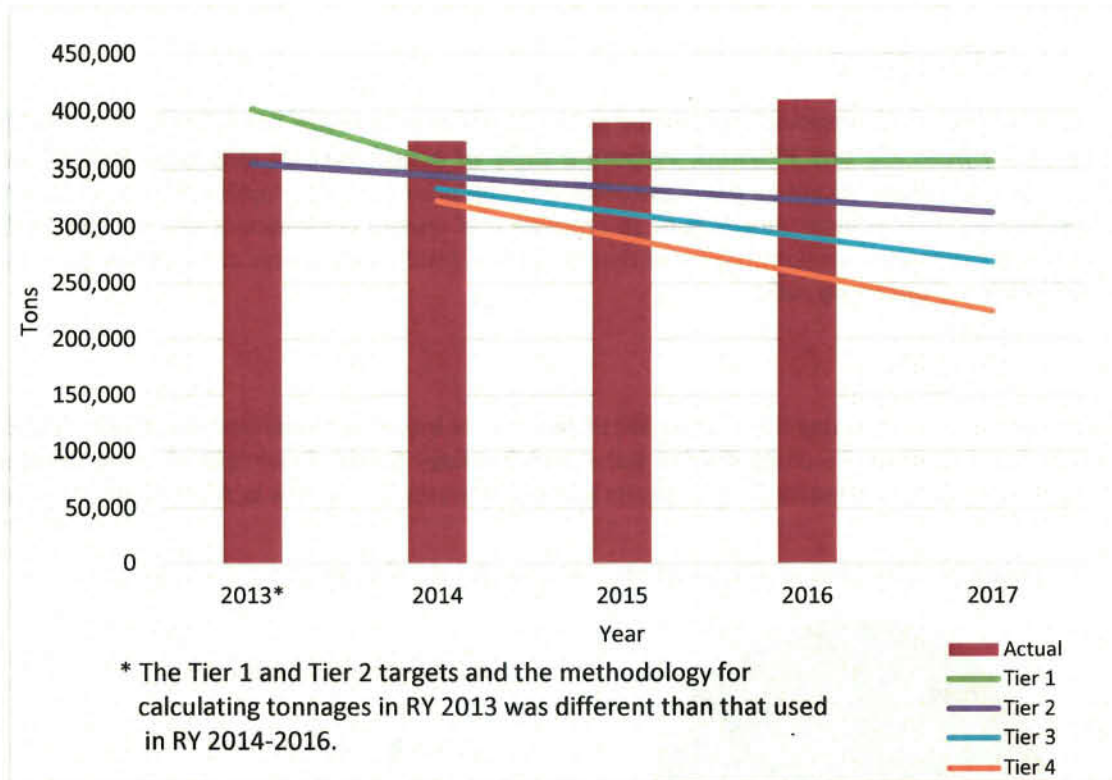
Figure 32: Distribution of Zero Waste Incentive Funds, Rate Years 2013 – 2017



9.2.1 Zero Waste Incentive Tonnage and Goals

R3 has prepared a table of actual disposal tons and Zero Waste Incentive Fund Tiers from RY 2013 – RY 2017 (Attachment V), and a chart summarizing the information provided. No Tier 3 or Tier 4 targets were set in RY 2013. Additionally, the 2013 tiers and the methodology for calculating disposal tonnage differs from that of RY 2014 – 2017. Where tonnages vary, the tonnages provided in the Rate Application were used. In the attachment, RY 2018-2022 tiers are shown as proposed by Recology on the March 28 Director's Hearing.

Figure 33: Zero Waste Incentives Tonnage and Goals



9.3 Research on Other Zero Waste Incentives

Purpose: Research incentives used in other jurisdictions to promote and reward achievement of diversion goals.

9.3.1 Background on Current Zero Waste Goal

In 2002, the San Francisco Commission on the Environment passed a resolution setting a goal of 75% waste diversion by 2010 and zero waste by 2020. The specific methodology for measuring progress toward that goal was not set through that resolution, and as of the Director's Report in 2013, zero waste by 2020 has taken the meaning of 90% of total municipal waste hauled by Recology *not* bound for landfill (although use of material as ADC where no other uses exist for that material is allowed, and counts as diversion). The figure of 90% appears to be based upon waste characterization of the trash stream, with 100% of the divertable material that currently is disposed in the trash allocated instead to diversion.¹⁷

Because the resolution setting the zero waste goal in San Francisco did not specify the method of measurement, staff has the flexibility to set the zero waste tiers, goals, and incentives at their discretion.

¹⁷ Information taken from San Francisco Department of the Environment FAQ page: <https://sfenvironment.org/article/zero-waste-frequently-asked-questions-faqs#zero-waste-is-possible>

9.3.2 Incentivizing Zero Waste

There are several strategies for rewarding (or otherwise incentivizing) contractors for achievement of set diversion or zero waste targets.

Incentive 1. Contract extension opportunity (Cupertino,¹⁸ Santa Rosa)

The City of Santa Rosa Collection Services Contract for 2018 (not executed) allows for one five-year extension for performance under the contract's terms, and an additional five-year extension opportunity contingent upon meeting the diversion goals set in the contract.

Pros: Incentivizing diversion performance in this manner would motivate Recology to perform well in order to continue operations without the need for costly negotiations or procurement process, allowing more time to recoup fixed costs and generate profit. By decoupling the hauler's profits from its diversion performance, this strategy maintains an operating ratio and profit margin that is acceptable to Recology while minimizing direct costs to ratepayers.

Cons: By only allowing a contract extension under a specified set of conditions, this strategy limits a jurisdiction's options for extension with a hauler that is performing well. Moreover, this strategy is not an option for San Francisco, which does not procure for solid waste collection services.

Incentive 2. Recycling Profit-Sharing (SBWMA)

Recycling revenue may be shared between contractor and jurisdiction, as in the South Bayside Waste Management Authority contract with the operator of its Material Recovery Facility (MRF). Depending upon the contractor's diversion performance, the contractor is entitled to retain a given proportion of the revenue related to recyclable material sales on top of their normal compensation.

Pros: Allowing recycling revenue to partially result in additional profit to contractor without accounting for these revenues in contractor's compensation incentivizes the contractor to perform well, while sharing the risk of fluctuating recyclable materials markets between the jurisdiction and the contractor.

Cons: Incentives for effective marketing of recyclable material are less than if contractor retains 100% of revenue.

Incentive 3. Monetary Penalties (CCCSWA, SBWMA, Los Altos, Calabasas, Piedmont, Santa Rosa, Petaluma, Vallejo, Rohnert Park)

Liquidated damages may be assessed of contractors who do not achieve required levels of diversion. As discussed later in this memo, there are several options for calculating required franchised diversion, each with disadvantages and advantages. The Central Contra Costa Waste Management Authority (CCCSWA) can assess liquidated damages of \$50 per ton below the required minimum diversion goal of Republic Services. The South Bayside Waste Management Authority (SBWMA) can assess "disincentive payments" for diversion levels on the SFD and commercial sectors (separately) below specified percentage thresholds. Additionally, disincentives can be assessed for exceeding specified contamination levels in material delivered to the SBWMA-owned MRF. The Cities of Los Altos, Calabasas, Piedmont, Santa Rosa, Petaluma,

¹⁸ Information taken from EPA web page:
<https://archive.epa.gov/region9/mediacenter/web/html/projdesc.html>

Vallejo, and Rohnert Park have the option of assessing liquidated damages or not approving yearly rate increases if their waste hauler fails to meet a specified diversion requirement.

There is also an option for assessing liquidated damages for delivering material to a facility that does not achieve the desired residual levels, or assessing liquidated damages directly on a facility that does not achieve desired residual levels under a contract. CCCSWA can assess liquidated damages of \$100 per ton of excess residual above the residual levels required in its agreement with Republic Services.

Pros: Assessing penalties for failure to achieve diversion performance ties performance directly with profit.

Cons: May be considered harsh, with many outside factors (described in Setting Zero Waste Goals, below) influencing diversion performance.

Incentive 4. Monetary Payout (SF, SBWMA, San Jose, Santa Clara, Elk Grove, Rohnert Park, Sacramento)

San Francisco and SBWMA both provide performance incentives for diversion performance. The City of San Francisco awards Recology San Francisco based on a tiered incentives system, described in detail below. SBWMA awards Recology San Mateo on a per ton basis for tons above a targeted overall diversion level. San Jose's contract hauler(s) receive incentive payments for recycling with tiers tied to a proportion of diversion in SFD.¹⁹ In its non-exclusive Franchise Agreements for Commercial Collection Services, the City of Santa Clara provides for lower franchise fee payments for diversion performance.²⁰ Similarly, the City of Elk Grove applies a franchise fee on a "sliding scale" with lower diversion resulting in a higher franchise fee, and vice versa. In its Non-Exclusive Franchise Agreement for C&D debris, the City of Rohnert Park applies a higher franchise fee if the hauler does not meet minimum diversion standards. Sacramento Waste Agency may waive part of the franchise fee owed to the Agency for diversion above requirements and/or subsidizing diversion infrastructure.

Pros: Rewarding contractors for diversion performance ties performance directly with profit.

Cons: Rates should be set at cost of service under state law. Any additional profit allowed to solid waste contractor is at ratepayer's expense. Calculating incentive payments on a per ton basis based upon percentage diversion targets can become complicated, and communication with the public about these calculations may be challenging.

While the above options may work for some jurisdictions, R3 recommends that San Francisco continue to provide monetary incentives to Recology (Incentive 4). However, the City has discretion in setting goals and tiers associated with incentives.

9.3.3 Setting Zero Waste Goals

There are a few ways of calculating progress toward diversion goals, on a percentage basis:

Goal Method 1. Tons that are sent to recycling or composting facilities rather than landfill.

¹⁹ Information derived from EPA web page: <https://www.epa.gov/transforming-waste-tool/zero-waste-case-study-san-jose-ca>

²⁰ Non-Exclusive Franchise Agreement available at: <http://santaclaraca.gov/Home/ShowDocument?id=41540>

Advantage: This goal adjusts automatically with fluctuations in inbound tonnages, and allows contractor greater control over diversion (for example, mixed waste can be processed to bring up diversion).

Disadvantage: Total waste generation, including waste to landfill, may go up despite meeting diversion goals set in this manner.

Goal Method 2. Tons that ultimately are recovered from the material sent to recycling or composting facilities, as a proportion of the total tons that are generated.

Advantage: This goal improves upon Goal Method 1 by also accounting for residual tons, which otherwise would need to be controlled separately. It adjusts automatically with fluctuations in inbound tonnages.

Disadvantage: In addition to the disadvantages listed above, conflating residual tons to disposed tons may shift incentives around disposal and residual control, resulting in less incentive to control processing residual or contamination. Specifically, incentives toward reducing residual may be lessened, as overall residual tonnages tend to be significantly lower than trash tons, and therefore would exert a proportionately smaller influence over the diversion figure.

Goal Method 3. Proportion of trash that could have been diverted, if sorted properly.

Advantage: Targets customer behavior and proper source-separation. This goal adjusts automatically with fluctuations in inbound tonnages.

Disadvantage: Does not directly target material that is not considered “recyclable” or “compostable.” Requires regular waste characterization studies, which may be time- and capital-intensive.

Goal Method 4. Proportion of trash generated, as compared to a baseline year.

Advantage: This is a practical approach to reducing landfilled trash, and aligns with CalRecycle measurement of the 50% and 75% disposal reduction goals (CalRecycle also includes an adjustment for population and employment, as described below).

Disadvantage: Does not directly measure recycling and composting activity, although these activities will contribute to the reduction of landfilled tons. Selecting an appropriate baseline year may be challenging.

There are many variations on these goals, described below.

Variation 1. Each of these three options are available to be measured on a franchised tonnage basis, or by jurisdiction based on disposal reports submitted by facilities (which may encompass more material than is directly handled by the franchised hauler, such as C&D debris).

Advantage: Recycling and organics tonnages are available and measured on the same basis as trash tons, whereas the facility-based data submitted to CalRecycle does not currently include recycling and organics tonnages. Also, when setting a zero waste goal that will be used to gauge a franchised hauler’s effort and may be pinned to incentives, using only the tonnages that the hauler “touches” is fair and appropriate.

Disadvantage: Franchised material is *not* the only trash that is generated by a municipality. By excluding non-franchised material, the City is unable to leverage the contractor’s resources in promoting diversion even in non-franchised material. This disadvantage can be mitigated by 1) expanding the franchise to include all material generated within a municipality, within reasonable

limits; or 2) developing robust alternative programs through City departments to enforce diversion requirements on non-franchised material.

Variation 2. Zero waste goals may then be set directly on the above measurement methods (for example, the 75% goal set for 2010), or pinned to a specified trash tonnage target that represents the desired diversion goal. “Pinning” diversion proportions to specified trash tonnage targets has some advantages and disadvantages:

Advantage: The core definition of zero waste is reducing tons to landfill to zero. Setting a goal that is associated with specific trash tonnages incentivizes strategies that directly affect the amount of trash sent to landfill, such as producer responsibility, product bans, and other similar strategies. These strategies are less directly effective when diversion goals are set as a proportion of total tons, where fluctuations in diversion tonnages play a more powerful role in increasing or decreasing diversion than relatively slight changes in disposed material.

Disadvantage: There will be fluctuations in trash tonnages that are outside of the control of the municipality and franchised hauler. Changes in population, construction and demolition, and other economic fluctuations or environmental conditions can strongly affect the tons of trash generated by a municipality. Because a tonnage goal (and tiers) must be set based on some diversion proportion, and that diversion proportion *does* adjust automatically as overall tonnage increases due to outside factors, setting goals for trash tonnage creates exposure that would be lessened by retaining the proportional allocations that the tonnage goals are based upon.

Variation 3. A way that tonnage goals can be used while still adjusting for outside factors is by generating a goal that includes some metric that measures those outside factors, such as population (as in CalRecycle’s “pounds per person per day”) economic growth (gross domestic product, number of building permits issued, or CalRecycle’s “pounds per employee per day”), drought conditions (inches of rainfall per year; drought may reduce organics tonnages), or another metric.

Advantage: Adjusting using another factor allows trash tonnages to remain relevant even with other fluctuations affecting overall waste generation.

Disadvantage: Selecting the most appropriate metric may be challenging. Selecting multiple metrics may make setting goals and incentives more logistically difficult, but one metric does not realistically encompass the many factors that may influence trash generation. Describing such goals to the public becomes more complicated as the number of additional metrics goes up.

Example: CalRecycle Diversion Rate

CalRecycle’s diversion rate is calculated based on a combination of the elements described above. The AB 939 diversion goal of 50% (through subsequent legislation) was pinned to the average of 2003 through 2006 tons generated within a jurisdiction (not just franchised tons), divided by either population or employment figures. 50% diversion is therefore 50% diversion of trash generated by residents or persons employed in a jurisdiction, from 2003 – 2006 levels.

10 Recommendations for Enhanced Reporting

In R3's review of the Draft and Final Rate Applications, we have identified a set of analyses that we recommend be refined for consideration as supplemental requirements for future Rate Applications. At this time, this is a rough and running list that R3 intends to finalize in conjunction with Public Works and Recology staff after completion of the current Rate Application.

1. 5-year variance (Actual to Projected);
2. 5-year Profit Analysis (as part of Rate Applications and Financial Statements);
3. Tonnage Variance;
4. Migration Analysis;
5. Safety Modification Factors and TIRR / DART rates vs. industry standard and corporate standard;
6. Comparative Schedule D – Total Operating Expenses (Variance Analysis and Explanations for Significant Variances);
7. Explanations for all significant variances with the impact of inflation separately identified from the impact of any changes to corporate allocation factors or any other changes, with applicable support as appropriate;
8. Explanation for any changes in tracking of actual expenses by Line item (e.g., Table 10 – 2013 Capital Charges of \$8+MM that category is removed in 2014 and 2015 (Make adjustments to provide comparative variance analysis);
9. Explanations for all significant variances, with the impact of inflation or changes in other unit cost factors separately identified from the impact of changes in FTE employees, with applicable support as appropriate;
10. Supporting documentation for the projected Pension expense (e.g., copy of funding requirement specified in Collective Bargaining Agreement);
11. Discussion of any changes to the methods used to allocate or otherwise project Pension expenses from those of the prior Rate Application. If there have been no changes positively indicate as such;
12. Discussion of any changes to the allocation of Corporate Services expenses or other intercompany transactions since the previous Rate Application. If no changes positively indicate.
13. Discussion of any changes to the expenses which are designated as “pass-through” or “non-allowable” for purposes of the operating ratio calculation. If no changes positively indicate;
14. Annual Report tables should in all cases include RY on all tables;
15. Maintain order of line items in Annual Report Tables (Table 10 – Human Resources);
16. Financial statements should have supplemental schedules with Rate Application line item expenses and profit calculation per Rate Application calculation;
17. All analyses and Annual Report tables should be made available to the City in Excel format;
18. Updated accounting of projected Pension included in the rate base versus actual Pension cost contributions. This should include similar data for the period covered by the prior Rate Application so that there is an extended historical record.

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19. Discussion of any changes to the methods used to allocate or otherwise project Worker Compensation expenses from those of the prior Rate Application. If there have been no changes positively indicate as such.
20. Supporting documents for the projected Workers Compensation Costs (e.g., third party projections).
21. Updated accounting of historical TIRR and DART Rates and Modification Factors. This should include similar data for the period covered by the prior Rate Application so that there is an extended historical record.
22. Discussion of any changes to the methods used to allocate or otherwise project Health Insurance expenses from those of the prior Rate Application. If there have been no changes positively indicate as such.
23. Supporting documentation for the projected Health Insurance expense (e.g., third party supporting documentation for Schedule G-3 Monthly Rates and other factors used to calculate projected costs).

11 Attachments

- Attachment A RFI's #1 through #6
- Attachment B Pension Analysis RSS/RGG
- Attachment C Pension Analysis RSF
- Attachment D Workers Comp Analysis RSS/RGG
- Attachment E Workers Comp Analysis RSF
- Attachment F Historical Modification Factors
- Attachment G Health Insurance Analysis RSS/RGG
- Attachment H Health Insurance Analysis RSF
- Attachment I Schedule F.1 – Historical and Projected Revenues RSS/RGG
- Attachment J Schedule F.1 – Historical and Projected Revenues RSF
- Attachment K Schedule F.3 – Recycling Revenues RSF
- Attachment L Corporate Allocations RSS/RGG
- Attachment M Corporate Allocations RSF
- Attachment N Operating Ratio Overview
- Attachment O COLA Calculation RY 2017 and Historical
- Attachment P Recology Exhibit of COLA Trend (Refer to Rate Application Exhibit #46)
- Attachment Q Historical Profit Analysis
- Attachment R Armanino Memo of Proposed COLA Mechanism
- Attachment S Towers Watson Pension Funding Projection prepared in March 2013
- Attachment T Revised Rate Year 2017 Rate Application CPI Factor
- Attachment U Zero Waste Incentive Fund Historical Distributions
- Attachment V Zero Waste Incentive Tonnages and Goals

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