Development of a Phased 5-Year Organics Rate Structure, Service Migration Predictions, and Revenue Impacts of a Fully Implemented SB 1383 Organics Program

Submitted on April 4, 2025, by EcoNomics, Inc.

Table of Contents

List of Tables

List of Figures

List of Appendices

1 Project Background and Objectives

1.1 General Overview of Senate Bill 1383

In 2016, the California state legislature passed Senate Bill 1383 (SB 1383): California's Short-Lived Climate Pollutants Reduction Law. This legislation is intended to reduce greenhouse gas emissions in California through diversion of organic waste materials from landfills. Definitions of organics were finalized by CalRecycle in November 2020 and included: yard trimmings, food scraps, food-soiled paper and fibers. SB 1383 requires all commercial businesses, multi-family and single-family residences to separate their waste into 3 streams: municipal solid waste (MSW), organics, and recyclables on or before January 2022. Jurisdictions that do not comply with these organic waste diversion requirements may face fines of up to $10,000 per day. SB 1383 also requires all jurisdictions to adopt a local ordinance that mandates businesses, multi-family properties, and residents to implement a 3-container collection program or face administrative penalties. The City incorporated these mandatory recycling requirements into Section 5.61 of its municipal code in January 2022.

1.2 City's SB 1383 Implementation Progress

The City recently amended its contract agreement with Napa Recycling and Waste Services (NRWS) to incorporate the programmatic and reporting requirements of SB 1383. Following a 5-year pilot commercial collection program, in 2015 the City of Napa began offering source-separated food scrap collection to businesses at a cost of 75% the cost of equivalent MSW service. This reduced rate for food scraps, when compared to equivalent MSW service, offers businesses a rate incentive to comply with the organic-waste diversion mandates. The food scrap rate incentivization level was the result of extensive analysis conducted by Economics, Inc. in 2014 and presented to the City Council in March 2015. The rate incentive was developed to ensure the program was financially sustainable and that the food scrap rate generated sufficient revenue to cover the collection and processing costs of the program. As of Jan 1, 2025, there are approximately 292 commercial accounts that subscribe to commercial food scrap collection service. The City's contract hauler, NRWS has provided businesses and multi-family properties yard trimming recycling programs at no charge since the current collection contract has been effective. To become fully compliant with SB 1383, a total of 60 commercial and multi-family accounts need to implement food scraps; an additional 88 multi-family accounts that currently have yard waste service will need to also implement a food scrap recycling program. Multi-family customers that subscribe to commercial collection service (i.e. have a centralized collection area for MSW, recycling, and/or organics as opposed to individual carts for each housing unit) must also have organics recycling service per SB 1383. Of the 123 multi-family properties in the City with commercial collection service, 109 have organics recycling service (88.6%), which includes food scraps and/or yard trimmings. SB 1383 requires all commercial and multi-family properties to have 3-container collection service, therefore the City needs to implement additional organics recycling programs at both commercial and multi-family properties to attain full compliance with SB 1383.

1.3 SB 619 Notice of Intent to Comply

In February of 2022 the City of Napa submitted a Notification of Intent to Comply (NOIC) to CalRecycle. The NOIC process, which was authorized by Senate Bill 619, allows jurisdictions to seek delays in enforcement of elements of SB 1383. Via the SB 619 NOIC process, the City requested, and was granted, conditional relief from CalRecycle enforcement surrounding the requirement that all multi-family properties have organics recycling collection service (including food scraps, fiber materials, and yard trimmings) by January 1, 2022. As part of the NOIC process, CalRecycle, in close coordination with the City, developed a Corrective Action Plan (CAP) that provided a pathway for the City to attain full multi-family organics recycling compliance by 2026. The CAP provided the City additional time for multi-family and commercial generators to successfully participate in the expanded and enhanced collection programs that comply with SB 1383. Implementing organics recycling at multi-family properties presents a unique set of challenges, including limitations on space in existing trash enclosures needed to house additional containers to collect food scraps and yard trimmings, high turnover among residents, multiple languages being spoken by residents, frequent trash overages during move-in and move-out periods due to the disposal of unwanted bulky items by outgoing tenants, and property managers that are wary of adjusting service levels to incorporate organics recycling service. In recognition of these challenges, the execution of the CAP focused on providing extensive technical assistance to the waste generators to capture and recover the maximum amount of organic materials targeted by SB 1383 while also minimizing contamination.

1.4 2023-2024 Commercial Co-collected Compostable Rate Study

In 2023, the City of Napa commissioned a rate study to identify the optimal rate to charge for co-collected commercial compostables collection service (including yard trimmings and food scraps). The City retained EcoNomics, Inc. to review the current SB 1383 compliance status of all commercial accounts, determine the costs and operational effects of full compliance, develop pacing scenarios as any businesses moved towards the necessary food scraps and yard trimmings collection scenarios to comply with SB 1383 over time, and provide a cost impact analysis to develop a rate for commercial co-collected compostables collection (food scraps and yard trimmings). As compliance with SB 1383 is attained and all businesses and multi-family properties implement the requisite compostable programs, EcoNomics projected adjustments to the volume of total materials collected, as well as needed operational and capital cost changes needed to accommodate an expanded commercial compostable route, to create a preliminary cost recovery rate. EcoNomics also modeled scenarios to develop a rate for highly contaminated commercial and multi-family food scraps collection by processing these materials through the City's depackaging equipment. This report was submitted to the City on January 26, 2024 and is titled: Projecting Collection Cost Impacts for Full SB 1383 Implementation: A Rate Study to Develop Revenue and Cost Impacts of a Clean Compostables and Packaged Organics Route. The complete report is included as Appendix 1. The results of the study were reviewed by City staff and it was determined that the recommended cost-recovery rate for commercial yard trimmings be 'phased-in' over a five-year period to reduce financial impacts on current customers that have been receiving yard trimmings service at no charge since the contract

became effective. The rate study found that a cost-recovery rate could be offered to commercial food scrap customers at a lower cost than the current rate of 75% of equivalent MSW service. To ensure stability in rate revenue receipts from current commercial food scrap customers, the City directed EcoNomics to study the rate impacts of phasing the cost recovery rate for food scraps in over a 5-year period. The City also requested that EcoNomics determine the operational, capital, and rate impacts of container migration for customers with large numbers of yard trimmings and food scrap carts who may benefit from the use of a single 1 or 2-yard bin to collect these materials, provided it is operationally feasible to do so. The 2025 study builds off of the findings of the 2024 report, including the projected revenue and cost impacts of projected full SB 1383 compliance levels, and includes recommendations from the original 2024 rate study.

In summary, the following key factors influenced the development of the new rate model and were included in the 2025 study:

- Updating the calculation of collection cost payments to identify the cost per lift value and distribute this value across all generators for cost recovery
- The exclusion of the packaged organics route until the program is refined at a later date.
- Modeling the migration of service levels from multiple carts to fewer bins because of increased costs per services as the rate becomes implemented over a 5-year period.
- Direct field research analysis of cart weights used to improve the accuracy of specific density values.
- Maintaining separate routes for yard trimmings and food scraps until year 5.

Incorporating the above elements into the 2025 rate study required extensive additional analysis of the commercial customer base to develop service projections and model cart-to-bin migration scenarios. This analysis was coupled with field data collection to refine key assumptions, including density, and to refine service projections based on actual customer volume allocations.

1.5 2025 Rate Study Objectives

The objective of 2025 rate study is to identify the optimal, cost-recovery rate to charge for commercial and multi-family food scraps and yard trimmings collection service and to determine the impact of charging these rates on the Cities overall solid waste fund. The commercial rates were developed in alignment with the following criteria:

- Develop a financially sustainable rate that generates sufficient rate revenue to cover the collection and processing costs of the commercial and multifamily food scraps and yard trimmings programs
- Continue to provide a rate incentive (i.e. the rate for compostable collection is less than equivalent MSW collection rate) to businesses and multi-family properties that

allows them to incorporate new compostable collection service that is required to comply with SB 1383 without increasing overall trash bills

- Provide a fair rate for existing yard trimmings customers (that have historically received this service at no charge) whose yard trimmings collection costs will **increase** when it is provided at a charge
- Provide a fair rate for existing commercial food scrap customers (that have received this service at 75% the charge of equivalent MSW service since 2015) whose food scrap collection costs may **decrease** when it is provided at the optimally incentivized level
- Provide a clear nexus between the cost of providing the service and the rate charged to the customers

Per the City's direction, EcoNomics has developed a revised commercial compostable rate model that aligns with the above criteria that includes a five-year phase-in period for implementation. During this five-year period, commercial yard trimmings and food scraps will be provided at different rates until the rates converge at the end of the five-year phase-in period. At this point, customers will be able to co-collect their food scraps and yard trimmings into the same container, if desired. The rate was developed to ensure cost recovery by the City (i.e. the cost of providing the service to the customers is equivalent to the rate) and is designed to provide adequate compensation to NRWS for the operational impacts and equipment capitalization required to expand the food scraps and yard trimmings routes to attain full SB 1383 compliance, while providing the most economical container sizes and collection services for commercial food scraps and yard trimmings customers. The 5-year timeline of the rate structure developed in this report allows for a rate which is:

a) matched against the needed capital expenditures to acquire all the bins needed to "right-size" the collection of compostables;

b) matched to expenditures for the acquisition of bin liners that will be paired with the replacement of carts with bins;

c) matches the timing of rate increases to the actual 5-year deployment schedule of the identified bins and carts and;

d) structured to optimize scenarios on the overall impact on rate revenues due to charging for Yard Trimmings and the reduction of Food Scrap rate revenue.

2 Findings

2.1 Summary of Key Findings

EcoNomics, Inc. has completed the analysis for the City of Napa's phased 5-year commercial compostable rate structure. This report presents the detailed findings, which are aligned with the objectives of balancing capital expenditures, operational costs, and compliance with SB 1383 requirements while providing a cost-recovery rate. In addition, recommendations for balancing the City's Materials Diversion fund can be found in the conclusion and recommendations section. The analyses validate the assumptions, quantify impacts on rates and revenues, and propose actionable recommendations for phased implementation.

Key findings of the study include:

- **5-year commercial rates for commercial and multifamily yard trimmings and commercial and multifamily food scraps**: Recommended rate tables for commercial and multifamily food scraps and commercial yard trimmings for rate years 1 (effective July 1, 2025) through 5 (effective January 1, 2029). The rates for the commercial food scraps and yard trimmings service were developed to ensure full cost recovery for the City and factor in projected cart-to-bin migration costs for properties where such a migration was operationally feasible and where an economic rate incentive exists to switch from many carts to a single bin. Projected rates also include full SB 1383 compliance by 2026. Changes in collection cost payments to NRWS, rate revenue, capital costs, operational costs and processing costs for the most likely migration scenario are included in the cost-recovery rate.

- **Net cost and revenue impacts to City's solid waste fund**: A summary table showing the total net financial impact on the City's solid waste fund that includes projected changes in rate revenue based on full SB 1383 compliance and projected cart-to-bin migration, changes in processing costs based on an expanded compostable collection route, reductions in disposal costs based on landfill diversion from expanded commercial compostables, increases in capital costs for the deployment of lined bins for food scraps, changes in collection costs paid to NRWS based on adjustments to services, and increased labor costs for expanded routes.

- **An optimized cart-to-bin migration plan**. The study includes a listing of customers that currently have high volumes of cart service that may benefit financially from implementing bin service. The City and NRWS can target these accounts to assist in implementing bin service and, where operationally feasible, may be able to reduce collection costs to the City and disposal costs to the generator.

- **Capital cost projections for container and vehicle acquisition and deployment**. The study includes a schedule of when capital acquisition of bins is likely to occur based on projected migration from carts to bins. The City can use this to plan for capital expenditures and include in future budgets. It also includes the addition of a side loader vehicle, its driver, and associated operational costs.

- **Right Sizing of Yard Trimmings Service** The offering of yard trimmings collection service at no charge likely led to the acquisition of more cubic yards of yard trimmings service than likely is needed by the customers. This study estimates a reduction of yard trimmings service at 10% of their total cubic yardage each year to reflect 1) customers 'right-sizing' their service to match actual yard trimmings generation volume and 2) a portion of customers arranging with their landscaping contractor to haul-away yard trimmings instead of making use of onsite disposal through NRWS.
- **Packaged food scrap rates** The report includes cost-recovery rates for packaged organics collection service for generators who have high levels of cross-contaminants (i.e. non-compostable materials such as plastic) in their food scrap streams.

2.2 5-year Phased-in Rate for Commercial and Multifamily Yard Trimmings Service

Effective July 1, 2025, yard trimmings will no longer be offered at no charge to commercial and multifamily customers. To develop a cost-recovery rate for yard trimmings, EcoNomics examined:

- The level of current diversion of yard trimmings from participating yard trimmings customers;
- Adjustments to collection and processing costs as a result of customers migrating from large volumes of yard trimmings carts to bins;
- Reductions in service levels as a result of being charged for the service
- The proposed cost recovery yard trimmings rate will be phased in over a 5-year period to minimize the potential for 'rate shock' to existing yard trimmings customers who have been receiving this service at no charge for over 20 years.

2.2.1 5-year Phased-in Rate for Commercial Yard Trimmings Service

EcoNomics is recommending the rates shown in Table 1 below be charged to customers on the City's commercial yard trimmings route beginning July 1, 2025. The rates effective for January 1, 2026 and each January 1 thereafter until 2029 are also included. The rates shown in Table 1 are phased in over the course of five years and, by year 5, reflect the actual costs for commercial yard trimmings collection service. More information on the costs that are included in this rate can be found in Sections 2.5.1 and 3.8.1.

As shown in Table 1, the recommended rates for this service provide a rate incentive, i.e. reduction, ranging from 12 - 45% of equivalent MSW service. There is no current service for 1 cubic yard MSW, so this value was created by taking the MSW rate for a 2 cubic yard container and dividing by two in the following rate comparisons. The entire recommended commercial compostable rate schedule, which includes collection frequencies of 1-7 days per week for up to 10 containers, is included in Appendix 2.

Table 1: Commercial Yard Trimmings Phased-In Rates and MSW Rate Comparison

Size	2025	2026	2027	2028	2029	MSW Rate (2029)	Comparison (%)
35-gal	$2.25	$4.84	$12.19	$17.11	$21.71	$48.01	45.21%
64-gal	$3.13	$6.68	$15.07	$21.13	$26.94	$96.22	28.00%
90-gal	$4.01	$8.52	$17.96	$25.14	$32.18	$144.09	22.34%
1 CY	$7.10	$14.97	$20.63	$28.66	$35.68	$298.55	11.95%
2 CY	$12.98	$27.24	$39.86	$55.39	$70.60	$597.10	11.82%
3 CY	$18.86	$39.52	$59.08	$82.15	$105.52	$875.54	12.05%
4 CY	$24.74	$51.79	$78.30	$108.91	$140.45	$1,136.75	12.36%
6 CY	$36.50	$76.35	$116.75	$162.43	$210.29	$1,691.89	12.43%

Comparison is shown as a percentage of 2029 rates relative to 2029 MSW rate.

2.2.2 5-year Phased-in Rate for Multifamily Yard Trimmings Service

Due to the additional labor needed for navigating the operational complexities at multifamily properties, including staging containers at the curb for collection in properties where there is inadequate access for heavy-duty collection vehicle, EcoNomics is recommending a separate set of rates for multifamily properties to distribute these sector-specific costs. The rates for multifamily properties in Table 2 below should be charged to customers on the City's multifamily yard trimmings route beginning July 1, 2025. The rates effective for January 1, 2026 and each January 1 thereafter until 2029 are also included in the table below. The rates shown in Table 2 are phased in over the course of five years and based on the actual costs for multifamily yard trimmings collection service.

As shown in Table 2, the recommended rates for this service provide a rate incentive, i.e. reduction, ranging from 13 - 76% of equivalent MSW service. The entire recommended multifamily yard trimmings rate schedule, which includes collection frequencies of 1-7 days per week for up to 10 containers, is included in Appendix 3.

Table 2: Multifamily Yard Trimmings Phased-In Rates and MSW Rate Comparison

Size	2025	2026	2027	2028	2029	MSW Rate (2029)	Comparison (%)
35-gal	$4.83	$10.19	$20.49	$28.57	$36.53	$48.01	76.08%
64-gal	$5.71	$12.03	$23.38	$32.58	$41.77	$96.22	43.41%
90-gal	$6.60	$13.87	$26.26	$36.60	$47.00	$144.09	32.62%
1 CY	$9.68	$20.31	$28.93	$40.09	$50.50	$298.55	16.92%
2 CY	$15.56	$32.59	$48.16	$66.85	$85.42	$597.10	14.31%
3 CY	$21.44	$44.87	$67.38	$93.61	$120.35	$875.54	13.75%
4 CY	$27.32	$57.14	$86.61	$120.37	$155.27	$1,136.75	13.66%
6 CY	$39.08	$81.69	$125.05	$173.89	$225.11	$1,691.89	13.31%

Comparison is shown as a percentage of 2029 rates relative to 2029 MSW rate.

2.3 5-year Phased-in Rate for Commercial Food Scrap Service

Currently, commercial food scrap recycling rates are offered at 75% the cost of equivalent MSW service. Effective July 1, 2025, food scrap rates will be reduced to a cost-recovery rate over a 5-year phase-in period. To develop a cost-recovery rate for commercial food scraps service, EcoNomics examined:

- The level of current diversion of food scraps from participating food scrap customers;
- The projected quantity of food scraps from currently non-compliant commercial and multi-family customers that will need food scrap service to become compliant with SB 1383;
- The projected reduction in MSW cart and bin revenue associated with expanded food scrap recycling collection programs;
- Adjustments to collection and processing costs due to customers migrating from large volumes of food scraps carts to bins;

EcoNomics is recommending the rates shown in Table 3 below be charged to customers on the City's commercial food scrap route beginning July 1, 2025. The rates effective for January 1, 2026 and each January 1 thereafter until 2029 are also included in the table below. The rates shown in Table 3 are based on phasing in the actual costs for commercial food scrap collection service. These rates will phase down from current pricing levels over the five year phase-in period to the cost recovery rate, which is less than the current rate.

As shown in Table 3, the recommended rates for this service provide a rate incentive, i.e. reduction, ranging from 11- 32% of equivalent MSW service. The entire recommended commercial compostable rate schedule, which includes collection frequencies of 1-7 days per week for up to 10 containers, is included in Appendix 2.

Table 3: Commercial Food Scraps Phased-In Rates and MSW Rate Comparison

Size	2025	2026	2027	2028	2029	MSW Rate (2029)	Comparison (%)
35-gal	$31.69	$27.76	$28.64	$27.14	$25.36	$73.13	32.27%
64-gal	$61.50	$51.30	$45.99	$38.39	$30.60	$146.56	19.68%
90-gal	$91.10	$74.68	$63.23	$49.58	$35.84	$219.48	15.53%
1 CY	$189.99	$157.24	$122.73	$91.02	$58.86	$454.76	13.30%
2 CY	$375.65	$305.23	$233.68	$165.60	$97.78	$909.52	10.93%

Comparison is shown as a percentage of 2029 rates relative to 2029 MSW rate.

2.4 5-year Phased-in Rate for Multifamily Food Scrap Service

EcoNomics is recommending the rates shown in Table 4 below be charged to customers on the City's commercial food scrap route beginning July 1, 2025. The rates effective for January 1, 2026 and each January 1 thereafter until 2029 are also included in the table below. The rates shown in Table 4 are based on phasing in the actual costs for multi-family food scrap

collection service. These rates will 'ramp down' from current pricing levels over the five year phase-in period to the cost recovery rate, which is less than the current rate.

As shown in Table 4, the recommended rates for this service provide a rate incentive, i.e. reduction, ranging from 12- 55% of equivalent MSW service. The entire recommended commercial compostable rate schedule, which includes collection frequencies of 1-7 days per week for up to 10 containers, is included in Appendix 3.

Table 4: Multifamily Food Scraps Phased-In Rates and MSW Rate Comparison

Size	2025	2026	2027	2028	2029	MSW Rate (2029)	Comparison (%)
35-gal	$34.26	$33.11	$36.94	$38.60	$40.19	$73.13	54.95%
64-gal	$64.08	$56.65	$54.29	$49.84	$45.42	$146.56	30.99%
90-gal	$93.69	$80.03	$71.53	$61.04	$50.66	$219.48	23.08%
1 CY	$192.56	$162.59	$131.03	$102.47	$73.68	$454.76	16.20%
2 CY	$378.23	$310.58	$241.98	$177.05	$112.60	$909.52	12.38%

Comparison is shown as a percentage of 2029 rates relative to 2029 MSW rate.

2.4.1 5-year Phased-in Rate for Packaged Organics Collection Service

In addition to the commercial and multi-family food scrap rates noted above, the study also examined the cost factors for a 'packaged organics' rate which could be used for convenience stores, multi-family properties, and other businesses that generate an organics stream that contains extensive contamination from packaged food items, including rigid plastics, food soiled paper, film plastics, expanded polystyrene, and other non-compostable materials that would need to be removed prior to composting. The rate for the packaged organics rates are slightly higher than the food scraps rates due to additional processing requirements of the packaged organics stream to remove contaminants. Tables 5 and 6 below show the rates for commercial and multifamily packaged organics service for one container and one pickup. A complete list of the rates can be found in Appendix 4. Expected revenue and cost values were not modeled for the packaged organics rate.

Table 5: Commercial Packaged Organics Phased-In Rates and MSW Rate Comparison

Size	2025	2026	2027	2028	2029	MSW Rate (2029)	Comparison (%)
35-gal	$32.02	$28.44	$29.74	$28.65	$27.34	$73.13	37.38%
64-gal	$62.11	$52.57	$48.02	$41.20	$34.27	$146.56	23.38%
90-gal	$92.00	$76.55	$66.19	$53.69	$41.20	$219.48	18.77%
1 CY	$191.88	$161.19	$128.91	$99.67	$70.13	$454.76	15.42%
2 CY	$379.44	$313.12	$246.07	$182.89	$120.33	$909.52	13.23%

Comparison is shown as a percentage of 2029 rates relative to 2029 MSW rate.

Table 6: Multifamily Packaged Organics Phased-In Rates and MSW Rate Comparison

Size	2025	2026	2027	2028	2029	MSW Rate (2029)	Comparison (%)
35-gal	$34.60	$33.79	$38.04	$40.11	$42.16	$73.13	57.65%
64-gal	$64.69	$57.92	$56.32	$52.65	$49.09	$146.56	33.49%
90-gal	$94.58	$81.89	$74.49	$65.14	$56.02	$219.48	25.52%
1 CY	$194.46	$166.54	$137.22	$111.13	$84.95	$454.76	18.68%
2 CY	$382.02	$318.49	$254.37	$194.35	$135.15	$909.52	14.86%

Comparison is shown as a percentage of 2029 rates relative to 2029 MSW rate.

2.5 Revenue Impacts of Proposed Rates

The recommended rates for commercial and multifamily yard trimmings and food scraps, shown in Tables 1-4 above, will have the revenue impacts on the City's rate revenue stream as shown in Table 7 below. An overview of each of the four revenue impact areas is included in this section. Note the impacts in year one are for a period of six months, as the rate changes will be effective between July 1 – December 31, 2025, while years 2-4 represent annual quantities. Negative values represent a reduction in revenue from current numbers while positive values represent an increase in revenue.

Detailed analyses supporting the revenue impacts is included in subsequent sections of this report and are referenced in Table 7 below. The revenue impact summary table assumes all customers with more than one cubic yard of cart service migrate to bin service if: 1) there is a lower cost of doing so; and 2) if it is operationally feasible to receive bin service at their property. Operational feasibility for bin service of a sample of potential migration sites was assessed with assistance from NRWS' Operations Manager in addition to site visits by EcoNomics staff. Using these criteria, EcoNomics projected 54 yard trimmings customers and 100 food scrap customers to migrate from carts to bins.

The overall net revenue impact in year 5 is a *reduction* in revenue of $659,197.73, mostly driven by the reduction in food scrap revenue received by the City as food scrap rates are phased in from the current rate (75% of equivalent MSW costs) to the actual costs of the service (which is less than current, incentivized rate). As the food scrap rate gets closer to a cost-recovery amount each year (which is lower than 75% the cost of MSW), the rate revenue reduction compared to the revenue amount that would have come in under a business-as-

usual scenario gets more pronounced. Since this reduction in revenue impact cannot be considered a 'direct cost' of providing the service, it is not included in the cost recovery rates.

Table 7: Predicted Yearly Revenue Impact of Most Likely Migration Scenario

Scenario 1 Migration, Full SB 1383 compliance

Description of Revenue Impact	Year 1 Revenue Impact	Year 2 Revenue Impact	Year 3 Revenue Impact	Year 4 Revenue Impact	Year 5 Revenue Impact	Report Section Describing Detailed Analysis
Revenue Impact 1: Increase in Rate Revenue from Current Commercial and Multi-family Yard Trimmings Customers Who Currently do not Pay for this Service	$38,248	$153,172	$211,625	$307,365	$371,321	2.5.1, 3.1.1
Revenue Impact 2: Decrease in Rate Revenue from Current Commercial Food Scrap Recycling Customers Who Currently Pay 75% of the Equivalent MSW Rate for this Service	-$154,883	-$466,224	-$607,988	-$761,623	-$947,647	2.5.2, 3.1.2
Revenue Impact 3: Increase in Rate Revenue from Currently Non-compliant Commercial Generators that Implement Food Scrap Recycling Programs between 2025 and 2029	$86,818	$141,769	$111,810	$81,899	$51,232	2.5.3, 3.1.3
Revenue Impact 4: Decrease in MSW rate revenue from commercial and multi-family generators who 'right size' their MSW service levels as a result of incorporating commercial compostable service	-$51,198	-$112,636	-$121,647	-$128,946	-$134,103	2.5.4, 3.1.4
Net Revenue Impact by Rate Year	**-$81,014**	**-$283,918**	**-$406,200**	**-$501,305**	**-$659,198**	**3.1.5**

2.5.1 Overview of Revenue Impact 1: Increase in Rate Revenue from Current Yard Trimmings Customers Who Currently do not Pay for this Service

Currently, the City does not charge customers for yard trimmings collection service (i.e. this service is offered at no charge). As of October 1, 2024, there were 459 commercial yard trimmings customers and 90 multifamily customers receiving this service at no charge. EcoNomics recommends that a cost-recovery model, phased-in over 5 years, be implemented effective July 1, 2025 where customers pay the actual cost of providing the service for yard trimmings collection. Using the commercial and multi-family yard trimming rates displayed in Tables 1 & 2, current yard trimmings customers will generate additional revenue of $371,320.90 in year 5 or $30,943.41 in monthly rate revenue. Additional analysis supporting this revenue projection is included in Sections 2.8.1 and 3.1.1.

2.5.2 Overview of Revenue Impact 2: Decrease in Rate Revenue from Current Commercial Food Scrap Recycling Customers Who Currently Pay 75% of the Equivalent MSW Rate for this Service

As of January 2025, there were 292 commercial customers that participated in the City's food scrap recycling program. This program is currently offered at 75% of equivalent MSW service to provide an incentive for participating in the program. This rate reduction from the 75% MSW-equivalent rate for commercial and multi-family food scraps to the cost-recovery rates shown in Tables 3 & 4 will result in a reduction in rate revenue of approximately $947,646.97 per year or $78,970.58 per month by year 5. The decrease in revenue each year is modeled in Tables 7 and 9 at the current (2025) food scrap rate. Additional analysis supporting this revenue projection is included in Sections 2.8.2 and 3.1.2.

2.5.3 Overview of Revenue Impact 3: Increase in Rate Revenue from Currently Non-compliant Commercial Generators that Implement Food Scrap Recycling Programs in 2025

There are 60 commercial and multi-family accounts that are non-compliant with SB 1383 and will need to implement a food scrap recycling program to comply. These non-compliant accounts were aggregated into a prioritized listing of accounts that need 'onboarding' onto the City's food scrap collection program and are referred to as 'onboarding' accounts throughout the study. To determine the revenue impacts on the City if these 'onboarding' accounts implement state-mandated organics recycling services, EcoNomics developed service projections for each of these accounts that incorporated food scrap recycling services. EcoNomics used its industry knowledge and experience implementing thousands of commercial and multi-family organics recycling programs to develop the organics service projections needed for the onboarding accounts to become compliant with SB 1383. Based on this analysis, when all non-compliant accounts are in compliance and have needed organics recycling services, using the food scrap recycling rates shown in Tables 3 & 4, these customers will generate $51,231.74 per year or $4,269.31 in rate revenue per month in rate year 5. Additional analysis supporting this revenue projection is included in Sections 2.8.3 and 3.1.3.

2.5.4 Overview of Revenue Impact 4: Decrease in MSW rate revenue from commercial customers who 'right size' their MSW service levels as a result of incorporating commercial compostable service

EcoNomics developed service projections to incorporate state-mandated organics services for all currently non-compliant 'onboarding' accounts. Wherever possible, these service projections assumed onboarding accounts would 'right-size' their MSW collection service (i.e. reduce MSW service levels by the equivalent volume of organic waste that was diverted) to reduce disposal costs. The current MSW revenue being generated from all the accounts targeted for SB 1383 organics implementation is $617,149.44 yearly. The total expected revenue reduction from MSW after these targeted accounts incorporate food scrap collection service and implement 'right-sizing' adjustments to their MSW service will be $134,103.40 per year or $11,175.28 per month by rate year 5. The right-sizing of MSW service to account for volume of organics diverted through the compostable program represents a reduction in revenue to the City. Additional analysis supporting this revenue projection is included in Section 3.1.4.

2.6 Cost Impacts of Proposed Rates

In addition to impacts on the City's rate revenue stream outlined above, the expansion of the commercial and multifamily food scrap and yard trimmings route to the additional customers, additional frequency of food scrap cart washing, as well as potential migration from carts to bins for some customers, will also have impacts on costs. These costs are outlined in Table 8 below. Note the cost impacts for year 1 include only six months of costs, while years 2-5 show yearly costs. Negative values in the table represent a reduction in costs while positive values represent an increase in costs.

Table 8: Predicted Yearly Cost Impact of Most Likely Migration Scenario

Scenario 1 Migration, Full SB 1383 compliance

Description of cost Impact	Year 1 Cost Impact	Year 2 Cost Impact	Year 3 Cost Impact	Year 4 Cost Impact	Year 5 Cost Impact	Report Section Describing Detailed Analysis
Cost Impact 1: Increase in Costs due to Need for Additional Staff For Multifamily Properties	$44,485	$79,731	$49,812	$62,554	$58,696	2.6.1, 2.8.6, 3.2.1
Cost Impact 2: Increase in Cost due to Capital Expenses Associated with Bins and Liners	$3,962	$11,522	$5,633	$27,796	$69,739	2.6.2, 2.8.7, 3.2.2
Cost Impact 3: Change in Collection Cost Payments to NRWS due to Reduction in Lift Costs	$55,927	$98,406	-$216,589	-$245,640	-$451,364	2.6.3, 2.8.8, 3.2.3
Cost Impact 4: Increase in Cost due to Capital Expenses Associated with New Collection Vehicle	$0	$0	$163,274	$163,274	$163,274	2.6.4, 2.8.9, 3.2.4
Cost Impact 5. Increase in Cost due to Increased Frequency of Cart Washing	$22,858	$21,520	$20,602	$17,695	$9,853	2.6.5, 2.8.10, 3.2.5
Cost Impact 6: Decrease in Cost from Avoided Disposal	-$3,044	-$3,061	-$3,073	-$3,078	-$3,075	2.6.6, 3.2.6
Cost Impact 7: Increase in Costs due to Need for Additional Staff to Drive Vehicle	$0	$0	$185,000	$191,475	$198,177	2.6.7, 2.8.11, 3.2.7
Cost Impact 8: Increase in Costs for Operating Additional Vehicle	$0	$0	$35,000	$36,225	$37,493	2.6.8, 2.8.12, 3.2.8
Net Cost Impact per Rate Year	**$124,189**	**$208,117**	**$239,659**	**$250,300**	**$82,793**	

2.6.1 Overview of Cost Impact 1: Increase in Costs due to Need for Additional Staff For Multi-family Properties

The additional food scraps and yard trimmings collection service at multifamily properties will require additional labor support. The expected increase in service will require an additional labor cost of $10,333.33 per month starting in 2025. However, the costs represented in Table 8 are based on the estimated labor time needed for the helper to assist with the predicted number of multi-family containers in service during any given rate year. As customers migrate and the yard trimmings service is right sized, the total number of lifts for food scraps and yard trimmings changes over time. Additional information on this cost can be found in Section 3.2.1.

2.6.2 Overview of Cost Impact 2: Increase in Cost due to Capital Expenses Associated with Bins and Liners

Capital acquisition costs to the City were calculated each year for the bins and liners needed for food scraps service customers who were predicted to migrate from cart service to bin service in that year. In the current contract, bins for yard trimmings are included and any yard trimmings customers who migrate from carts to bin incurred no additional capital charge for this equipment. The total capital cost for bins and liners the City can be expected to pay over the five years of migration for 100 food scraps customers is $118,651.35. Additional information can be found in Section 3.2.2.

2.6.3 Overview of Cost Impact 3: Change in Collection Cost Payments to NRWS due to Reduction in Lift Costs

The City currently pays NRWS $454.69 per lift over baseline per year for commercial collection service. The number of lifts is expected to increase as a result of non-compliant generators adding food scrap services, decrease as a result of MSW right sizing caused by the diversion of these materials, decrease as a result of yard trimmings right sizing once there is a charge for the service, and further decrease as a result of any migration of current food scraps and yard trimmings customers. More details on lift calculations and the costs per lift can be found in Section 3.2.3.

As noted in the Section 2.5.3 of this report, a portion of the current SB 1383 non-compliant accounts may be able to reduce their MSW service after they implement a food scrap recycling program reducing the total MSW lifts by 52 as a result of right sizing MSW. The number of additional lifts as a result of increased food scraps service is 177 for a net increase in lifts of 125. This leads to an overall increase in the collection payment in 2025, but as more customers migrate in years 2-5, the number of total lifts over baseline is reduced each year. By the time all predicted customers migrate in 2029, the reduction in lifts over baseline from the current values will be 882 lifts for a cost savings of $451,363.50 per year or $37,613.62 per month in year 5. Additional information can be found in Section 3.2.3.

2.6.4 Overview of Cost Impact 4: Increase in Cost due to Capital Expenses Associated with New Collection Vehicle

Due to the increase in compostable collection needed to comply with SB 1383, the City anticipates the purchase of an additional side loader to service the carts on the compostable route. The purchase of this vehicle will occur in 2027. The price of the vehicle plus a 3% capital acquisition rate will be funded through a loan with a term of 60 months with a 5% interest rate. Only payments for the first 3 years of this loan (2027-2029) are shown here as the last two years of payment are beyond the scope of this rate study. The total cost of this vehicle is estimated at $721,000.00 in 2027. The yearly costs represented in Table 8 represent the sum of the monthly loan payments of $13,606.16. Additional information can be found in Section 3.2.4.

2.6.5 Overview of Cost Impact 5. Increase in Cost due to Increased Frequency of Cart Washing

Currently, a third-party vendor provides cart washing services quarterly for food scrap containers at a cost of $12.50 per cart. After the implementation of this program, it was decided to increase cart washing to once per month which will lead to an increase in costs for years 1-4. However, the reduction in food scraps carts caused by migration reduces the total number of food scraps carts by a significant amount in year 5 leading to a reduction in washing cost after migration is complete. The cost for cart washing is applied to each food scraps cart. After full SB 1383 implementation and migration the estimated number of food scraps carts in 2029 is 521. After increasing the frequency of food scraps cart washing, along with the reduction in carts as a result of migration, the difference in cost in 2029 is an increase of $9,853.39 per year. Additional information can be found in Section 3.2.5.

2.6.6 Overview of Cost Impact 6: Decrease in Cost from Avoided Disposal

With the expansion of the commercial food scrap recycling route to all 60 currently SB 1383 non-compliant onboarding accounts, 974.48 additional tons of materials per year that are currently being disposed of as MSW will be diverted from the landfill and instead composted at the City's MDF facility. The cost per ton of disposal in 2025 is $78, while the cost per ton of composting is $40.52, a cost-saving of $37.48 for every ton of additional materials diverted through either the commercial compostables or packaged organics routes. Right sizing of MSW reduces the monthly tons of materials by 81.21 tons per month. Assuming full SB 1383 compliance, the City will reduce landfill disposal costs by $36,523.37 per year or $3,043.61 per month in year 5. Additional analysis supporting this cost reduction projection is included in Section 3.2.6.

2.6.7 Overview of Cost Impact 7: Increase in Costs due to Need for Additional Staff to Drive Vehicle

The cost of labor to drive the additional vehicle that will service food scraps and yard trimmings carts is estimated at $185,000 per year in 2027. The cost is applied a labor inflation cost of 3.5% each year for a total cost in year 5 of $198,176.62 or $16,514.72 per month. Additional information on this cost can be found in Section 3.2.7.

2.6.8 Overview of Cost Impact 8: Increase in Costs for Operating Additional Vehicle

The operating costs of the new vehicle to service food scraps and yard trimmings carts excludes labor but includes insurance, office expenses, vehicle repair and maintenance. The expected cost in 2027 to operate the new vehicle is $35,000 per year. An inflation rate of 3.5% is applied each year for a total cost in year 5 of $37,492.88 or $3,124.406 per month. Additional information on this cost can be found in Section 3.2.8.

2.7 Combined cost and revenue impacts of recommended rates

Table 9 below combines the aggregate rate revenue impacts from Table 7 in Section 2.5 and the cost impacts identified in Table 8 in Section 2.6 to show the overall expected impact of the service and rate changes on the City's fund.

All of the cost impacts directly apply to customer rates except for the avoided disposal costs of material that is currently being processed as MSW and will be diverted to food scraps or yard trimmings containers. The revenue impacts of the new yard trimmings revenue, the new predicted food scraps revenue from full SB 1383 compliance and the existing food scraps services cover all costs for food scraps and yard trimmings collection and processing, in addition to the interest charged in the future for any upfront capital costs. The change in revenue as a result of MSW right sizing is not directly related to the customer rates, nor is the difference between current food scrap revenue and the food scrap revenue calculated in the recommended rates.

The negative net fund impact values are driven by the reduction in food scrap revenue received by the City as food scrap rates are phased in from the current rate (75% of equivalent MSW costs) to the actual costs of the service (which is less than current, incentivized rate). As the MSW rate increases each year and the food scrap rate gets closer to a cost-recovery amount each year (which is lower than 75% the cost of MSW), the rate revenue reduction compared to the revenue amount that would have come in under a business-as-usual scenario gets more pronounced. Since this reduction in revenue impact cannot be considered a 'direct cost' of providing the service, it is not included in the cost recovery rates.

Table 9: Predicted Yearly Impact of Most Likely Migration Scenario

Scenario 1 Migration, full SB 1383 compliance

Description of Impact	Year 1 Impact	Year 2 Impact	Year 3 Impact	Year 4 Impact	Year 5 Impact
Revenue Impact 1: Increase in Rate Revenue from Current Commercial and Multi-family Yard Trimmings Customers Who Currently do not Pay for this Service	$38,248	$153,172	$211,625	$307,365	$371,321
Revenue Impact 2: Decrease in Rate Revenue from Current Commercial Food Scrap Recycling Customers Who Currently Pay 75% of the Equivalent MSW Rate for this Service	-$154,883	-$466,224	-$607,988	-$761,623	-$947,647
Revenue Impact 3: Increase in Rate Revenue from Currently Non-compliant Commercial Generators that Implement Food Scrap Recycling Programs between 2025 and 2029	$86,818	$141,769	$111,810	$81,899	$51,232
Revenue Impact 4: Decrease in MSW rate revenue from commercial and multi-family generators who 'right size' their MSW service levels as a result of incorporating commercial compostable service	-$51,198	-$112,636	-$121,647	-$128,946	-$134,103
Cost Impact 1: Increase in Costs due to Need for Additional Staff For Multifamily Properties	-$44,485	-$79,731	-$49,812	-$62,554	-$58,696
Cost Impact 2: Increase in Cost due to Capital Expenses Associated with Bins and Liners	-$3,962	-$11,522	-$5,633	-$27,796	-$69,739
Cost Impact 3: Change in Collection Cost Payments to NRWS due to Reduction in Lift Costs	-$55,927	-$98,406	$216,589	$245,640	$451,364
Cost Impact 4: Increase in Cost due to Capital Expenses Associated with New Collection Vehicle	$0	$0	-$163,274	-$163,274	-$163,274
Cost Impact 5: Increase in Cost due to Increased Frequency of Cart Washing	-$22,858	-$21,520	-$20,602	-$17,695	-$9,853
Cost Impact 6: Decrease in Cost from Avoided Disposal	$3,044	$3,061	$3,073	$3,078	$3,075
Cost Impact 7: Increase in Costs due to Need for Additional Staff to Drive Vehicle	$0	$0	-$185,000	-$191,475	-$198,177
Cost Impact 8: Increase in Costs for Operating Additional Vehicle	$0	$0	-$35,000	-$36,225	-$37,493
Net Impact on Fund per Rate Year	**-$205,203**	**-$492,035**	**-$645,859**	**-$751,606**	**-$741,990**
Estimated annual rate revenue by rate year	$32.9M	$36.2M	$39M	$42.2M	$44.7M
Percent of total rate revenue represented by net impact on fund of recommended organics rates	0.62%	1.36%	1.65%	1.78%	1.66%
Budgeted Rate Stabilization Reserves	$227,191	$1,120,970	$2,154,277	$3,346,673	$4,287,353
Remaining Rate Stabilization Fund Balance if Used to Offset Negative Fund Impact	$21,988	$628,935	$1,508,418	$2,595,067	$3,545,363

2.7.1 Analysis of Recommended Program Rates and Net Impact on the City's Solid Waste Enterprise Fund

As shown in Table 9, the total aggregate monthly revenue and cost impacts of the fully implemented commercial compostables and packaged organics route is a net fund impact of $741,990 per year by Rate Year 5 when the fully phased in rates are charged. This represents approximately 1.66% of the City's total projected annual rate revenue of $44.7M.

EcoNomics recommends the use of rate stabilization reserves to offset the negative impact on the fund of charging the cost-recovery rates. The projected remaining rate stabilization fund balance after the cost of charging the recommended rates is included for each year in Table 9. The rate stabilization fund is projected to have a balance of $3.6M by the end of year 5. These recommendations are outlined in Section 4.

2.7.1.1 Difference in Expected Costs vs. Phased in Rates for years 1-4

The recommended cost recovery rates cover the predicted direct costs for each compostable service. Because these rates are phased in over time in attempt to limit the impact of these rate changes on the customer, there is a difference in years 1-4 in the rate revenue received vs. the actual cost of providing the service. The expected costs of providing the service vs. actual revenue received by the programs for each rate year is examined in Table 10 below. This table shows the difference in revenue received vs. the costs associated with yard trimmings and food scraps service each year. Because current food scraps rates more than cover the costs of providing the program, this leads to a net *surplus* in revenue for years 1-4 when compared to the actual costs for the service.

Table 10: Expected Costs vs. Phased-in Revenue 2025-2028

Description	Year 1	Year 2	Year 3	Year 4
Expected Costs	$363,379.80	$789,677.27	$753,974.29	$797,459.20
Phased-in Revenue	$583,709.57	$1,055,768.50	$942,497.70	$854,690.95
Net Impact	$220,329.77	$266,091.22	$188,523.40	$57,231.75

2.8 Rate Impacts on Individual Customers

The following section examines the projected impact of the proposed rates on food scrap recycling and yard trimmings customers, both those who currently have service as well as the onboarding customers referred to in Section 2.5.3. The average rate across all customers within Scenario 1 decreased by $43.42. The range of rate differences between these customers went from a cost savings of $2470.6 for a food scraps customer who migrated to bins, to a cost increase of a yard trimmings customer who currently receives the service at no charge to a rate of $621.07 per month.

2.8.1 Rate impact on current customers: Commercial and Multi-family Yard Trimmings Recycling Customers

Currently, yard trimmings collection service is offered at no charge to 549 customers. All current participants in the City's yard trimmings recycling program would see an increase in

the costs they are paying for this service. Currently, these customers are paying $0 per month. When the commercial yard trimmings rate becomes effective on July 1, 2025, the average cost for yard trimming collection service will be increased to $11.49 per month and will gradually increase to $55.16 per month by January 1, 2029. As the full amount of this rate is phased in over time, revenue from yard trimmings customers increases over time as seen in Table 7.

Customers can mitigate this rate impact by:

- **Right-sizing of MSW:** All of the current commercial yard trimmings customers that generate 1) food scraps and 2) only had yard trimmings collection service, will be required to place food scraps into a food scraps recycling container. By placing their food scraps into a newly established food scrap recycling program, the customers will divert all their food scraps from their existing MSW container. Depending on the volume of food scraps a customer can divert from their MSW containers they may be able to reduce the size and/or the service frequency of the MSW container, and reduce disposal costs.

- **Cart to Bin Migration:** Approximately 231 customers have more than one cubic yard of aggregate cart collection service for food scraps or yard trimmings. Based on the recommended rates for both yard trimmings and food scraps included in Appendix 2, some of these customers will see a financial incentive to consolidate their many carts into a single bin with a higher volume capacity (i.e. a cubic 2-yard bin has the volumetric equivalent to six 65-gallon carts). Based on migration projections, there are 154 customers with more than 1-cubic yard of cart service that will realize a rate reduction, provided that it is operationally feasible to provide bin service to the property.

- **Right-sizing yard trimmings container:** Yard trimmings service has been offered at no charge and customers had little incentive to modulate service based on actual yard trimmings generation levels, seasonal or otherwise. When this service is offered at a charge, customers will have an incentive to reduce service to match actual yard trimmings generation levels. The effects of right sizing are examined in Section 3.3 below.

2.8.2 Rate impact on current customers: Commercial and Multi-family Food Scrap Recycling Customers

The recommended cost-recovery commercial food scrap rate, that will be phased-in over 5-years, would be charged to 292 source-separated food scrap customers, who are currently paying 75% of the cost of equivalent MSW service. Currently customers are paying anywhere between $36.01 - $4,690.14 per month with an average rate of $316.58 per month. All current participants in the City's food scrap recycling program would see a reduction in the costs they are paying for this service. With the implementation of the recommended commercial food scrap rates shown in Tables 3 & 4, these customers will be paying between $24.18 and $736.57 per month with an average rate of $74.27 per month by rate year 5. This represents a cost between 17 - 67% less for food scrap recycling service with a mean

reduction in cost of 36%. As the food scrap rates decline to the actual rate over time, the reduction in revenue from the current rates increases over time as seen in Table 7. Appendix 5 shows current and predicted services for food scrap customers and includes the current food waste revenue for all accounts.

2.8.3 Rate impact on future customers: Non-compliant commercial and multi-family generators that will need to implement food scrap recycling service, yard trimmings service, or both

There are approximately 60 commercial customers that need to implement an organics recycling program. EcoNomics modeled the optimal commercial food scrap and/or yard trimmings service levels for all non-compliant accounts in the City. For these service projections, EcoNomics assumed a fully-compliant program would be implemented, which would include 3-containers (MSW, recycling, and compostables) in every enclosure to ensure convenient access to residents and businesses using the containers. An additional 220 cubic yards of weekly food scraps service was predicted for food scrap producing customers who do not currently have service. Once these customers add these food scraps services, the City can expect to see an increase in yearly revenue of $51,231.74 or an increase of $4,269.31 per month, for the additional cart and bin services. This represents an increase in revenue for the City that gets smaller each year as a result of the reduction in food scrap rate towards a cost recovery rate by Year 5. On average, the customers that are currently non-compliant for food scrap recycling are paying $886.71 per month for MSW collection service. With the incorporation of commercial food scrap and/or yard trimmings service in a manner that is compliant with SB 1383, in July of 2025 these customers will be paying an average of $755.35 for MSW service and $241.16 for food scraps service, an increase of approximately $109.8 per month (12.38%). The loss in MSW revenue for the City increases each year as seen in Table 5, due to the yearly increases in the MSW rate. MSW revenue is projected to increase by 12% in year 1, and by 10%, 8%, 8% and 6% in years 2-5 respectively.

2.8.4 Rate impact on migrating customers for both Food Scraps and Yard Trimmings

The following section reviews the potential cost savings Scenario 1 and Scenario 2 migrating customers as 'rational actors', where migration occurs only when the customer experiences cost savings. The 2029 revenue for Scenarios 1 & 2 was compared to the 2029 revenues where no migration takes place. All values are taken from the recommended rates for each scenario. The increase in costs for cart services caused by the increased frequency of food scrap cart washing, the additional side loader vehicle, its driver and operational costs, as well as the reduction in lift payments combined to reduce rates for all rational actors who switch to bin service.

2.8.4.1 Scenario 1 Migrators

The average rate across all migrating customers with more than 1 cubic yard of food scraps or yard trimmings service (Scenario 1) decreased by $58.27. The range of rate differences between these customers went from a cost savings of $258.70 to $17.01 per month. All customers saw a reduction in rates as a result of migration.

Food Scraps

When broken down by food scraps and yard trimmings customers, the mean change in the rate after migration was a decrease of $56.17 per month. There were 100 customers who experienced a cost savings ranging from $215.95 to $17.01.

Yard Trimmings

The mean change in the monthly rate when customers with yard trimmings service migrated to bins was a decrease of $57.50. There were 51 customers who experienced a cost savings ranging from $165.16 to $22.40 per month.

2.8.4.2 Scenario 2 Migrators

Customers with more than 2 cubic yards of food scraps or yard trimmings service in Scenario 2 decreased their monthly rate by $85.77 on average. The range of rate differences between these customers went from a cost savings of $257.54 to $48.23 per month. All customers saw a reduction in rate as a result of migration.

Food Scraps

When broken down by food scraps and yard trimmings customers, the mean change in the rate when the customers with food scraps carts migrated was a decrease of $85.52 per month. There were 38 customers who experienced a cost savings ranging from $213.63 to $48.23 per month.

Yard Trimmings

The mean change in the monthly rate when customers with yard trimmings service migrated to bins was a decrease of $78.49. There were 21 customers who experienced a cost savings ranging from $165.16 to $49.49 per month.

2.8.5 Rate impacts on individual customers as a result of the costs outlined in Table 7

The recommended rate after five-year phase in directly reflects the cost of service. Applying these rates and expected service configurations to customers in 2029, the table and figures below show the approximate distribution of each of the identified costs and their contribution to the rate. Each of the available container sizes and their associated costs (rate) in year 2029 are shown for commercial (C) and multifamily (MF) rates for one container and one pickup. In Table 11, each of the collection costs are displayed for the available services. The values are the percentages of the total rate, with larger percentages colored in dark blue and lightening through the smaller percentages. The table indicates the majority of both commercial and multifamily rates are more greatly impacted by the processing cost, or the total cubic yards of material collected. In the case of the multifamily carts, it is the labor or the driver cost that makes up the majority of the rate. The high percentage of labor remained constant when pickups and the number of containers increased as well.

Table 11: Percentage Breakdown of Cost Components

Waste Type	Rate	Container Size	Processing Cost	Collection Cost	Capital Cost	Labor Cost	Vehicle Cost	Driver Cost	Operating Cost	Washing Cost
FW	C	0.175	24	3	NA	NA	23	30	6	14
FW	C	0.325	37	2	NA	NA	19	25	5	12
FW	C	0.475	46	2	NA	NA	16	21	4	10
FW	C	2.000	71	1	28	NA	NA	NA	NA	NA
FW	MF	0.175	15	2	NA	37	15	19	4	9
FW	MF	0.325	25	2	NA	33	13	17	3	8
MSW	C	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSW	MF	NA	NA	NA	NA	NA	NA	NA	NA	NA
YW	C	0.175	28	3	NA	NA	27	35	7	NA
YW	C	0.325	28	3	NA	NA	27	35	7	NA
YW	C	0.475	42	3	NA	NA	22	28	5	NA
YW	C	2.000	98	2	NA	NA	NA	NA	NA	NA
YW	C	3.000	99	1	NA	NA	NA	NA	NA	NA
YW	C	4.000	99	1	NA	NA	NA	NA	NA	NA
YW	C	6.000	99	1	NA	NA	NA	NA	NA	NA
YW	MF	0.175	17	2	NA	41	16	21	4	NA
YW	MF	0.475	27	2	NA	35	14	18	3	NA
YW	MF	4.000	87	1	NA	12	NA	NA	NA	NA

The impact on each of the individual service types are seen more clearly through the bar charts below and further explained in each of the cost sections. In each of the figures, values are shown in monthly costs.

Commercial Food Scraps

Commercial food scraps carts incur a variety of costs from the additional side loader vehicle and cart washing. Commercial bin rates are driven primarily by the processing cost of the larger collection volume and the purchase of the new bin over time.

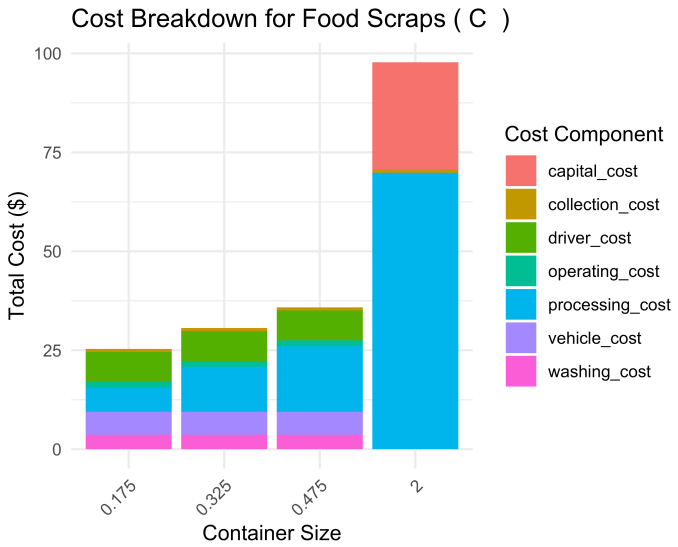

Figure 1. Cost of each of the 7 components in Commercial Food Scraps Rates

Multifamily Food Scraps

There are currently no multifamily customers with food scraps bin service. Food scraps carts incur a variety of costs from the additional side loader vehicle and cart washing, as well as an additional charge for labor to assist with collection.

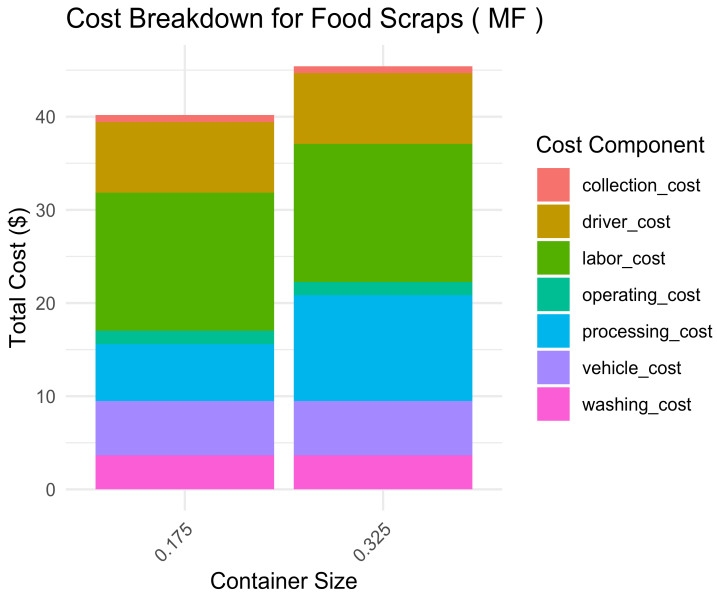

Figure 2. Cost of each of the 7 components in Multifamily Food Scraps Rates

Commercial Yard Trimmings

Commercial yard trimmings bins are most entirely made up of processing cost, as these containers don't need additional equipment or labor. The cart rates are primarily driven by 3 somewhat evenly distributed costs: processing costs and the additional vehicle and its driver.

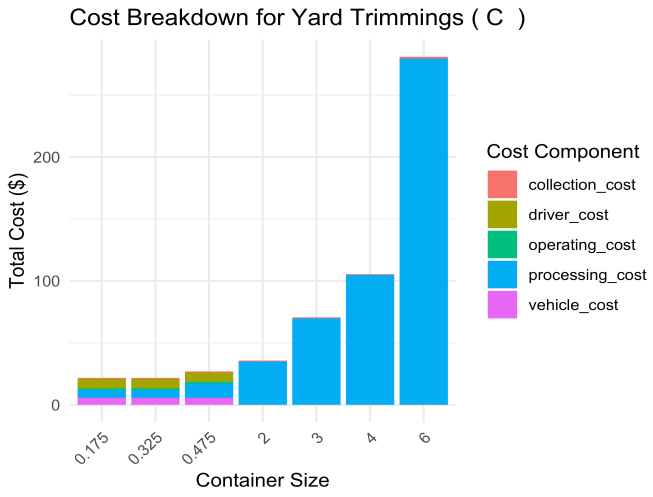

Figure 3. Cost of each of the 7 components in Commercial Yard Trimmings Rates

Multifamily Yard Trimmings

Multifamily customers with yard trimmings bin service have a rate driven by processing costs and the labor needed to assist in collection. Similar to the commercial yard trimmings carts, food scraps rates are most greatly affected by the labor to assist in collection followed by the cost of the additional side loader vehicle.

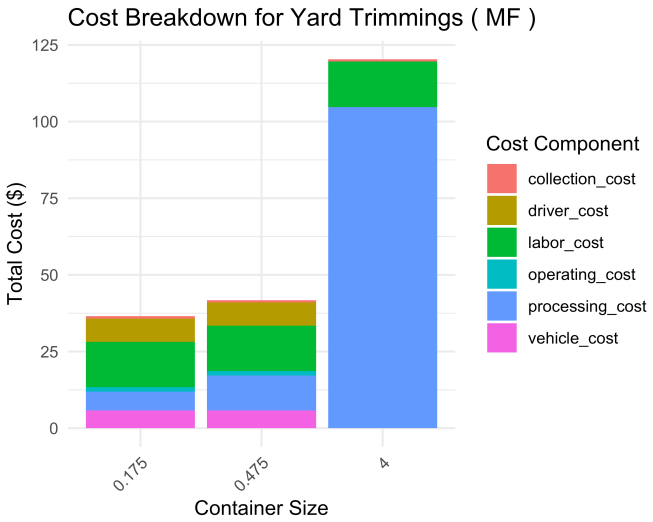

Figure 4. Cost of each of the 7 components in Multifamily Yard Trimmings Rates

2.8.6 Cost Impact 1: Labor Costs

Labor costs are applied to multifamily rates and refer to the additional help needed for collection at these properties. In the rates, it was applied as a monthly cost per lift to each multifamily customer, for both yard trimmings and food scraps. Currently, the total number of multifamily lifts is 678. The estimated time for assistance for each lift was three minutes with an approximate labor cost of $12.92 per lift. When applied to 2029 service configurations, the average cost per customer for labor is $40.59 per month. The labor costs range between $14.82 for a customer with 1 container to $237.15 for a customer with 4 containers.

2.8.7 Cost Impact 2: Bins and Liners

Any food scraps customers migrating from many carts to fewer bins will pay for the cost of new capital equipment. Customers can expect to pay between $23.18 and $81.53 per month with a mean of $25.08 per customer to cover costs of the new bins and liners in the estimated migration services. Liners are needed for food scrap bins only to prevent rusting of the metal containers. This cost will apply for five years, or the expected lifespan of the equipment.

2.8.8 Cost Impact 3: Collection Cost

The collection cost is calculated based on the number of lifts over baseline and distributed across all customers as a cost per lift. In the most likely scenario and the recommended rates presented within this study, the cost per lift charge is $0.76 per month in 2029. This number is dependent on the total lifts over baseline and yearly cost per lift reconciliation payment made to NRWS.

2.8.9 Cost Impact 4: Purchase of a New Vehicle

The monthly loan payment at a 5% interest rate used to purchase the new vehicle will be passed on to any customer with cart service in the form of a vehicle cost to make up a portion of both commercial and multifamily food scraps and yard trimmings cart rates. The purchase of the new side loader vehicle will increase the monthly cost by an average of $7.17 per customer. The monthly cost will range between $5.83 for customers with 1 cart to $58.27 for a customer with 10 carts.

2.8.10 Cost Impact 5: Increased Washing of Food Scraps Carts

The increase from quarterly to monthly washing for food scraps carts will be passed onto the customer at a monthly rate of $3.66 per cart. The average cost for cart washing per customer is $5.37, the highest cost is set at $36.58 for customers with 10 food waste carts.

2.8.11 Cost Impact 7: Cost of Vehicle Driver

Similar to the cost of the vehicle to service food scraps and yard trimmings carts in Cost Impact 4, the cost for the vehicle driver will also be distributed across the total number of food scraps and yard trimmings carts. The cost of hiring an additional driver for the new vehicle will increase the customers cost by an average of $9.32 per month. The customer

with the lowest cost impact will pay $7.58 for 1 container, and the customer with the highest cost impact will pay $75.76 for 10 containers.

2.8.12 Cost Impact 8: Vehicle Operating Expenses

Operating costs for the new vehicle are applied across all carts on service. The average operating cost paid by each customer is $1.76. The customer with the lowest operating cost will pay $1.43 for having 1 container. The customer with the highest operating cost will pay $14.33 for servicing 10 containers.

2.9 Recommendation to Closely Track Migration and MSW Right-sizing to Ensure Fund Stability

2.9.1 Migration.

As shown in the revenue impact analysis, our projections show that the migration of customers with large volumes of yard trimmings or food scrap recycling cart service to bin service will reduce collection cost payments from the City to NRWS through more efficient collection of higher-volumes of materials. Collection cost reduction as a result of bin to cart migration will result in a net change to the City's collection costs ranging from an increase of $55,926.87 caused primarily by the addition of food scraps services needed to achieve full SB 1383 compliance; to a reduction of $451,363.5 per year caused by the gradual migration from carts to bins as well as the reduction in service levels for yard trimmings customers predicted to decline by 10% per year.

Cart to bin migrations not only result in reductions in collection costs paid to NRWS, but also have the potential to reduce rates paid by customers through providing more efficient collection service when operationally feasible. However, many customers may not be aware of the option to migrate from carts to bins and will need technical assistance from NRWS and City staff to successfully consolidate their cart service into bin service without disruptions such as overages or underserving of containers. To this end, Appendix 6 includes a listing of accounts that would benefit from cart to bin migration. We recommend that these accounts be notified of the potential rate reductions associated with consolidating bins by the City to ensure the collection cost reductions projected in this study are actualized.

2.9.2 MSW Right Sizing.

To preserve the nexus between the commercial food scrap and yard trimmings rate being charged to customers reflecting the actual cost of providing the service, the revenue reductions the City will realize from MSW right-sizing was intentionally not included in the commercial and multifamily yard trimmings and food scraps rates shown in in Tables 1-4.

Based on our modeling, the revenue reductions resulting from MSW right-sizing of on-boarding accounts are unlikely to structurally impact the City's operating revenues and represent less than 0.5% of total rate revenue by year 5. However, we recommend that the City closely track the MSW service levels for all currently non-compliant 'onboarding' accounts as these accounts become compliant and right-size their service levels. Estimates of MSW revenue as of October 2024 was $766,406.40; while the calculated MSW revenue per

year based on the January 2025 listing was $617,149.44. This change in revenue may indicate more aggressive right-sizing, change in business operations or reflect closed businesses and should be explored further as this is a significant source of the City's revenue. We have included the 'baseline' MSW cubic yardage and rate revenues for all onboarding accounts in Appendix 5 - Current and Predicted Services – Current Food Scraps and Onboarding Accounts. As the on-boarding accounts implement the required organics collection service, on a semi-annual basis, we recommend that the City track any reductions in MSW revenue as a result of customer-right sizing to determine the impact of these activities on total aggregate MSW revenue. If the MSW revenue reduction impacts are significant (i.e. exceed 0.5% of total MSW revenue) and are resulting in the City's inability to cover certain costs, the City should consider using rate stabilization reserves, or other similar mechanisms, to maintain the balance of the City's budgeted funds.

2.9.3 Recommended Methodology to True Up Actual Migration Each Rate Year

As further explained in Section 3.8, the suggested rates are calculated as a result of the service configuration (size of the container, how many containers, frequency of pickups) and the distribution of various costs dependent on the total number of commercial lifts, and the total number of food scraps and yard trimmings containers (both carts and bins). The rates recommended here are conservative, and estimate the values of the dependent costs each year. These estimates can be amended to update the model with actual values of commercial and multifamily service levels each year. EcoNomics recommends the application of these actual values to examine potential rate adjustments and estimate total expected revenue. For use in the 5-year study, we have modeled the maximum probable impacts on the City's funds using moderate to aggressive migration and right-sizing scenarios. In the likely case that migration and right-sizing is not as prevalent as modeled in future years, the City may opt to adjust the food scraps and yard trimmings rates to reflect actual cost recovery.

3 Methodology

The methodology section provides the detailed analyses that support the findings in Section 2.

3.1 Methodology to Identify Revenue Impacts

Due to the difference in labor costs applied to multifamily properties, EcoNomics developed two different rates depending on commercial or multifamily service.

3.1.1 Revenue Impact 1: Increase in Rate Revenue from Current Commercial and Multi-family Yard Trimmings Customers Who do not Pay for this Service

Currently, the City does not charge for yard trimmings service. Over the next five years, the City aims to offer a singular commercial compostables rate for collection of both food scraps, yard trimmings and the combined collection of the two. The suggested rates for yard trimmings service are 'phased in' from years 1-4 until the actual full cost recovery rate is charged in year 5.

The current existing rates, and the modeled 2025 rates for Yard Trimmings (YT) are:

Current rate for 95-gal YT 1x/wk. (most common service):	$0
Expected rate for *commercial service* in 2025 based on cost projections for the most likely migration scenario:	$20.07
Actual phased in rate for *commercial service* in 2025 based on cost projections:	$4.01
Expected rate for *multifamily service* in 2025 based on cost projections for the most likely migration scenario:	$32.98
Actual phased in rate for *multifamily service* in 2025 based on cost projections:	$6.60

3.1.2 Revenue Impact 2: Decrease in Rate Revenue from Current Commercial Food Scrap Recycling Customers Who Currently Pay 75% of the Equivalent MSW Rate for this Service

Currently, Food Scraps recycling is offered at 75% of the cost of equivalent MSW service. The rates are phased in according to the equation for annual rate changes. Currently there is no 1 cubic yard bin, so a rate for this container was calculated by taking the rate for the 2 cubic yard bin and dividing by 2. The current existing rates and the modeled 2025 rates for Food Scraps (FS) are:

Current rate for 65-gal FS (most common service for FS):	$72.17
Expected rate for *commercial service* in 2025 based on cost projections for current services:	$18.84
Actual phased in rate for *commercial service* in 2025 based on cost projections:	$61.5
Expected rate for *multifamily service* in 2025 based on cost projections for current services:	$31.76
Actual phased in rate for *multifamily service* in 2025 based on cost projections:	$64.08

To moderate City rate revenue impacts as the commercial food scrap rate "ramps down" to the commercial compostables cost recovery rate and the YT rate "ramps up", the information below models how the new rate structure can be phased in over a 5-year period.

The table below shows the rates for both the 65-gallon food scrap container and the 95-gallon yard trimmings container as they are phased in over time for each recommended 5-year rate schedule. The rate of food scraps ramps down from the current rate to the cost recovery rate while the rate of yard trimmings ramps up from no charge to the cost recovery rate. The difference between the rates is driven by actual costs of providing the service that are dependent on the total number of lifts on service for all commercial and multifamily customers, the total number of containers (carts and bins) on service for multifamily properties, the total number of carts on service for both commercial and multifamily customers, the number of food scraps carts a customer has, and the total number of food scrap bins that are serviced and require extra capital costs. These variables are driven by migration assumptions, compliance projections, and yard trimmings service reductions.

Table 12: Phased-In Rates For Scenario 1

Rates for FW (0.325 CY) and YW (0.475 CY) with 1 Container, 1 Pickup

Year	Service Type	Commercial Rates	Multifamily Rates
2025	FW - 0.325 CY (65-gal)	$61.50	$64.08
2026	FW - 0.325 CY (65-gal)	$51.30	$56.64
2027	FW - 0.325 CY (65-gal)	$45.99	$54.29
2028	FW - 0.325 CY (65-gal)	$38.40	$49.85
2029	FW - 0.325 CY (65-gal	$30.60	$45.42
2025	YW - 0.475 CY (90-gal)	$4.01	$6.60
2026	YW - 0.475 CY (90-gal)	$8.52	$13.87
2027	YW - 0.475 CY (90-gal)	$17.96	$26.26
2028	YW - 0.475 CY (90-gal)	$25.15	$36.61
2029	YW - 0.475 CY (90-gal)	$32.18	$47.00

3.1.3 Revenue Impact 3: Increase in Rate Revenue from Currently Non-compliant Commercial Generators that Implement Food Scrap Recycling Programs in 2025.

Commercial Food Generators

Each of the onboarding accounts determined to need food waste was analyzed for: current collection volume of MSW, type of commercial property, and existing food waste collection services of similar accounts. Using industry expertise and knowledge, EcoNomics made predictions for the weekly volume of food waste collection services needed for each business or multi-family property to become compliant. Each food generator was investigated for the type of food waste produced and assigned a category depending on the specific type of food served. The following food types are offered as examples: “Heavy” consisted of restaurants with Mexican, Chinese, Thai, Italian, and Mediterranean foods due to their higher water/sauce content and the fact that many of these restaurants include a ‘scratch’ kitchen. The “Light” category consisted of ice cream shops, catering and specialty food shops, a theater and church. The “Pizza” category were all restaurants whose primary fare was pizza. The “Fast Food” category included McDonald’s, Jack in the Box and KFC. These categories were then used to assign a fixed volume of food scrap generation and adjusted for business size.

Multi Family Food Waste Predictions

After discussions with the City, the predicted food waste data set was updated to apply the general rule of assigning 8 gallons of food scraps volume per unit per week in all multifamily properties. These generation predictions informed the total volume of service needed to attain SB 1383 compliance.

3.1.4 Revenue Impact 4: Decrease in MSW rate revenue from commercial customers who 'right size' their MSW service levels as a result of incorporating commercial compostable service

As shown in the revenue impact analysis, our projections show that the right-sizing of MSW service will result in a reduction to the City's rate revenue in the amount of $8,533.022 per month when all SB 1383 programs are fully implemented. These projections roughly assume a 2:1 right-sizing scenario, where if 1 cubic yard of new organics service is added, the customer reduces its MSW service by roughly 0.5 cubic yard.

3.1.5 Overall Food Scraps and Yard Trimmings Revenue Impacts

The most likely migration scenario assumes that any customer with a weekly service of 1 cubic yard or more of food scraps or 1 cubic yard or more of yard trimmings will migrate to using fewer bins instead of multiple carts. In 2029 when the full phased in rates are charged, and all customers have migrated, this scenario produces an expected monthly revenue of $58,496.37. This is an annual reduction in rate revenue of $648,750.20 from the current food scraps revenue.

The table and plot below show the changes in revenue over time for both food scraps and yard trimmings. The yard trimmings revenue steadily rises as the phased in rates are applied each year from the current rate of $0. The food scraps revenue slowly decreases caused by the phasing in of the lower recommended cost-recovery rate.

Table 13: Scenario 1: Total Monthly Revenue by Waste Type

Waste Type	Year 0	2025	2026	2027	2028	2029
Food Scraps	$102,254.24	$90,910.19	$75,216.34	$60,906.05	$45,610.50	$27,552.97
Yard Trimmings	$0.00	$6,374.74	$12,764.36	$17,635.43	$25,613.75	$30,943.41
Total	**$102,254.24**	**$97,284.93**	**$87,980.71**	**$78,541.47**	**$71,224.25**	**$58,496.37**

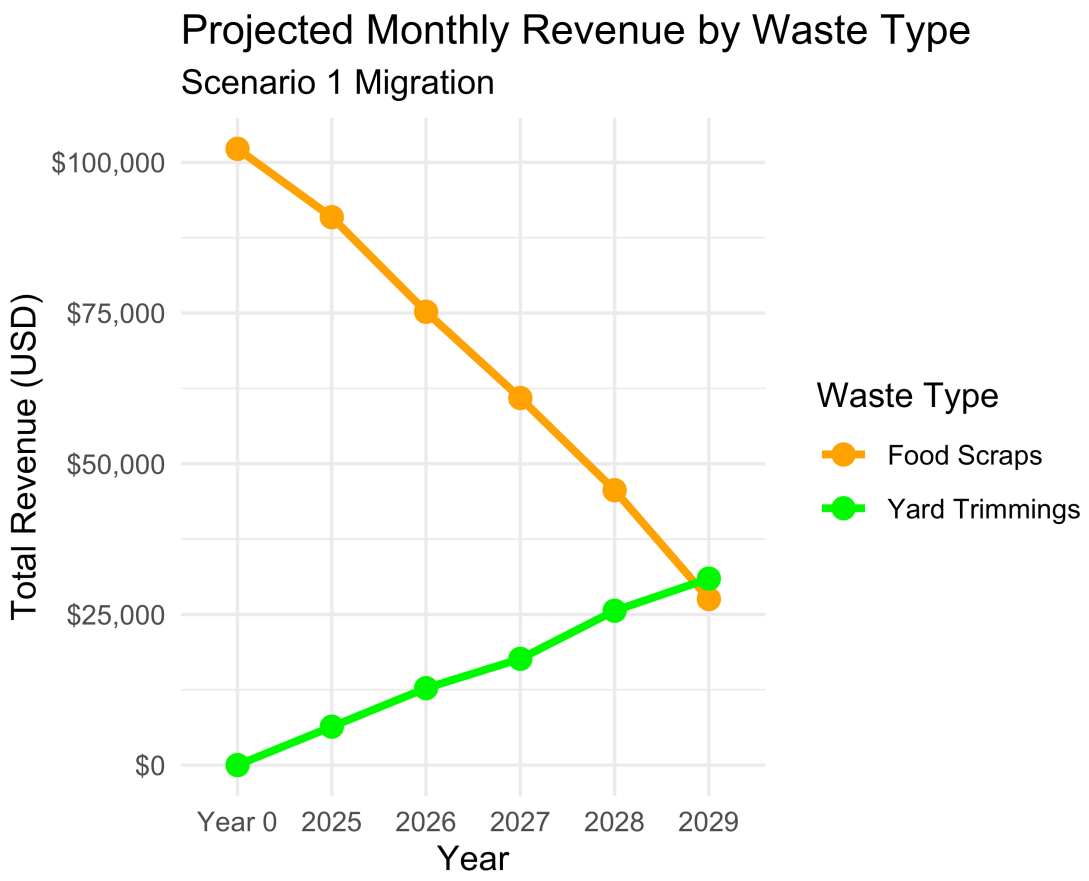

Figure 5. Expected Phased in Yearly Revenue by Waste Type

3.2. Methodology to Identify Cost Impacts

3.2.1 Cost Impact 1: Increase in Costs due to Need for Additional Staff For Multifamily Properties

The additional food scraps and yard trimmings collection service will require additional support in the collection of these materials in multifamily properties. The expected increase in compostables service will require an additional labor cost of $124,000.00 per year. This led to the development of a special rate for multifamily customers in order to fairly distribute the labor cost to the customers that will receive the service. Assuming a 40-hour work week, EcoNomics used the yearly salary to calculate the cost per minute of the additional staff's time and determined each container lift would require approximately three minutes to remove the container from its enclosure, stage the container for the driver, and return the container to the enclosure. This value was multiplied by 4.3 and applied to the multifamily compostable rate as a monthly cost per lift of $12.92 in 2025. Each year, the cost of labor was applied an inflation rate of 3.5% and multiplied by the number of food scraps and yard trimmings lifts at multifamily properties. As of January 2025 the number of food scraps and

yard trimmings lifts each week was 678. The cost per lift for the laborer varies each year as customer service levels change with the expected reduction in yard trimmings service.

3.2.2 Cost Impact 2: Increase in Cost due to Capital Expenses Associated with Bins and Liners

EcoNomics developed capital expenditure scenarios based on bin migration schedules and procurement costs. Plastic bin liners are required for food scrap collection in 1- and 2-yard bins to ensure metal bins do not rust from exposure to food scrap liquids, which are very corrosive. The bin and liner cost in 2025 is $997.04 per 1 cubic yard bin and $1,169.05 per 2 cubic yard bin. Any bins bought after 2025 were applied annual cost increments of 5.35% tied to inflation. Costs for the bins and liners were calculated based on the cost to the City during the predicted year of migration. In order to get the monthly cost charged to the customer, the cost of the bins and liners were applied an interest rate of 5% over a loan term of 60 months to distribute the cost to the customer across the lifetime of the equipment.

The total capital cost for bins and liners the City can be expected to pay over the five years of migration for 100 customers is $118,651.35. Over the course of 60 months from the time of migration, these generators will pay between $23.18 and $81.53 per month to cover these costs through the capital cost portion of their rate.

The table below shows the number of food scraps customers expected to migrate each year in Scenario 1, along with the number of bins needed to be purchased and the total cost per year according to pricing and inflation. The Total Capital Cost value was calculated at the cost expected to be paid by the City each year based on dynamic migration rates. Each customer was only assigned one bin in the migration service predictions so the number of new bins and migrated generators are the same. The pricing for each bin by year was calculated based on the actual bin size predicted for migration.

Table 14: Migration Summary by Year Scenario 1

Total Generators, Bin Quantity, and Capital Cost per Migration Year

Migration Year	Total Customers	Total Bin Qty	Total Capital Cost ($)
2025	4	4	$3,962.07
2026	11	11	$11,521.75
2027	5	5	$5,633.05
2028	24	24	$27,795.64
2029	56	56	$69,738.85
Total	**100**	**100**	**$118,651.35**

3.2.3 Cost Impact 3: Decrease in Collection Cost Payments to NRWS due to Reduction in Lift Costs

In order to determine the percentage each generator pays of the reconciliation lift payments made to NRWS, first the total number of lifts per container type was identified. When calculated, using the January 2025 commercial listing, the values were slightly different from those used in the attachment R report. The total lifts in attachment R were 10,829. A proportion of lifts for each container type was calculated using the values from the commercial listing. The number of baseline lifts are calculated by summing the number of lifts included in the current amendment (7,793), the number of lifts calculated to add additional Sunday service (150) and the number of lifts included for the SB 1383 collection (1,350). In 2027, an additional 600 lifts were added to the baseline value to accommodate for increased compostable collection.

For years 2025 –2029, Table 15 below shows the total estimated lifts for all services, the number of lifts over baseline, and the resulting monthly cost per lift that would need to be charged to each customer to recover NRWS collection payments. As more customers migrate from carts to bins in the moste likely migration scenario, the number of lifts are reduced as collection becomes more efficient.

Table 15: Collection Cost Overview By Year

Year	Total Lifts	Total Lifts over Baseline	Monthly Cost per Lift
2025	11,077	1,784	$6.10
2026	11,158	1,865	$6.72
2027	10,505	612	$2.34
2028	10,474	581	$2.37
2029	10,072	179	$0.76

Current Service

In Table 16 below, the "Total Lifts on Service" are calculated by summing the lifts (QTY*P.U.). The "Proportion of Total Lifts" represents the proportion of lifts for each container category. "Lifts over Baseline" is the total number of lifts over baseline multiplied by the proportion value, to determine how many lifts over baseline are attributed to each container type. The Lifts Over Baseline total is taken from the Attachment R report. The "Current Yearly Collection Cost" is calculated by multiplying the number of lifts over baseline for each category by the yearly cost per lift reconciliation value. The value used in this case was the one applicable to 2025. The "Cost per Lift" is calculated by dividing the collection cost by the total number of lifts taken from the Attachment R report.

Using the identified number of lifts over baseline the City is responsible for reconciling (1,536), identified in the attachment R report, the proportion was then applied to this value to get the number of lifts over baseline per container type. To calculate the total cost to the City, the yearly cost per lift value ($454.69 in 2025) was multiplied by the number of lifts over baseline. The total cost to the city for current collection services is $698,403.84 per year. This cost was then divided by the total lifts for each container type to get a yearly cost

per lift value of $64.49. The cost per lift value could then be applied to the number of lifts for each service by generator.

Table 16: Lifts Summary by Type

Breakdown of total weekly lifts, yearly costs, and proportions

Container Type	Total Lifts on Service	Proportion of Total Lifts	Lifts Over Baseline	Current Yearly Collection Cost	Yearly Cost per Lift (Current)
Recycling cart	3,342	28.37%	436	$198,104.37	$64.49
MSW cart	1,995	16.93%	260	$118,257.99	$64.49
Food Scrap cart	1,672	14.19%	218	$99,111.46	$64.49
Recycling bin	1,446	12.27%	189	$85,714.82	$64.49
Yard Trimmings cart	1,352	11.48%	176	$80,142.76	$64.49
MSW bin	952	8.08%	124	$56,431.88	$64.49
Cart clean	945	8.02%	123	$56,016.94	$64.49
Yard trimmings bin	72	0.61%	9	$4,267.96	$64.49
Food scrap bin	6	0.05%	1	$355.66	$64.49
Total	11,782	—	1,536	$698,404	—

Predicted Lifts

In order to calculate the new per lift cost depending on the addition or reduction in commercial lifts, the net number of new lifts added as a result of additional food scraps service and reduction in MSW caused by right sizing were calculated. The number of food scraps service lifts increased by 177, while the number of MSW service lifts were reduced by 52. The predicted net changes in lifts was 125 lifts. These values were then used to update the totals in the lifts by container type to calculate a new proportion of the number of lifts per container type above baseline. This methodology updates the numbers in all categories of container types and then multiplies the yearly additional lift cost to the new numbers. With the predicted lifts added, the new number of lifts over baseline is 1,661.00. The total cost to the city for predicted collection services is $755,240.09. This cost was then divided by the total lifts for each container type to get a cost per lift value of $68.95.

Table 17: Predicted Lifts Summary by Type

Breakdown of total lifts, cost, and proportions

Container Type	Total Lifts on Service	Proportion of Total Lifts	Predicted Lifts Over Baseline	Predicted Yearly Collection Cost	Cost per Lift (Predicted)	
Recycling cart	3,342	28.07%	466	$211,977.19	$68.95	
MSW cart	1,943	16.32%	271	$123,241.08	$68.95	
Food Scrap cart	1,849	15.53%	258	$117,278.82	$68.95	
Recycling bin	1,446	12.14%	202	$91,717.24	$68.95	
Yard Trimmings cart	1,352	11.35%	189	$85,754.98	$68.95	
MSW bin	952	8.00%	133	$60,383.69	$68.95	
Cart clean	945	7.94%	132	$59,939.69	$68.95	
Yard trimmings bin	72	0.60%	10	$4,566.83	$68.95	
Food scrap bin	6	0.05%	1	$380.57	$68.95	
Total	11,907	—	1,661	$755,240		—

Scenario Lifts

Scenario lifts were calculated in a similar manner as the predicted lifts, except the changes in lifts were applied to the "Total Predicted Lifts", since migration will take place after the predicted accounts are likely onboarded. The values used in the tables below represent raw values before validation and the rational actor tests and are intended to demonstrate the methodology used. The actual cost per lift applied in the rate tables for the most likely migration scenario can be seen in Table 15 above.

Scenario 1: Accounts with a combined volume on service of greater than 1 cubic yard migrate to bin service

The lifts for Food scraps service and yard trimmings service decreased by a net of 562 lifts when the cart service was migrated to bin service in this scenario. These values were used to update the "Total Lifts on Service" by container type to calculate a new "Proportion of Total Lifts". This was then applied to the number of "Lifts Over Baseline" to get the total lifts over baseline for each container type. With the reduction in lifts for migrated accounts, the new number of lifts over baseline is 179. The total cost to the city in 2029 for predicted collection services is $91,603.25 This cost was then divided by the total lifts for each container type to get an annual "Cost per Lift Value" of $9.09.

Table 18: Scenario 1 Lifts Summary by Type

Breakdown of total lifts, cost, and proportions

Container Type	Total Lifts on Service	Proportion of Total Lifts	Lifts Over Baseline	Scenario 1 Yearly Collection Cost	Cost per Lift (Scenario 1)	
Recycling cart	3,342	30.05%	293	$133,099.38	$43.14	
MSW cart	1,943	17.47%	170	$77,382.43	$43.14	
Food Scrap cart	1,268	11.40%	111	$50,499.70	$43.14	
Recycling bin	1,446	13.00%	127	$57,588.78	$43.14	
Yard Trimmings cart	1,146	10.31%	100	$45,640.90	$43.14	
MSW bin	952	8.56%	83	$37,914.60	$43.14	
Cart clean	945	8.50%	83	$37,635.82	$43.14	
Yard trimmings bin	72	0.65%	6	$2,867.49	$43.14	
Food scrap bin	6	0.05%	1	$238.96	$43.14	
Total	11,120	—	974	$442,868		—

Scenario 2: Accounts with a combined volume on service of greater than 2 cubic yards migrate to bin service

The lifts for Food scraps service and yard trimmings service decreased by a net of 346 lifts when the cart service was migrated to bin service in this scenario. These values were used to update the total lifts by container type to calculate a new proportion of the number of lifts per container type above baseline. With the reduction in lifts for migrated accounts lifts, the new number of lifts over baseline is 580. The total cost to the city for predicted collection services is $ 541,081.1. This cost was then divided by the total lifts for each container type to get a cost per lift value $51.62.

Table 19: Scenario 2 Lifts Summary by Type

Breakdown of total lifts, cost, and proportions

Container Type	Total Lifts on Service	Proportion of Total Lifts	Lifts Over Baseline	Scenario 2 Yearly Collection Cost	Cost per Lift (Scenario 2)
Recycling cart	3,342	29.28%	348	$158,427.64	$51.62
MSW cart	1,943	17.02%	203	$92,107.99	$51.62
Food Scrap cart	1,487	13.03%	155	$70,491.29	$51.62
Recycling bin	1,446	12.67%	151	$68,547.68	$51.62
Yard Trimmings cart	1,221	10.70%	127	$57,881.55	$51.62
MSW bin	952	8.34%	99	$45,129.60	$51.62
Cart clean	945	8.28%	99	$44,797.76	$51.62
Yard trimmings bin	72	0.63%	8	$3,413.16	$51.62
Food scrap bin	6	0.05%	1	$284.43	$51.62
Total	11,414	—	1,190	541,081	—

The collection cost relies on the number of weekly lifts and is most affected by the service configurations. A reduction in lifts reduces the amount paid to NRWS and significantly lowers collection costs.

3.2.4 Cost Impact 4: Increase in Cost due to Capital Expenses Associated with New Collection Vehicle

A new collection vehicle is planned to be purchased in 2027. This vehicle will service carts on the commercial and multifamily routes. It has an estimated initial cost of $721,000.00 and will be financed at a 5% interest rate over a loan period of five years. This cost will be distributed across the total number of food scraps and yard trimmings carts on service. This report explores the yearly costs through 2029.

3.2.5 Cost Impact 5. Increase in Cost due to Increased Frequency of Cart Washing

After review of the food scrap collection program it was decided to take the current quarterly schedule of cart washing for a cost of $12.50 per cart and increase the frequency of cart washing to one time per month. This increased the cost per cart to $38.25. This yearly washing cost was then divided by 12 to get a monthly cost and applied to the customer's monthly rate. The inflation rate per year for this cost was set at 3.5%.

3.2.6 Cost Impact 6: Decrease in Cost from Avoided Disposal

Density values for each waste stream are critical in estimating the processing cost component of the overall total cost for services.

Since the City is moving towards a universal compostables route and subsequent rate that combines food scraps and yard trimmings, a new density value was calculated in order to better estimate processing costs for both materials using the proportion of each type (food

scraps or yard trimmings) in the current service listing and the density values obtained from field collection. The new density value calculated was 282.96 lbs per cubic yard. Details of this process are described below.

Commercial service locations in Napa with high quantities of food scraps and yard trimmings were identified through the NRWS commercial service listing. These locations were visited with a platform digital scale and the carts were inspected for bin fullness, contents and weight. Empty carts were also weighed to correct for the weight of the cart when calculating approximate weight per cubic yard. After the mean weight of the empty carts were subtracted for each cart respective of their size, the weights were then corrected for bin fullness. The fullness of the carts were recorded as a percentage of fullness, and this percentage was divided by the weight of the contents of the cart to get a standardized weight of the material if the cart were full. To arrive at an approximate weight per cubic yard of material the standardized weight of the cart was then divided by the size in cubic yards of the cart. Empty carts were removed from the data set and summary statistics calculated to get the mean weight per cubic yard and standard deviation for each waste type (food scraps and yard trimmings).

Results

The table below shows the number of observations by cart size, the mean weight in pounds, and the standard deviation for the carts weighed while empty. These mean weights were removed from all raw weight measurements.

Table 20: Mean Weight per Cubic Yard by Cart Size

Empty Carts

Size	Count	Mean Weight (lbs.)	Std Dev (lbs.)
35-gal	3	22.87	0.06
64-gal	11	23.17	9.15
90-gal	7	29.78	6.94

After the remaining weight was corrected for fullness and standardized to weight per cubic yard, the means and standard deviation were calculated for each waste type and can be seen in the table below.

Table 21: Mean Weight per Cubic Yard by Waste Type

Includes standard deviation

Waste Type	Count	Mean Weight (lbs./CY)	Std Dev (lbs./CY)
FW	74	496.31	316.44
MSW	39	102.42	94.23
YW	38	152.40	127.31
YW/FW	1	86.45	NA

The figure below shows the variability in food scrap, MSW and yard trimmings weights that have been standardized by container size and bin fullness. The food waste measurements were highly variable.

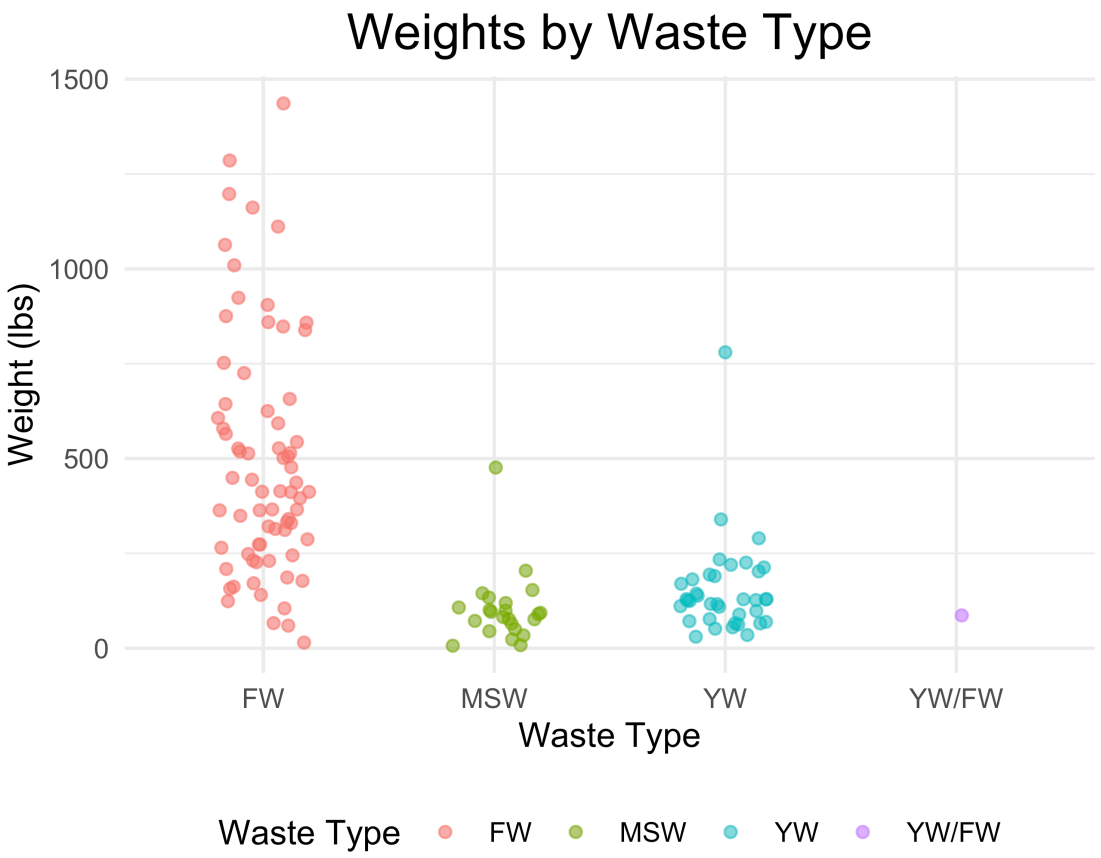

Figure 6. Distribution of cart weights standardized for fullness and volume.

Processing Costs Update

After internal discussion, the density values were updated to the values from the field data observations and used in the analysis of converting cubic yards on service to weight of materials collected. This weight was then used to calculate processing costs. In the cost analysis, if the densities used in the calculations are heavier than actual material being collected, as is likely the case when containers are collected without being full, the processing cost predicted will likely be much higher than the costs the City will actually incur.

The processing cost is calculated by multiplying the total cubic yards per month collected (weekly cubic yards * 4.3) by the cost per cubic yard for food scraps and yard trimmings processing as calculated from the 2023 report. This value takes into account the residuals that must be disposed of at the landfill and the price of processing the materials at the City's compost facility. The packaged organics rates were calculated using the packaged organics processing cost that was higher as a result of the higher percentage (30% vs. 10%) of residuals.

The factors that contribute the most to this value are the densities of the waste streams that apply a predicted weight per cubic yard of service in order to apply the price per ton processing charge and the amount of total weekly service.

3.2.7 Cost Impact 7: Increase in Costs due to Need for Additional Staff to Drive Vehicle

The new vehicle to service food scraps and yard trimmings carts requires a driver. The salary for this driver is applied an inflation rate of 3.5% each year. The cost is then distributed across the total number of carts on service. In the rate calculation the customer is charged this rate for each cart they have. The new truck is planned to be purchased in 2027 so this cost will apply starting in year 3.

3.2.8 Cost Impact 8: Increase in Costs for Operating Additional Vehicle

Operation costs for the new vehicle that services carts are distributed in the same manner as the costs for the driver and the new truck. Operating costs are increased each year based on the capital inflation rate of 5.35%.

3.3 Methodology to Model Downsizing for Yard Trimmings Customers

Because the current yard trimmings customers receive this service at no charge, EcoNomics modeled the reduction of yard trimmings services as a result of the right sizing that will likely occur as the yard trimmings rates are phased in over the next five years. In order to model this, the current total cubic yardage of yard trimmings service was reduced each year by 10%, and then the most likely service configuration applied to the new estimated total. All revenue and cost projections, along with the total lifts and total containers are updated each year to reflect this downsizing, as well as the effects of the customer migration explained below.

3.4 Methodology to Model Customer Migration

As part of the rate impact study, EcoNomics projected how many customers (commercial users) will migrate from multiple yard trimmings and/or food scraps carts to fewer bins, and calculated the total associated costs for collection, processing, labor and capital costs (new vehicle, needed bins and liners) dependent on the dynamic migration pacing detailed later in this section.

For the purpose of the migration analysis, it is assumed that no multifamily properties or Napa Valley Unified School District (NVUSD) accounts will migrate from carts to bins. Multifamily accounts will need to be reviewed separately so the quantity of carts maintains appropriate access for all residents.

To identify customers that may migrate from carts to bins, the total weekly cubic yards collected for each customer was analyzed by examining each type of container and multiplying the quantity of this container by the size in cubic yards and the frequency of pickups. These values were then summed across each of the two compostable types, yard trimmings and food scraps, to get a total weekly volume for each customer. This was important as many customers had a variety of size containers and services for the same waste type. These customers were then separated into three categories; Scenario 1 (1 or more cubic yard per week of food scrap or yard trimmings cart service), Scenario 2 (2 or more cubic yard per week of food scrap or yard trimmings cart service), and customers not likely to migrate. In order to calculate the net cost and rate impact of projected migration

from carts to bins, EcoNomics calculated the individual costs and revenue impacts and applied the phased rates for each of the 5-years. EcoNomics analyzed this data based on separate migration of food scrap and yard trimmings customers since the newly implemented phased rates will need to remain separate until the cost for each service reaches an equilibrium after year five. Currently there is no charge for yard trimmings collection service, while food scraps service has a charge that is 75% of equivalent MSW service. When assigning the combination bin size, quantity and pickups to migrating customers to reach as close as possible to the total weekly cubic yards of either food scraps or yard trimming, the algorithm used to predcit service migration allowed for the proposed bin service configuration to be up to .33 cubic yards less than the customer's current total weekly cubic yards on service.

In the January 2025 service listing, there were 713 commercial accounts with food scraps and/or yard trimmings service. The figure below shows the current distribution of carts and bins across all customers. After combining the total weekly cubic yards each service, it was estimated between 153 (or 17.98%) and 69 (or 8.11%) customers will likely migrate. Multiple migration scenarios were examined by EcoNomics to determine the range of potential revenue and cost impacts based on various levels of migration. Details including capital cost expenditures for each scenario are described in the sections below. Using these scenarios, EcoNomics developed a 'most likely scenario' that was used to develop the recommended rate and to calculate aggregate rate revenue and cost impacts for use in this study.

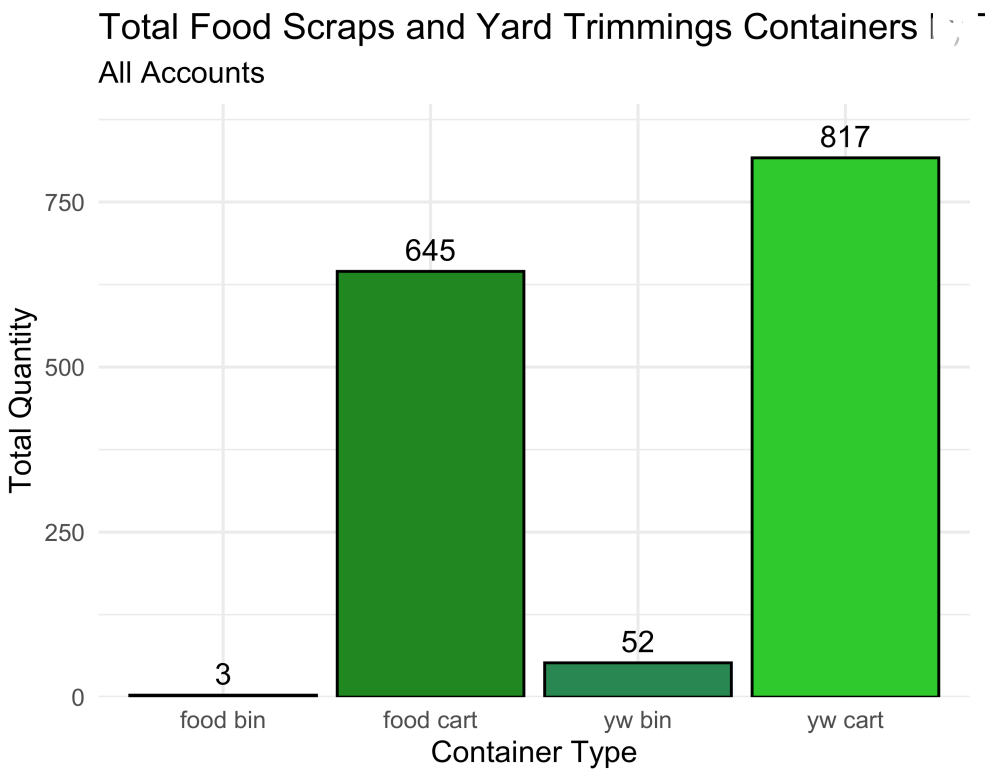

Figure 7. Number of Containers by Service Type for All Accounts

3.4.1 Most Likely Scenario

After operational review from NRWS as to the feasibility of swapping carts to bins in the identified locations, any customers who could not fit bins were removed from the data set. After calculating and applying the suggested rates for each scenario, the rates for each customer were compared before and after migration. It was assumed that only customers whose rate decreased due to migration would migrate. There were 3 customers that did not see cost savings after migration and all future service migration predictions expect these customers to remain with their current services. In this report the most likely scenario used to develop the suggested rates was Scenario 1, where the greatest number of customers were predicted to migrate therefore having the greatest impact on the resulting cost and revenue.

3.4.2 Scenario 1: Customers with Greater than 1 Cubic Yard Food Scraps and Yard Trimmings Service

Scenario 1 customers are those with *greater than one cubic yard (1CY)* per week of either food scraps or yard trimmings service. If a customer had more than 1CY of service for both services, these were expected to migrate to a bin for each waste type. There was 1 food scrap customer and 41 yard trimmings customers that already had only bin service. If the customer had current food scrap and/or yard trimming service in bins only, they were removed from the data set. If they had a combination of carts and bins they remained in the data set to be evaluated for migration. There remained 100 food scrap customers and 57 yard trimmings customers with cart service or cart and bin service that were reviewed for bin migration.

Within these customers there was a total of 277 yard trimmings containers, with 272 carts and 5 bins in their current service configurations. As for food scraps customers, there was a total of 350 containers, with 350 carts and 0 bins in their current service configurations. When reviewing the impacts of migration, the largest factor determining the change in cost for services will be the number of lifts. The number of lifts per week were calculated by multiplying the quantity of each container type and size by the number of pickups each week. The total number of current weekly lifts for both the food scrap and yard trimmings customers with more than 1 CY of service was 1,062.

The figure below shows the current distribution of carts and bins for food scrap accounts with more than one cubic yard of weekly service and yard trimmings accounts with more than one cubic yard of weekly service.

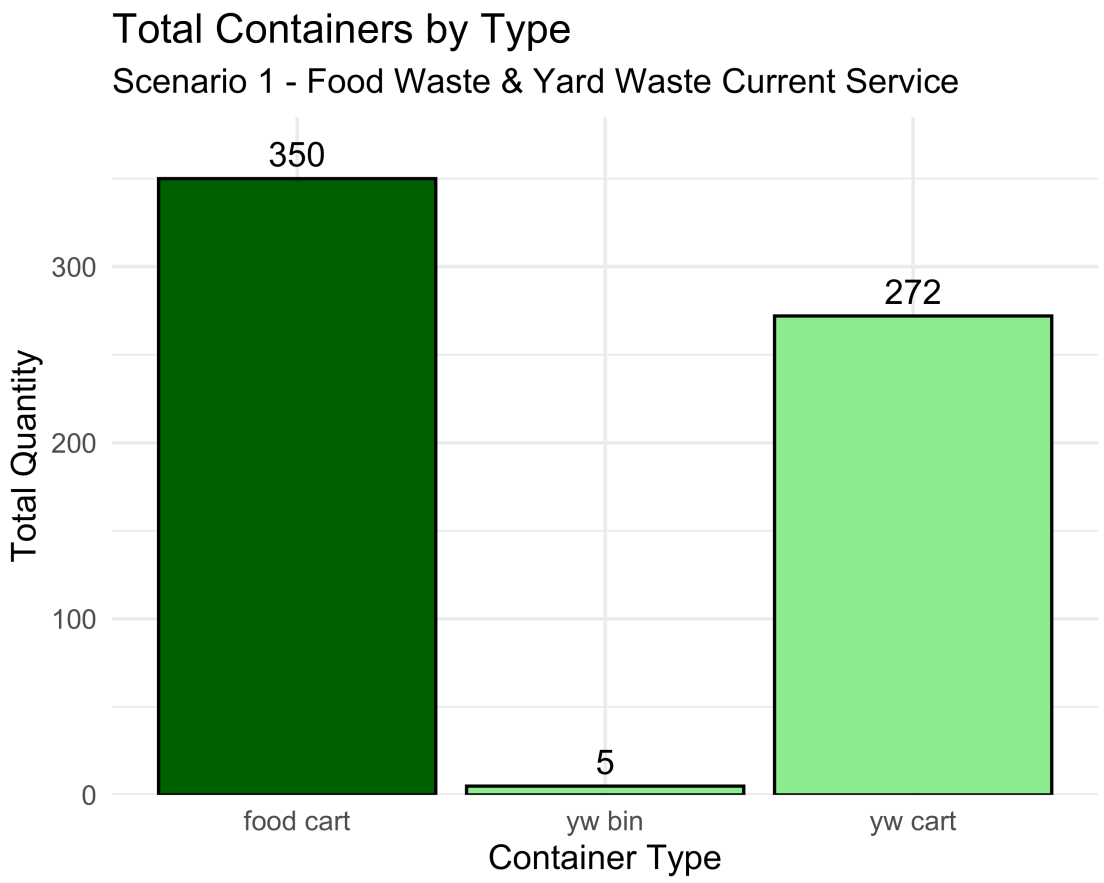

Figure 8. Number of Containers by Service Type for Scenario 1 Accounts

3.4.3 Scenario 2: Customers with Greater than 2 Cubic Yards Food Scraps and yard trimmings Service

Scenario 2 customers are those with greater than two cubic yard per week of either food scraps or yard trimmings service. If a customer had more than 2CY of service for both services, these were assigned a bin for each waste type. There were 1 food scraps customers that already had all their service collected in bins and 34 yard trimmings customers. If the customer had current food scrap and/or yard trimming service in bins only, they were removed from the data set. If they had a combination of carts and bins they remained in the data set to be evaluated for migration. There remained 41 food scraps customers and 28 yard trimmings customers with cart service or cart and bin service.

Within these customers there was a total of 173 yard trimmings containers, with 168 carts and 5 bins in their current service configurations. As for food scraps customers, there was a total of 209 containers, with 209 carts and 0 bins in their current service configurations. The number of lifts per week were calculated by multiplying the quantity of each container type and size by the number of pickups each week. The total number of weekly lifts for all food scraps and yard trimmings customers was 680.

The figure below shows the current distribution of carts and bins for food scrap accounts with more than two cubic yards of weekly service and yard trimmings accounts with more than two cubic yards of weekly service.

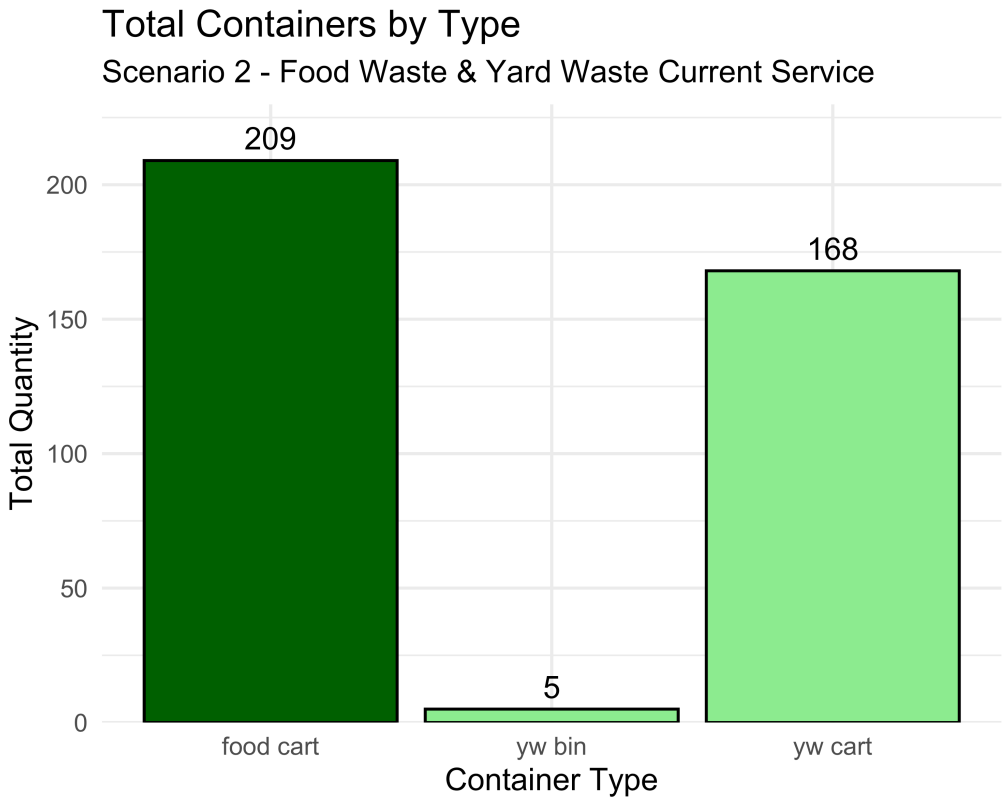

Figure 9. Number of Containers by Service Type for Scenario 2 Accounts

3.5 Dynamic Migration Pacing

3.5.1 Logistic Growth Model

Migration pacing was calculated using a logistic growth model. This model uses the total number of customers expected to migrate, the rate of migration, and the year when the migration rate peaks, or the inflection point.

For each scenario, the fraction of customers expected to migrate each month over the 5-year period was calculated to see the effects of migration in terms of costs. Migration reduces revenue and lifts while slightly increasing cubic yards on service. Cumulative costs were aggregated based on the migration status of the customers each month to create a time series of total costs.

Yard Trimmings Customer Pacing

Customers with current yard trimmings service receive this service at no charge, presenting a strong motivation to review and cut costs early. In this model, we assumed the majority of customers with yard trimmings service (80%) will migrate within the first two years. In the

model, potential migrating customers whose rates will decline are randomly assigned migration months to calculate real time expected annual revenues and costs.

Food Scraps Customer Pacing

As the recommended food scraps rate is phased in, customer rates will be declining and likely to delay migration. The pacing model for food scraps thus shows an inverse relationship to pacing for yard trimmings migrators. In this model, it was assumed the majority of food scrap customers will migrate near the end of the five year phased in rate period, if this results in a monthly cost savings. See section Section 2.8.4 for detailed information on the effects to customer rates.

Scenario 1

Figure 10 shows the monthly number of food scrap and yard trimmings migrators based on the logistic growth model described above. The yard trimmings migrators (green line) migrate quickly in years 1-3 as the rates are phased in and then decrease the rate of migration in years 4 and 5. Inversely, food scrap migrators (orange line) migrate slowly in years 1-3 and then increase the rate of migration in years 4 and 5. The blue shows the total predicted lifts and how they change over time with migration.

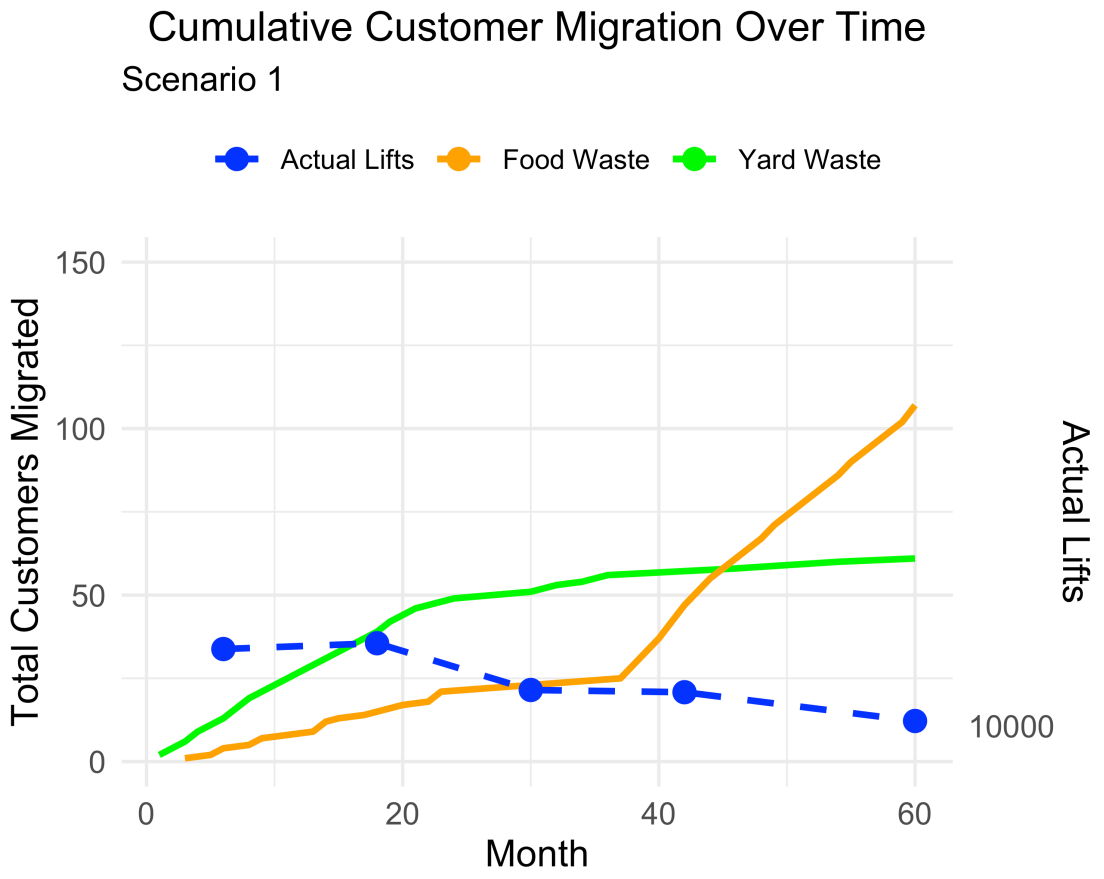

Figure 10. Scenario 1- Number of Migrating Accounts and Relevant Lifts for Those Accounts over Time

The figure below shows the cumulative costs associated with food scrap migrators and yard trimmings migrators each month. The dashed lines represent the current costs (processing and collection costs), while the solid lines represent the cost as a result of migration. For comparison, costs are presented in 2029 values throughout the time period of five years and are only presented for the number of accounts wh migrated each month. The values are cumulative across all migrated customers. Initially, costs between accounts that have migrated and those who have not migrated are similar. The costs of customers who migrate to bins for yard trimming and food scraps service remains slightly lower as all customers begin to migrate.

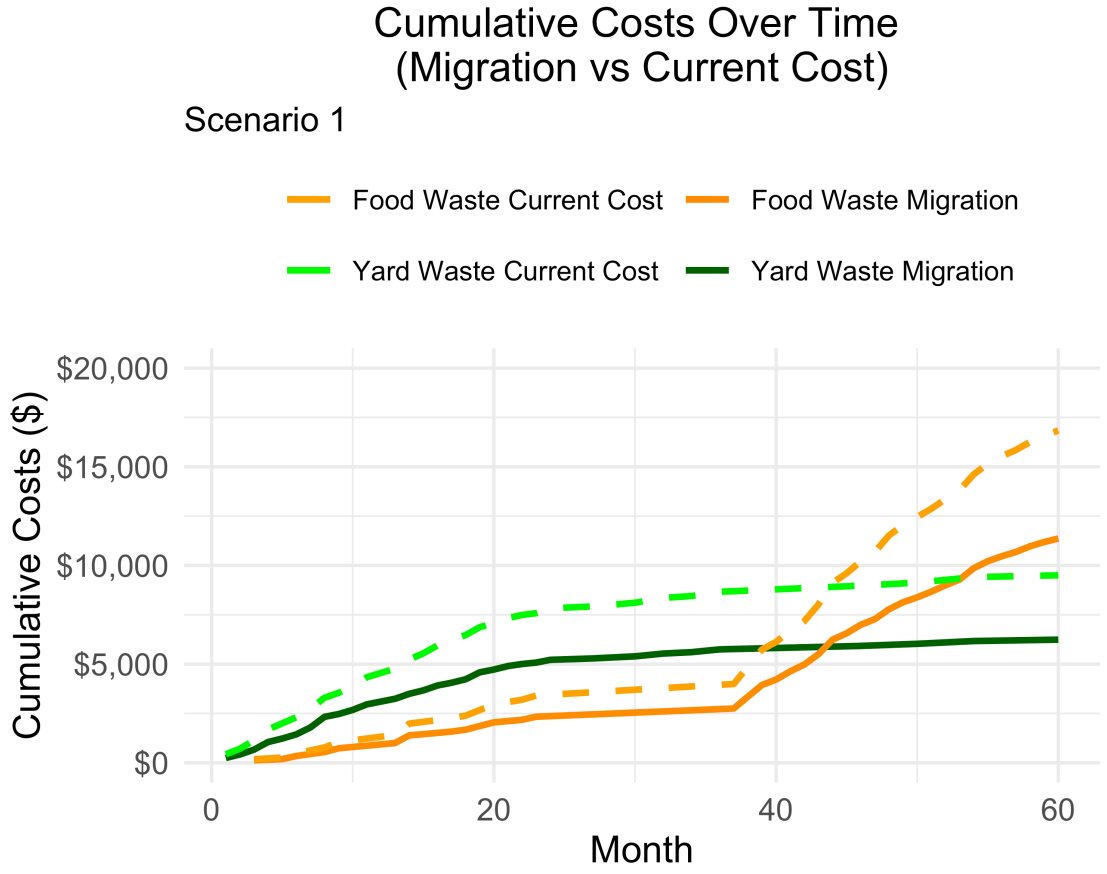

Figure 11. Scenario 1- Number of Migrating Accounts and their Processing and Collection Costs

Scenario 2

The figure below shows the number of food scrap migrators and yard trimmings migrators each month based on the logistic growth model. The food scrap migrators (orange line) migrate slowly in years 1-3 and then increase the rate of migration in years 4 and 5. The yard trimmings migrators (green line) migrate quickly in years 1-3 as the rates are phased in and then decrease the rate of migration in years 4 and 5.

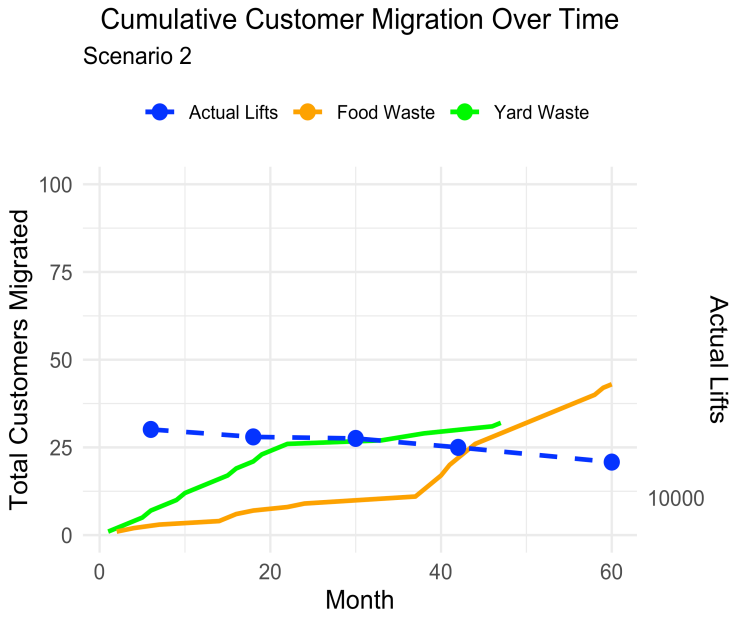

Figure 12. Scenario 2- Number of Migrating Accounts and Relevant Lifts for Those Accounts over Time

The figure below shows the cumulative costs associated with food scrap migrators and yard trimmings migrators each month. The dashed lines represent the current costs while the solid lines represent the cost following migration.

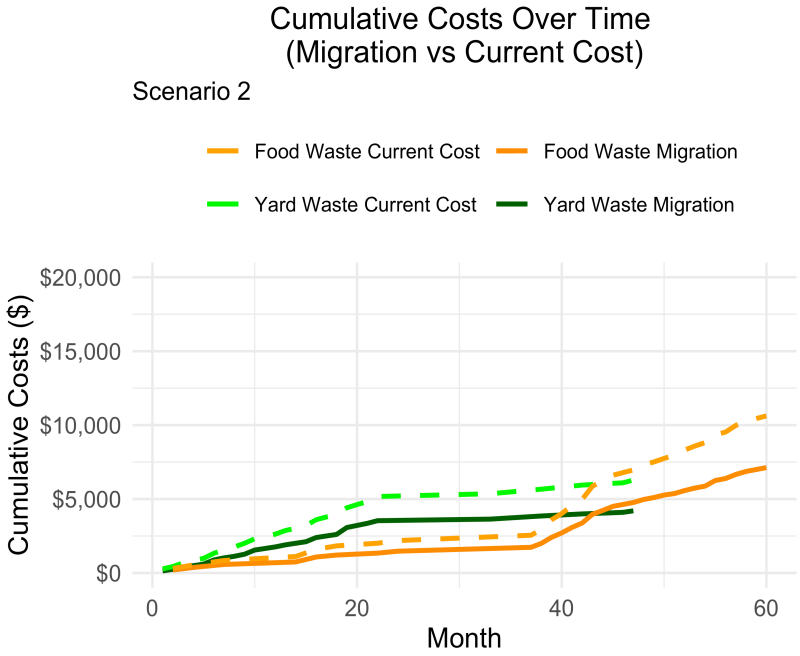

Figure 13. Scenario 2- Number of Migrating Accounts and Processing and Collection Costs for Those Accounts over Time

3.6 Exploring patterns for migrating customers

Scenario 1

In order to explore the relationship between migrators who experienced a cost decrease after migrating, a plot was created to compare weekly cubic yards of service and rate savings. As shown in the figure below, rate decreases directly related to the total volume of cubic yards on service. The more cubic yards on service a customer had, the larger their cost savings.

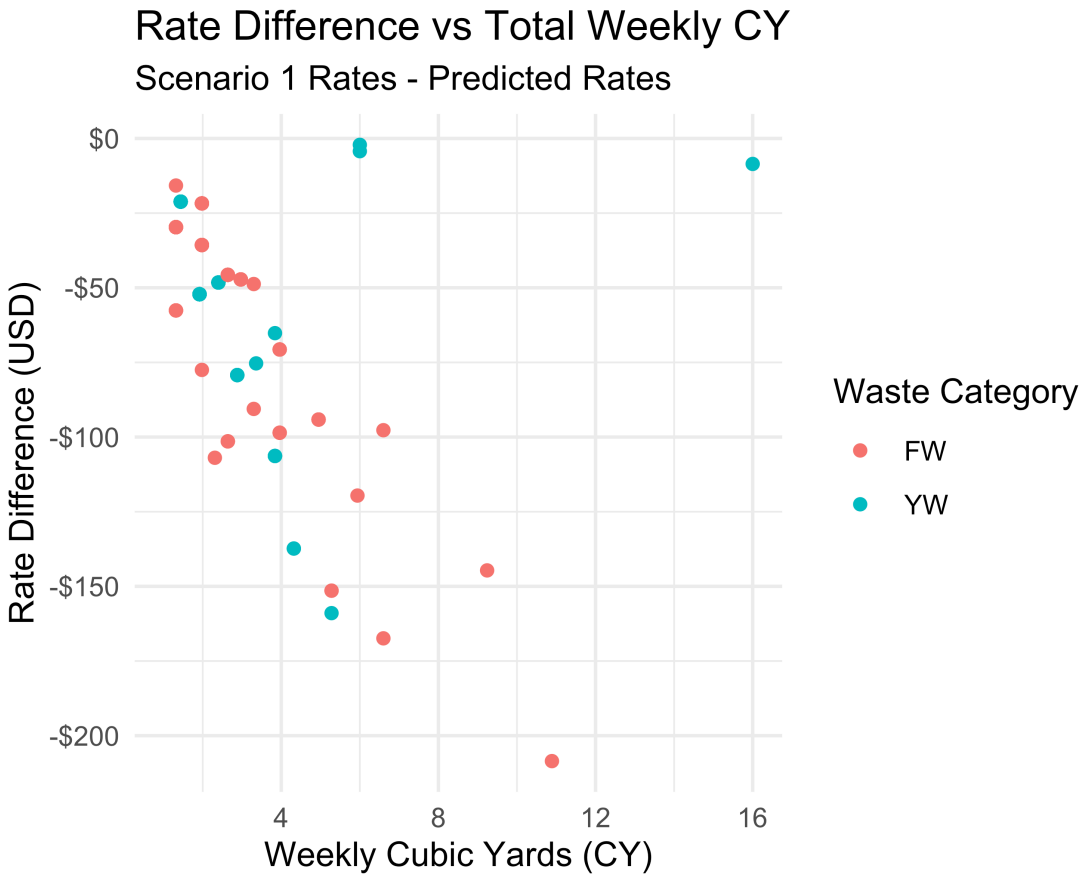

Figure 14. Difference in Non-Migrated vs. Migrated Rate and Total Cubic Yards in Scenario 1 Accounts

Scenario 2

This plot was created to view the relationship between weekly cubic yards and rate savings.

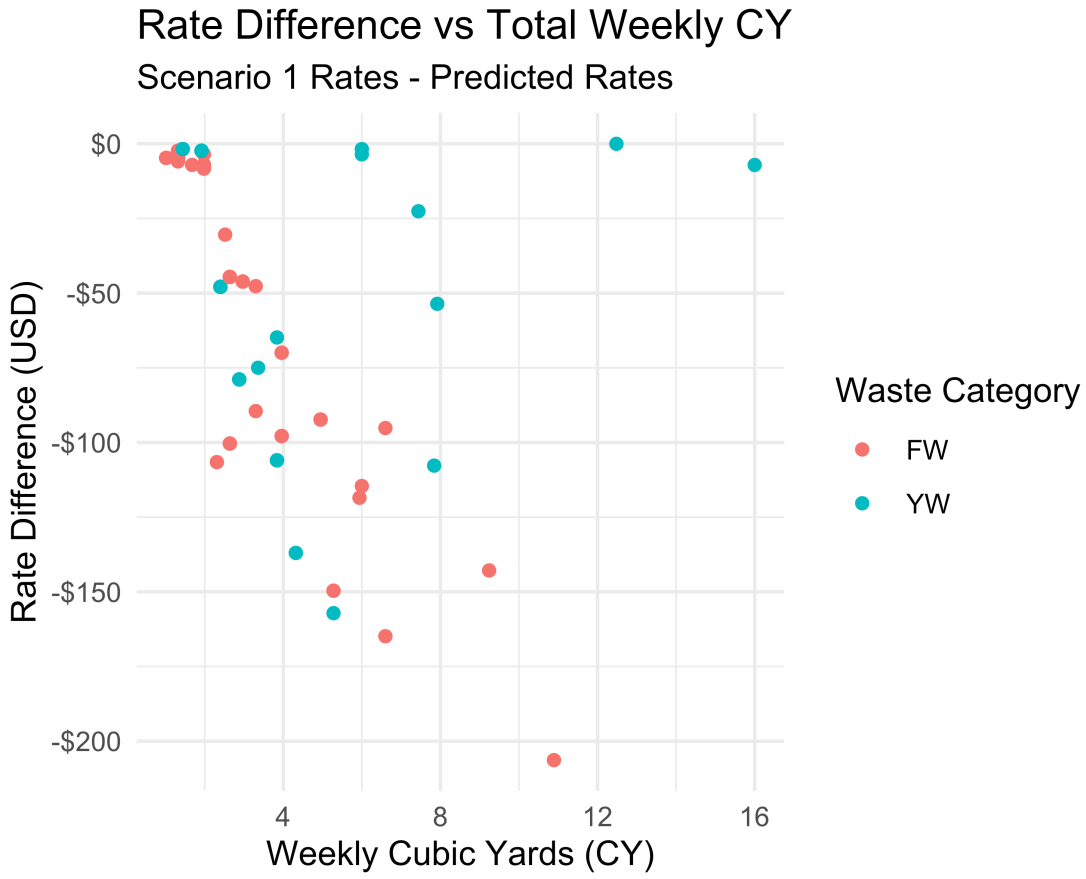

Figure 15. Difference in Non Migrated vs. Migrated Rate and Total Cubic Yards in Scenario 2 Accounts

3.7 Methodology to Model Phased-in Rates

3.7.1 Structure of the 5-year phase-in period

In order to phase in the suggested rate changes, the annual rate change for each individual customer was calculated for current food scraps and yard trimmings customers. The formula for calculating the annual rate change is shown below:

Annual rate change = (Expected rate - Current rate) / # of years (in this case 5)

A function was created that computes phased-in rates for food waste and yard waste services, with rates increasing over time until Year 5 when the full cost is charged. In order to arrive at the correct expected cost, which translates to the expected rate, we calculated each of the components separately according to service specifications, year, any amortization that may occur on up front costs, and the respective inflation rates for each type of cost. These expected rates were then used as a base rate, where the customer was charged a proportion of the change in rate between what they are currently paying and the expected rate for each year. The proportion was determined by the number of years the rate was being phased in, so for a 5 year phase in, the customer is charged 20% of the expected rate the first year, 40% of the expected rate for year two, 60% of the expected rate for year three and 80% of the expected rate for year four.

3.7.2 Final Rate Calculation

For each service type (FW/YW) and container size (CY):

Rate = Processing Cost + Collection Cost + Capital Cost + Labor Cost + Vehicle Cost + Driver Cost + Operating Cost + Washing Cost

Rates were calculated based on dynamic modeling using the current commercial service listing, the accounts predicted to add food scraps service by 2026, and the dynamic migration pacing expected and the resulting service configurations each year.

1. Processing Cost

Formula: Processing Cost = Monthly Compostable Processing Cost × Container Size (CY) × Pickups per Week × Number of Containers

Using the updated density values from field data observations, the monthly processing cost per cubic yard of compostables collected is $29.40 for food scraps and yard trimmings combined. The processing cost for accounts on the packaged organics rate will incurr a cost of $38.88 per cubic yard.

Notes: Processing cost values were updated at the yearly price per ton. Directly scales based on total cubic yards collected at monthly values.

2. Collection Cost (Dynamic Calculation)

Formula:

Collection Cost = Monthly Collection Cost per Lift x Pickups per Week × Number of Containers

Lifts Over Baseline = Number of total commercial lifts in that year - baseline lifts Collection Cost per Lift = Lifts Over Baseline x Cost per Lift / total lifts

The total number of lifts for all generators in each scenario was calculated based on adding or subtracting the change in lifts from what is currently in the calculations (10,829) and subtracting the baseline number of lifts (9,293).

Notes: Updated every two years at the cost per lift from Attachment U. Directly scales based on total lifts over baseline.

3. Capital Cost (Only for FW Bins ≥ 1 CY)

Formula:

Capital Cost = Bin Cost (CY) + Liner Cost (CY) capitalized at 5% interest paid over 5 years

This cost only applies to food scraps bins if container size ≥ 1 CY. The bin and bin liner costs are multiplied by a 3% capital cost charge, this cost is recuperated over the next five years with a monthly charge paid by the generator over five years. The cost for a 1 cubic yard bin with liner is $997.04. The cost for a 2 cubic yard bin with liner is $1,169.05.

Notes: Bin and Liner costs are calculated according to the year of migration and apply a capital cost interest rate to the current (2025) price quote. Directly scales based on the number of food scraps bins added per customer. City will need to ensure monthly payments extend into the next rate schedules for customers who migrate after year 1 and will only have paid a portion of the 5 year term.

4. Labor Cost (Dynamic Calculation, MF properties only)

Formula:

Labor Cost per Lift = Labor Cost per Minute x 3 Number of Weekly Pickups x Number of Containers

Using the yearly salary and assuming a 40 hour work week, the labor cost per minute was calculated. It was assumed each lift assistance took three minutes. This cost was then multiplied by the number of containers times the number of weekly pickups or the weekly lifts, and then multipled by 4.3 for a monthly cost for all lifts.

Notes: Labor costs increase at an inflation rate each year. The customer is charged a flat rate per lift.

5. Vehicle Cost (Dynamic Calculation)

Formula:

Vehicle Cost = (Monthly payment for the loan of the vehicle / Total Containers) x Number of Containers

Notes: Only applies for rates starting in 2027 when the vehicle is set to be purchased. Vehicle Cost was initially charged a 3% capitalization rate before applying the formula to calculate the total loan amount. The term payment is 5% interest over 60 months. The cost is distributed across the total number of carts updated dynamically due to migration. The customer is charged a flat rate per container.

6. Vehicle Driver Cost (Dynamic Calculation)

Formula:

Driver Cost = (Monthly Driver cost / Total Containers) x Number of Containers

Notes: Driver costs increase at an inflation rate each year. Total carts are updated each year dependent on migration and resulting service configurations. The customer is charged a flat rate per container.

7. Operating Cost of the New Vehicle (Dynamic Calculation)

Formula:

Operating Cost = (Monthly Operating cost / Total Containers) x Number of Containers

Notes: Operating costs increase at an inflation rate each year. Total carts are updated each year dependent on migration and resulting service configurations. The customer is charged a flat rate per container.

8. Washing Cost of Food Waste Carts (Dynamic Calculation)

Formula:

Washing Cost = Washing Cost x Number of Containers / 12

Notes: Washing costs increase at an inflation rate each year. Charge only applies to food scraps carts. The customer is charged a flat rate per container.

4 Conclusion and Recommendations

4.1 Summary of Key Findings

Commercial and multifamily food scrap and yard trimmings service configurations will likely change as the current rate structure is phased out and the new rate structure is phased in. The most probable changes include generators reducing their service for yard trimmings as they begin to evaluate their service needs and 'migrate' from having multiple carts to bins where operationally feasible. In arriving at a cost recovery rate, the rates are primarily driven by the processing cost of collecting each material and directly relate the total cubic yards on service. Cart customers will incur additional costs as a result of the new equipment and staff to service these containers since these additional operating costs are included in the cart rate structure. The rates for multi-family carts include additional labor costs needed to access the containers in space constrained areas where direct access by the vehicle is limited. With these additional costs on multi-family carts driving the rates higher, we expect a broader degree of right-sizing and migration to bins, were operationally feasible.

4.2 Implications for City Budgeting

The current rate for food scraps, which is offered at 75% the equivalent rate of existing MSW service, is much higher than actual costs of service and therefore contributes disproportionately to the City's fund above the actual cost of providing the service. As the new rate structure is phased in, the projected 'loss' in revenue from the current food scrap rates offered at 75% of MSW rates are partially made up by the reduction in processing costs of materials currently being sent to the landfill that are actually compostables, the addition of rates for yard trimming service, and the reduction in collection costs as service levels adjust to more accurately reflect customer needs. The final rates recommended in this report are meant to cover all costs associated ***directly*** with the collection and processing of the materials. Of these various cost components, all of them, except for the collection cost, were created conservatively and function to cover the expected costs if our predictions about migration, service level adjustments, SB 1383 compliance, and MSW right sizing are correct. If our predictions are not correct, and instead there is less migration, fewer service level adjustments, and less MSW right sizing, the rates will lead to increased revenue to the fund in comparison to their actual cost of providing service (i.e. the rates will more than cover the cost of providing service). In the case of the collection payments, or lifts over baseline that require compensation to NRWS, if our predictions are incorrect and the number of lifts do not decrease as expected, the City may be required to use rate stabilization reserves in order to cover the difference in the cost and the cost per lift charge being applied to the rates. The maximum expected amount of additional funds required if there are zero reductions in commercial or multifamily lifts is approximately $400,000 annually by year 5. It is also recommended the rate stabilization reserves be used to cover the difference in actual costs of providing the organics collection service and the rates received by the City in years 1-4 as the full cost-recovery rates are phased in.

Because the algorithm to develop each year's rates is based on actual and predicted values for the number of containers (carts and bins) and the number of total lifts, it is recommended that as these values change each year based on actual generator behavior, the actual migration and right-sizing levels replace the predicted values to develop a rate that covers actual expected costs. This will help cover costs resultant from changes in service levels based on actual levels of migration and right sizing, both for MSW and yard trimmings. We recommend this retroactive 'truing-up' of the costs of actual migration levels vs predicted migration levels occurs annually. In addition to migration levels, the reduction in MSW revenue caused by right sizing should be monitored, as well as the changes in yard trimmings service that may be caused by updating service levels to align with actual needs and the transition to yard trimmings being self-hauled by landscapers.

5. Appendices

Appendix 1:2023/2024 Rate Report - Click on this link to view the word document in Dropbox

Appendix 2: Commercial Rate Tables – Yard Trimmings and Food Scraps – Click on this link to view the excel file in Dropbox

Appendix 3: MF Rate Tables – Yard Trimmings and Food Scraps - Click on this link to view the excel file in Dropbox

Appendix 4: Packaged Organics Rate Tables – Commercial and Multifamily - Click on this link to view the excel file in Dropbox

Appendix 5: Current and Predicted Services – Current Food Scraps and Onboarding Accounts - Click on this link to view the excel file in Dropbox

Appendix 6: Potential Migrators – Current and Migration Service Information - Click on this link to view the excel file in Dropbox

Appendix 7: Constants used throughout analysis - Click on this link to view the excel file in Dropbox