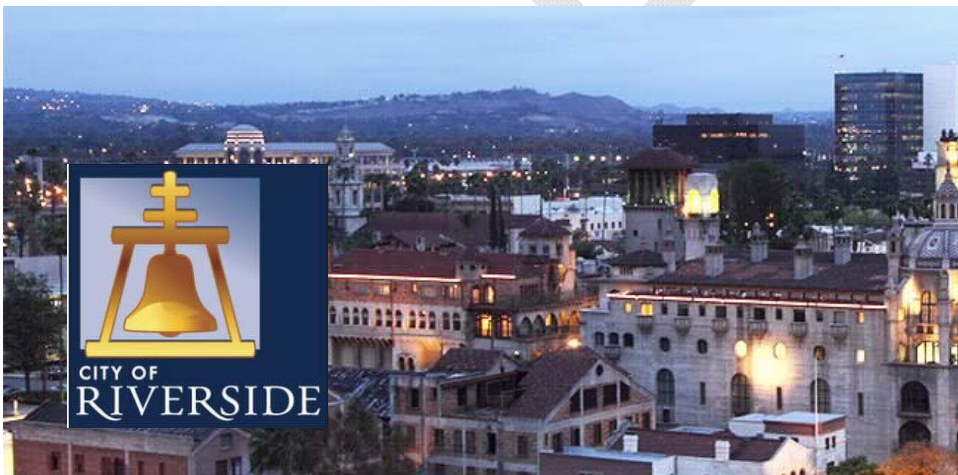


DRAFT REPORT

**Solid Waste and Recycling Program
Review Economic and Strategic Study
(Collections, Sweeping and Processing)**



SUBMITTED TO:

City of Riverside, CA

September 19, 2019

This page intentionally left blank.

DRAFT

Table of Contents

Table of Contents

Executive Summary.....	1
Objectives.....	1
Background	1
The Challenge of Municipal Operations.....	2
Major Findings	2
Major Recommendations	11
Report Structure	15
Section 1: Background.....	15
Section 2: Legislative Challenges.....	15
Section 3: Residential Collection Operations and Options.....	15
Section 4: Franchised Collection Alternatives	15
Section 1: Introduction and Background	16
1.1 System Overview	17
1.1.1 Residential	17
1.1.2 Street Sweeping	18
1.1.3 Commercial & Multi-Family Dwelling.....	19
1.1.4 Processing.....	19
1.1.5 Food Waste	19
Section 2: Legislative Challenges.....	20
2.1 Summary of Legislative Requirements.....	20
2.1.1 AB 341 – Mandatory Commercial Recycling	20
2.1.2 AB 1826 – Mandatory Commercial Organics Recycling	21
2.1.3 SB 1383 – Short-Lived Climate Pollutants	22
2.1.4 AB 939 – Mandatory Solid Waste Diversion Rates.....	24
2.1.5 AB 1594 – Waste Management.....	24
2.1.6 CALGreen Building Code.....	24
2.1.7 AB 1669 – Displaced Employees, Service Contracts, Collection and Transportation of Solid Waste	25
Section 3: Residential Collection Operations	26
3.1 Assessment of Vehicle Fleet.....	26
3.2 Analysis of System Workloads and Number of Required Routes	31
3.2.1 Required Number of Routes Based on Industry Standards	32
3.2.2 Required Number of Routes Based on Time and Motion Analyses	33
3.3 Required Division Investment	34
3.4 Outsourcing	36
3.4.1 Methods Used to Provide Collection Services.....	36
3.4.2 Municipal Versus Outsourced Operations in California	36
3.4.3 Pros and Cons of Municipal and Outsourced Services	37

R3

Table of
Contents

Section 4:	Franchised Collection Alternatives	39
4.1	City Municipal Code.....	39
4.2	Residential Franchised Collection Alternatives	39
4.3	Commercial Franchised Collection Alternatives.....	39
4.4	New Contract and Municipal Code Language	41

Tables

Table ES-1: Riverside Refuse Fund 5-Year Financial Plan.....	6
Table ES-2: Minimum Recommended FY 2020/21 Rate Adjustment	7
Table ES-3: Rate Adjustment to Fully Fund Current Refuse Fund Operations.....	7
Table ES-4: Comparison of Division Versus Burrtec Annual Cost per Account.....	8
Table ES-5: Refuse Fund Costs that Remain if Collection Outsourced	9
Table ES-6: Street Sweeping Costs that Remain in Outsourced	11
Table 1.1: Number of Customers by Account Type	17
Table 1.2: 2019 Fee Schedule	18
Table 1.3: Additional Cart Rates	18
Table 2.1: Green Material Used as ADC, 2017 and 2018, All Landfills.....	24
Table 3.1: Fleet Maintenance Financials.....	27
Table 3.2 Vehicle Replacement Schedule	29
Table 3.3: Annual Vehicle Ownership Cost	31
Table 3.4: Average Accounts per Route (Drive-Bys)	32
Table 3.5: Projected Number of Additional Routes Based on Industry Standards.....	33
Table 3.6: Projected Number of Additional Routes Based on Time and Motion Analysis ..	34
Table 3.7: Riverside Refuse Fund 5-Year Financial Plan.....	34
Table 3.8: Minimum Recommended FY 2020/21 Rate Adjustment	35
Table 3.9: Rate Adjustment to Fully Fund Current Refuse Fund Operations	36
Table 3.10: Advantages / Disadvantages of Solid Waste Collection Service Methods.....	37

R3

Attachments

Attachment 1	Rate Adjustment History
Attachment 2	Solid Waste Collection Outsourcing Cost Analysis
Attachment 3	Breakeven Franchise Fee Calculation
Attachment 4	Street Sweeping Outsourcing Cost Analysis
Attachment 5	Refuse and Recycling Daily Route Workloads

Table of Contents

R3

Executive Summary

Objectives

- To project the City's net cost of outsourcing the Solid Waste Division's (Division) residential collection operations to the private sector.
- To conduct a review of the Division's operations with the goal of identifying opportunities for improved operational and financial performance.
- To project the additional investment needed to bring the Division's operations in line with industry standards.
- To project the level of residential rate increases that will be necessary to:
 - Support that additional investment;
 - Fully fund the Division's annual operating costs; and
 - Achieve and maintain an adequate level of working capital (i.e., operating reserves)
- To identify alternative structures to the City's existing districted residential and non-exclusive commercial collection systems, and provide recommendations for collection contract terms and conditions, and municipal code revisions to align those documents with current solid waste management regulations and requirements, and best management practices.

Background

Residential Collection Services

Weekly residential trash, recyclables, and green waste collection services in the City are provided by both the Division and Burrtec Waste Industries (Burrtec), which operate in separate areas of the City. The Division services approximately 41,000 accounts while Burrtec services approximately 26,000. Burrtec and the Division charge the same rates, which are regulated by the City. Burrtec's contract expires on June 30, 2020. The City is responsible for providing and maintaining carts for both its residential accounts and Burrtec's accounts, and for customer service and billing for all residential customers.¹

Commercial Collection Services

Commercial services are provided by three (3) authorized haulers (Athens Services, Burrtec, and CR&R Waste Services) which compete for commercial accounts throughout the City. The City regulates commercial rates, which are the same for all three haulers. The commercial contracts all expire on June 30, 2023.

¹ Burrtec receives some customer calls, but the City's 311 call center processes those calls as well as all other customer service calls.

CalRecycle Corrective Action Plan

The City was required by CalRecycle to create and implement a corrective action plan to support the City's compliance with AB 341 (mandatory commercial recycling) and AB 1826 (mandatory commercial organics recycling). In February 2019, the City provided CalRecycle with its corrective action plan. In August 2019, CalRecycle directed the City to take significant steps within six months to be in compliance.

The City is currently coordinating with the commercial haulers regarding the expansion of their commercial organics services and anticipates receiving proposals from each of the three commercial haulers by September 30, 2019, specific to AB 1826 compliance efforts.

SB 1383

SB 1383 represents the most sweeping solid waste management legislation in 30 years. The City will need to enhance its residential and commercial collection systems to provide for the collection of organic material (e.g., food waste, yard waste) from all residential and commercial accounts by January 1, 2020, and meet the other SB 1383 requirements, including public education, and regulatory monitoring and enforcement.

The Challenge of Municipal Operations

The position the City is now in with respect to the need to capitalize its municipal solid waste collection fleet, increase staffing, increase rates and make other necessary operational changes is not atypical of many other municipal operations the R3 Team has reviewed. Within the structure of a typical city, municipal solid waste operations bat third, behind police and fire - as it should be. However, the lack of the solid waste division's direct control over its fundamental support services (i.e., safety, vehicle maintenance, customer service and billing) that is inherent in a municipally operated collection system, along with inadequate annual solid waste division budgets, are what drive the deficiencies that we commonly observe with municipal solid waste collection systems relative to industry standards.

In the private sector, a hauler's general manager reports directly to the regional manager, and their goals and objectives are fully aligned. Those goals and objectives are supported by larger corporate resources, which are significant in the case of large regional and national haulers (e.g., Athens, Burrtec, CR&R, Republic, Waste Management). Those resources include dedicated safety managers, comprehensive and ongoing safety training programs,² GIS routing capacity, and clearly established policies and procedures. While municipal operations have and continue to incorporate best management industry practices, they are at a fundamental disadvantage to the private sector due to the lack of dedicated corporate support services, and the lack of direct control over their critical support services. If the City is to operate a municipal collection system to industry standards, City management, and current and future City Councils need to fully support that effort by providing the necessary operational and financial resources.

² "Refuse and Recyclable Material Collectors" have the fifth most dangerous job in the Country, as measured by the annual fatality rate - ahead of police and fire. Annually, 34.1 Refuse and Recyclable Material Collectors of every 100,000 full-time workers are killed. Most of these are caused by either the worker or the truck getting struck by another vehicle. Only loggers, fishery workers, pilots, and roofers have more dangerous jobs (Source: Newsweek).

Major Findings

General

1. **Pros and Cons of Municipally Operated Collections Systems:** Perhaps the greatest advantage of municipal operations is the direct control that the jurisdiction has over its solid waste management system. A jurisdiction also has the ability to be responsive to issues that arise outside of regular collection (e.g., homelessness trash abatement, illegal dumping). On the flip side, that total control also comes with the jurisdiction's total responsibility for the safety, and operational, financial, and regulatory compliance aspects of those services.
2. **Overall Assessment of Division's Operations:** The Division is doing a good job providing the required collection services given its current resources; however significant capital investment and additional staff are needed to bring the Division's operations in line with industry standards.
3. **Division Management and Staff:** Overall Division management and staff appear to be dedicated and qualified, which is a prerequisite to a safe and effective collection operation.
4. **Coordination with Fleet Maintenance:** The Division and the City's Fleet Management Department appear to have a good working relationship, which is a prerequisite to a safe and effective collection operation.

Operational Issues

5. **Transfer Station Turn Around Time:** Drivers reported that it is not unusual for tipping time at the Agua Mansa Transfer Station to be 45 minutes to an hour, which is double the amount of time that it should take for a transfer station that can efficiently handle the daily volume of vehicles. Decreasing the vehicle turn-around time at the Agua Mansa Transfer Station offers the greatest opportunity for the Division to increase productivity and minimize costs.³ A 10-minute reduction in the transfer station wait time per Division vehicle represents a cost savings on the order of \$200,000 annually.⁴ Turn-around times also apply to both the City's and the City's contracted haulers, irrespective of outsourcing.

³ The City's agreement with Agua Mansa provides in part: "Design and staffing which assure that each refuse vehicle entering the facility shall have a maximum fifteen minute turnaround time from the time the truck arrives at the facility until the time the truck exits the facility. The 15 minute time period shall be a maximum time limit under all conditions. (h) The capability to accommodate City and City's contracted haulers to avoid queuing refuse disposal vehicles behind private and commercial self-haulers and other commercial trucks. The facility will be designed and managed so as to avoid stacking of refuse vehicles on public streets as they approach the facility. (i). An area for tipping of City and City's contracted hauler refuse vehicles separate from the area for the general public. Contractor shall provide for identifying of City and City's contracted hauler's trucks."

⁴ Assuming a reduction of 10 minutes saved per trip to the TS and 2 trips per day per route generates 7.67 productive on-route hours @ 6.5 productive on-route hours route per day = 1.2 FTE routes = \$200,000+/- annual City cost savings.

R3

Executive
Summary

6. **Recyclable Material Contamination:** Fifty percent (50%) of the residential recycling carts that were sampled had visible contamination, and ongoing composition studies of the City's recyclable materials support residue/contamination rates on the order of 40%, which is very high. Contaminated recyclables led to China's National Sword and turned recycled materials from what once provided revenues to what now costs approximately the same as refuse to manage. Material quality standards need to be established for both the City's residential and commercial recyclables and ultimately enforced, which SB 1383 clearly establishes for residential and commercial organics. The City should include residential and commercial recycling and organic standards in its required SB 1383 Ordinance that effectively support and enforce the generation of high-quality low contamination rate for residential and commercial recyclables.
7. **Incentive Off:** Solid Waste Operators⁵ are currently on the Division's incentive program. Once they complete their assigned route they have the option to go home and are paid for the full day. Management does have the option to make them stay to ensure all routes/assignments are completed before they end the shift. "Incentive off" systems are largely a relic of long gone manual collection systems and can contribute to driver's rushing through their routes, which can result in both safety and customer service issues.
8. **Manual Driveway and Backyard Collection Service:** The City provides the option for residents that can be serviced by the fully automated residential collection routes to receive manual collection of their trash, recyclables, and green waste from their side or backyards for a modest additional cost. It is standard practice to provide such service for seniors and handicapped residents that live in a household with no other able-bodied persons. It is not standard practice to provide any level of manual service to an account that can be serviced with semi- or full-automated routes. Manual collection has a significantly higher safety risk than semi- or fully-automated collection and should never be offered where semi- or fully-automated collection can be provided. The City also reported that they have issues with some residents using more than the allowed total of 3 carts per commodity with manual service, especially for green waste.
9. **Proper Containment of Manual Account Refuse:** Manual service is also provided to accounts that cannot be effectively serviced by the fully automated collection routes, including some townhomes, multi-family complexes and alleys.⁶ A significant number of accounts serviced with manual systems did not have their material properly contained, which required significant additional effort to collect, significantly increasing both the time required to collect those accounts and the associated cost.

Refuse Vehicle Fleet

10. **Annual Vehicle Replacement Funding:** The Refuse Enterprise Fund (Refuse Fund) FY 2019/20 budget includes \$1.1 million for the purchase of three (3) fully automated side loaders.
11. **Annual Cart Replacement Funding:** The Refuse Fund FY 19/20 budget includes \$550,000 for the replacement of automated carts.

⁵ Both Sr. Operators and Regular operators receive the incentive. The Division has 2 Sr. Solid Waste Operators that work a regular 5 day schedule.

⁶ Condominiums and apartments do not receive green waste service.

12. **Fleet Age and Reliability:** The Division's collection fleet is old and does not provide sufficient reliable vehicle capacity to safely, and effectively complete the Division's daily workload. The average age of the Division's vehicles is 10 years, the age at which collection vehicles are typically replaced.
13. **Value of Refuse Vehicle Fleet:** The Division's current solid waste vehicle fleet has an estimated value of \$3.3 million, while the street sweeping fleet has an estimated value of \$600,000, for a total Refuse Fund fleet value of \$3.9 million.
14. **Required Vehicle Replacement:** It is projected that the Division needs to purchase five (5) new vehicles to replace existing primary route vehicles that can no longer effectively function in a primary vehicle capacity.

Workload and Required Number of Routes

15. **Route Size:** Current workloads (i.e., the number of accounts per route per day) are not balanced among routes and in some cases exceed what represents a safe and reasonable daily workload.
16. **Additional Required Routes:** Initial estimates are that the Division needs at least 2 additional residential routes (drivers and vehicles) to support the current workload. Our current analysis accounts for 2 additional residential routes: one (1) additional route for solid waste and one (1) for recycling.

Financial Issues

17. **Overtime:** FY 2018/19 overtime was approximately 13% of Division personnel costs (\$503,000), a decrease of more than 7% over the FY 17/18 20.8% overtime figure. The non-scheduled collection days of Wednesday and Saturday accounted for 33% of that overtime, which staff reported was due to the need to service accounts that were not collected on their regularly scheduled collection days (Monday, Tuesday, Thursday, Friday), and mandatory training.
18. **Refuse Fund Covers More Than Residential Collection Services:** In addition to the Division's collection operations, the City's Solid Waste Refuse Fund also funds City street sweeping costs, landfill post-closure costs, and other solid waste related activities.
19. **Commercial Rate Administrative Fees Help Fund Refuse Fund Operations:** Administration fees collected through the commercial rates are deposited into the Refuse Fund and are used to fund Refuse Fund expenses. Commercial franchise fees are deposited into the City's General Fund.
20. **Unfunded Pension Liability:** The Division currently has approximately \$14 million in unfunded pension liability.
21. **Limited Corporation Yard Space:** The Division's existing corporation yard is at or near capacity. If the City continues to operate a municipal residential collection system it may need to find additional corporation yard space. Alternatively, if the City outsourced operations there would be additional corporation space available for other City operations.

R3

Executive
Summary

Contract | Municipal Code Revisions

22. **Burrtec Contract:** The City's contract with Burrtec expires in less than one (1) year (June 30, 2020).
23. **Commercial Collection Contracts:** The City's commercial collection contracts expire on June 30, 2023. SB 1383 requirements become effective January 1, 2022. As such, those contracts will need to be amended to support the City's compliance with SB 1383 regulations.
24. **AB 341, AB 1826 & SB 1383 Regulatory Compliance:** The City needs to incorporate mandatory commercial recycling and organics collection and regulatory compliance requirements of AB 341 and AB 1826, and SB 1383 (when finalized) into all existing and future residential or commercial collection contracts (franchise agreements).
25. **Municipal SB 1383 Ordinance:** Per SB 1383, the City needs to put in place an SB 1383 Ordinance that effectively requires all impacted parties to comply with SB 1383.

Rate Adjustments

26. **Historical Rate Adjustments:** Attachment 1 provides an accounting of the adjustments to the residential solid waste rates from FY 2008/09 through the current FY 2019/20. As shown, during that 11 year period the residential curbside rate increased 30%, an average of 2.7% annually. The Commercial rate for a 3-yard container 1x per week increased 24%; 2.2% annually. Solid waste management expenses have increased substantially more than 3 percent annually since FY 2008/09, particularly with respect to, but not limited to health insurance, workers compensation, and vehicle costs; in addition to costs associated with unfunded state mandates including AB 341, and AB 1826.
27. **Refuse Fund Has a Projected \$3 Million FY 2019/20 Deficit:** Table ES-1 provides the Refuse Funds 5-Year Financial Plan. As shown, without consideration for any rate increases, the fund is projected to have a FY 2019/20 deficit of more than \$3 million dollars, and will end the year with less than \$30,000 in Working Capital Reserves. Having Working Capital (Operating Reserves) for three (3) months (25%) of operating expenses is a common operating reserve target.

Table ES-1: Riverside Refuse Fund 5-Year Financial Plan

	Adopted		Projected		
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
User Fees	\$ 21,383,857	\$ 21,383,857	\$ 21,383,857	\$ 21,383,857	\$ 21,383,857
Street Sweeping Fines	\$ 1,207,200	\$ 1,250,000	\$ 1,293,750	\$ 1,339,031	\$ 1,385,897
Misc. Revenues	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578
Total Revenues	\$ 23,053,635	\$ 23,096,435	\$ 23,140,185	\$ 23,185,466	\$ 23,232,332
Expenses	\$ 25,232,031	\$ 26,191,876	\$ 26,826,705	\$ 27,449,841	\$ 27,956,450
Surplus/(Deficit)	\$ (2,178,396)	\$ (3,095,441)	\$ (3,686,520)	\$ (4,264,375)	\$ (4,724,118)
FY Beginning Working Capital	\$ 5,302,983	\$ 3,124,587	\$ 29,146	\$ (3,657,374)	\$ (7,921,749)
Use of Working Capital	\$ (2,178,396)	\$ (3,095,441)	\$ (3,686,520)	\$ (4,264,375)	\$ (4,724,118)
FY Ending Working Capital	\$ 3,124,587	\$ 29,146	\$ (3,657,374)	\$ (7,921,749)	\$ (12,645,867)
Working Capital Percentage of Expenses	12%	0%	-14%	-29%	-45%

R3

20% July 1, 2020 Rate Increase - A rate increase of 20% on July 1, 2020 would address this annual deficit and put the Refuse Fund in a reasonable financial position entering FY 2021/22, with net positive revenues for FY 20/21, and a modest increase in Working Capital, as shown in **Table ES-2**. A 20% rate increase would increase the current monthly residential rate of \$26.01 by \$5.20 to \$31.21 per month.

Table ES-2: Minimum Recommended FY 2020/21 Rate Adjustment

	Adopted		Projected		
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
User Fees	\$ 21,383,857	\$ 21,383,857	\$ 25,660,628	\$ 25,660,628	\$ 25,660,628
Street Sweeping Fines	\$ 1,207,200	\$ 1,250,000	\$ 1,293,750	\$ 1,339,031	\$ 1,385,897
Misc. Revenues	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578
Total Revenues	\$ 23,053,635	\$ 23,096,435	\$ 27,416,956	\$ 27,462,237	\$ 27,509,103
Expenses	\$ 25,232,031	\$ 26,191,876	\$ 26,826,705	\$ 27,449,841	\$ 27,956,450
Surplus/(Deficit)	\$ (2,178,396)	\$ (3,095,441)	\$ 590,251	\$ 12,396	\$ (447,347)
FY Beginning Working Capital	\$ 5,302,983	\$ 3,124,587	\$ 29,146	\$ 619,397	\$ 631,794
Use of Working Capital	\$ (2,178,396)	\$ (3,095,441)	\$ 590,251	\$ 12,396	\$ (447,347)
FY Ending Working Capital	\$ 3,124,587	\$ 29,146	\$ 619,397	\$ 631,794	\$ 184,447
Working Capital Percentage of Expenses	12%	0%	2%	2%	1%
Assumed Rate Adjustments			20%	0%	0%

34% July 1 2020 Rate Increase - A rate increase of 34% on July 1, 2020 would provide for the 7 additional drivers, 5 new fully-automated side loaders, and one Supervisor I position that the R3 Team's review supports to address the additional current resource needs of the Division. It is also projected to result in Working Capital reserves equivalent to 25% of expenses by fiscal year end 2022/23 (**Table ES-3**). A 34% rate increase would increase the current monthly residential rate of \$26.01 by \$8.84 to \$34.85 per month.

Table ES-3: Rate Adjustment to Fully Fund Current Refuse Fund Operations

	Adopted		Projected		
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
User Fees	\$ 21,383,857	\$ 21,383,857	\$ 28,600,909	\$ 28,600,909	\$ 28,600,909
Street Sweeping Fines	\$ 1,207,200	\$ 1,250,000	\$ 1,293,750	\$ 1,339,031	\$ 1,385,897
Misc. Revenues	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578
Total Revenues	\$ 23,053,635	\$ 23,096,435	\$ 30,357,237	\$ 30,402,518	\$ 30,449,384
Operating Expenses	\$ 25,232,031	\$ 26,191,876	\$ 26,826,705	\$ 27,449,841	\$ 27,956,450
One Time Vehicle Replacement ⁽¹⁾			\$ 315,000	\$ 315,000	\$ 315,000
Additional Route Drivers ⁽²⁾			\$ 176,000	\$ 181,280	\$ 186,718
One Additional Supervisor I Position ⁽³⁾			\$ 123,000	\$ 126,690	\$ 130,491
Expenses	\$ 25,232,031	\$ 26,191,876	\$ 27,440,705	\$ 28,072,811	\$ 28,588,659
Surplus/(Deficit)	\$ (2,178,396)	\$ (3,095,441)	\$ 2,916,532	\$ 2,329,707	\$ 1,860,725
FY Beginning Working Capital	\$ 5,302,983	\$ 3,124,587	\$ 29,146	\$ 2,945,678	\$ 5,275,384
Use of Working Capital	\$ (2,178,396)	\$ (3,095,441)	\$ 2,916,532	\$ 2,329,707	\$ 1,860,725
FY Ending Working Capital	\$ 3,124,587	\$ 29,146	\$ 2,945,678	\$ 5,275,384	\$ 7,136,109
Working Capital Percentage of Expenses	12%	0%	11%	19%	25%
Assumed Rate Adjustments			34%	0%	0%

⁽¹⁾ Assumes purchase of 7 new vehicles at an annual financed cost of \$45,000

⁽²⁾ Assumes 2 additional drivers each at \$90,000 fully loaded costs escalated at 3%

⁽³⁾ Assumes 1 additional Supervisor I position escalated at 3% annually

Source: City of Riverside 2018-2020 Biennial Budget; Refuse Fund Five-Year Financial Plan

Executive
Summary

Commercial Organics Collection Rate: The City will need to establish organic material collection rates for the three commercial collection contracts in support of AB 1826 and SB 1383 legislative requirements.

Outsourcing

28. Comparison of Division Costs Versus Burrtec Costs:

Cost Impact - Direct Costs

Table ES-4 provides a comparison of the Division's FY 2019/20 budgeted expenses (413010 - PW Solid Waste Collection) and Burrtec's collection contract budgeted expense (413030 - PW Private Hauler). The associated annual cost per account for those operations is also provided as a means for projecting the direct cost impact of outsourcing the Division's residential collection operations.

These costs represented budgeted costs that have been adjusted to account for costs related to Burrtec's residential accounts that are covered in the 413010 - PW Solid Waste Collection budget. Those costs include cart costs, disposal costs, and allocated billing and customer Service - Fund 501 Utilization Charges, and PW/Streets - Administration Utilization Fund charges.^{7, 8}

As shown, after accounting for these adjustments the Division's Annual Cost per Account is \$331, while Burrtec's cost is \$260, approximately 20% less. While this is a high-level analysis, it does support a finding that outsourcing of the Division's operations could result in a lower direct operating cost, **assuming outsourced costs are similar to Burrtec's current per account contract costs.**

Table ES-4: Comparison of Division Versus Burrtec Annual Cost per Account

	FY 2019-2020 Budgeted Amount	Residential Accounts	Annual Cost per Account
413010 PW Solid Waste Collection	\$ 13,726,852	41,429	\$331
413030 PW Private Hauler	\$ 6,686,502	25,725	\$260

Cost Impact - City Costs that Would not Go Away

The above analysis does not account for those Refuse Fund expenses that would not be eliminated if the Division's collection operations were outsourced. Those projected costs, which were developed in consultation with City staff, are summarized in **Table ES-5**. For purposes of this analysis it is assumed that the Division would continue to provide street sweeping services.

As shown, if the Division's residential collection services were outsourced, it is projected that there would be no savings in the PW Solid Waste Admin costs (\$968,000), and more than \$3.1 million of the Division's collection operations budgeted costs would remain (413010).

⁷ Allocating those costs among the Division's and Burrtec's operations based on the relative number of accounts results in a shift of just over \$2 million dollars in expenses from the Division to Burrtec.

⁸ This analysis accounts for FY 19/20 purchase orders for residential trash disposal in the amount of \$2.5 million, as compared to the budgeted expense amount of \$2.1 million.

A total of more than \$4.1 million in existing Refuse Fund admin costs and collection related costs that would not go away if the Division's operations were outsourced. It is noted that \$1.5 million of those costs are related to customer service and billing utilization charges from Fund 501. If the City were to continue to bill customers and provide customer service – as it is doing now – under an outsourced system, there would be an associated savings to the private hauler's cost for outsourced operations, but not direct impact to the ratepayers as this cost is covered in the current rates.

A more detailed analysis of Refuse Fund costs that would not go away if the Division's residential collection program was outsourced is provided in **Attachment 2**.

Note: This analysis assumes that all Central Garage Charges (\$1.9 million) would be eliminated. While direct charges such as parts would be eliminated, it is possible, if not likely, that other costs including overhead and potentially existing staff positions would remain. This issue is currently under review by City.

Table ES-5: Refuse Fund Costs that Remain if Collection Outsourced

	2019/20 Budget			Descriptions
	Amount	Eliminated	Remaining	
Expenses				
413000 PW Solid Waste Admin	\$ 967,920	\$ -	\$ 967,920	Enterprise Fund admin costs
413010 PW Solid Waste Collection	\$ 15,795,170	\$ 12,657,590	\$ 3,137,580	Division collection costs
413020 PW Refuse Disposal	\$ 547,593		\$ 547,593	Closed landfill costs
413030 PW Private Hauler	\$ 4,618,184		\$ 4,618,184	Burrtec contract
413040 PW Street Sweeping	\$ 4,079,307		\$ 4,079,307	Street sweeping
413050 PW Sundry/GG	\$ 151,486		\$ 151,486	Keep Riverside Clean & Beautiful
Total Expenditures	\$ 26,159,660	\$ 12,657,590	\$ 13,502,070	
Percent of Total	100%	48%	52%	
Cost for Other Services Currently in Rates That Would Stay in Rates				\$ 9,396,570
Costs That Do Not Go Away				\$ 4,105,500
Cost that Do Not Go Away as Percent of PW Solid Waste Collection Costs				26%

Note: Table ES-5 does not include the Refuse Fund's current \$14 million pension liability, which would remain if services are outsourced.

Rate Impact

What would happen to the residential rates if the City were to outsource the Division's collection operations, and what, if any, impact outsourcing would have on the City's General Fund would depend on:

- The actual cost of outsourced operations as compared to the Division's current residential collection costs;
- Those Refuse Fund 413000 PW Solid Waste Admin costs and 413010 PW Solid Waste Collection Costs that would not go away; and

R3

Executive
Summary

- How those costs that would not go away would be funded:
 - Through the solid waste rate; and/or
 - General fund revenues.

Attachment 4 provides a breakeven analysis that calculates that the cost of outsourced operations for the City's entire residential collection system would have to be \$18.8 million or less for there to be no impact on the rates (i.e., the "breakeven" outsourced cost). Under this scenario, it is assumed that the following costs, which are all solid waste related, and are currently funded through the rates, would continue to be funded through the rates:

- 413020 PW Refuse Disposal (closed landfill costs);
- 413040 PW Street Sweeping (street sweeping); and
- 413050 PW Sundry/GG (Keep Riverside Clean & Beautiful)

There are a total of approximately \$2.6 million in current Refuse Fund "overhead" expenses that would not go away, consisting of all 413000 PW Solid Waste Administration Costs (~ \$968,000), and \$1.65 million in 413010 PW Solid Waste Collection Costs that would not go away. In addition, the analysis assumes that the City would continue to provide billing and customer service for all residential accounts under an outsourced system.

To fund the \$2.6 million in Refuse Fund "overhead" expenses that would not go away would require the equivalent of a 14% franchise fee applied to the \$18.8 million breakeven outsourced cost, which would fully fund the Refuse Fund under an City-wide outsourced residential collection system without the need for any General Fund revenues.

29. Cost Impact of Outsourcing the Division's Street Sweeping Operations:

If the Division's street sweeping operations were outsourced, as with the residential collection operations, there would be some existing costs that would not go away. An initial projection of what costs would be eliminated and which would remain is provided below. As shown in **Table ES-6** on the following page, it is estimated that one-third (33%) of existing costs (\$1.35 million) would remain if the City outsourced its street sweeping operations.

Table ES-6: Street Sweeping Costs that Remain in Outsourced

	2019/20 Budget		
	Amount	Eliminated	Remaining
413040 PW Street Sweeping			
Personnel	\$ 1,337,087	\$ 1,337,087	
Non-Personnel			
Central Garage Charges	\$ 442,977	\$ 442,977	
Other Non-Personnel Charges	\$ 613,424	\$ 613,424	
Total Equipment Outlay	\$ 334,000	\$ 334,000	
CAP	\$ 194,976		\$ 194,976
Utilization Charges from 101 Fund	\$ 411,323		\$ 411,323
Utilization Charges from 570 Fund	\$ 947,107		\$ 947,107
Misc. Sign Work	\$ 2,500		\$ 2,500
Total Charges to Others	\$ (204,087)		\$ (204,087)
Total Expenditures	\$ 4,079,307	\$ 2,727,488	\$ 1,351,819
Percent of Total Expenditures	100%	67%	33%

A more detailed analysis of Refuse Fund costs that would not go away if the Division's street sweeping operations were outsourced is provided in **Attachment 3**.

Note: This analysis assumes that all Central Garage Charges (\$443,000) would be eliminated. While direct charges (e.g., parts) would be eliminated, it is possible if not likely that other overhead and some direct costs would remain. This issue is currently under review by City.

30. **Employees Displaced by Outsourcing:** AB 1669 (Displaced Employees, Service Contracts, Collection and Transportation of Waste) requires that a City that conducts a competitive procurement process must give a 10 percent preference to any bidder that agrees to retain the employees from the prior hauler (the City in the case of outsourcing of municipal services). Rather than simply give a preference to proposers for hiring City employees, it is recommended the City require the selected hauler to offer employment to all qualified City staff that were displaced due to outsourcing.

Recommendations

Determine Whether to Invest in the Division or Outsource Operations

The City is at a point where it needs to determine if it wants to continue to provide municipal residential collection services or outsource those operations. The analysis presented in this report is intended to support the City's decision. It is recommended that the City informally explore what economic or other benefits regional haulers may be willing to provide the City and its ratepayers in exchange for a long-term exclusive residential collection franchise (e.g., an up-front payment to retire the Division's \$14 million pension liability). That information may help to inform the City's decision.

R3

Executive
Summary

Increase Residential Rates a Minimum of 20% on July 1, 2020, and Develop a Plan for Additional Required Rate Increases Over the Next 5 Years

Regardless of whether or not the City decides to maintain its municipal residential collection operation or outsource that operation, it is recommended that the residential rates be increased.

If the City decides to outsource operations, it is still recommended that rates be increased by at least 20% on July 1, 2020. That rate increase is needed to address the FY 2019/20 projected \$3 million annual Refuse Fund shortfall, and will put the Refuse Fund on a reasonable financial footing for FY 20/21 as it moves forward with outsourced operations.

If the City decides to maintain municipal operations, a 34% rate increase is suggested. Alternatively, smaller but still significant rate adjustments could be spread over a number of years (e.g., a 20% increase on July 1, 2020, followed by a July 1, 2021 10% increase, followed by annual cost of living and/or adjustments to fund SB 1383 compliance requirements).

Investing in Municipal Residential Collection Operations

If the City decides to continue to provide residential collection services, the following is recommended:

1. **Conduct Collection System Routing Study:** Conduct a residential collection system routing study to determine:
 - a. If the City should continue to provide services using a four (4) day per week - 10 hour per day route schedule, or shift to a five (5) day per week - 8 hour per day route schedule;
 - b. What constitutes a fair and reasonable daily route workload⁹ for each of the Division's three lines of business (solid waste, recycling, yard waste); and
 - c. The associated number of required routes for each line of business, with consideration for any seasonal fluctuations in participation rates.
2. **Reroute the Residential Collection System:** Based on the results of the recommended Collection System Routing Study above, reroute the Division's entire service area, incorporating the established target productivity standards .
3. **Review Street Sweeping System Productivity and Reroute Street Sweepers:** The changes in residential routes that will result from the Collection System Routing study may mandate changes to street sweeping routes. Regardless, the Division should conduct a more detailed review of its Street Sweeping operations, including opportunities for increasing efficiency and route productivity, and establishing formal Target Productivity Standards (i.e., curb miles swept per route per day).
4. **Eliminate Manual Service Option (Back Yard and Side Yard Service):** Manual collection is costly, and places significant wear and tear on workers with associated workers compensation costs. *Ultimately, manual collection represents a safety risk,* and should be eliminated except where semi-or automated service cannot be effectively provided, or in the case of elderly and handicapped residents that qualify for that service.

R3

⁹ i.e., The Target Productivity Standard = The number of accounts (drive-bys) per route per day.

If the City decides to maintain a mandatory service option – ***which is not recommended*** – it should charge the full cost for that service, which is a multiple of the existing rate (i.e., 2 to 4+ times the current monthly rate of \$36.82 for driveway collection and \$44.18 for backyard collection).

5. Enforce Container Ordinance for Any Manual Accounts that Need to be Maintained:

A significant number of accounts serviced with manual systems did not have their material properly contained, which requires significant additional effort to collect, increasing both the time and cost. For those manual accounts that cannot be transitioned to fully automated service, the City should require those accounts to contain their material as required by the Municipal Code, or take appropriate enforcement action.¹⁰

6. Eliminate “Incentive Off” Policy: Employees should never be incentivized to do their work as quickly as possible, which is what an “Incentive Off” policy supports. It does not support safe collection, or a high level of customer service. It is a relic of the past and should be discontinued.

7. Continue to Annually Fund Vehicle Replacement Capital Costs at Current Levels + Inflation: The FY 19/20 Refuse Fund budget provides for \$1.1 million in solid waste collection vehicle cost and \$334,000 for replacement of street sweeper vehicles. The Refuse Fund should continue to annually fund these vehicle replacement costs. This level of funding, escalated annually, is sufficient to support the effective management and replacement of the Division’s fleet. However, annual vehicle replacement needs vary, and the Division may need more than \$1.1 million some years and less other years. To address the variability in vehicle replacement funding each year, the City should establish a Vehicle Replacement Reserve Fund into which the \$1.1 million for replacement of solid waste collection vehicles and \$334,000 for replacement of street sweeper vehicles is annually deposited. Funds would then be available to the Division/Fleet Maintenance for funding the planned replacement of vehicles.

8. Evaluate Condition of Residential Carts and Develop 10-Year Replacement Plan: The Division’s FY 19/20 budget includes \$550,000 for “replacement of automated barrels”. At \$70 per barrel (cart) - purchased, assembled and delivered that funding provides for the replacement of approximately 8,000 carts annually. There are approximately 66,000 residential accounts in the City and 200,000 carts.¹¹ Assuming carts last 10 years, the City would need to purchase about 20,000 carts each year to maintain the inventory. If carts last 20 years, 10,000 carts need to be replaced each year. The FY 2019/20 budget provides for approximately 8,000 barrels. If the Division has not done so already, it should review the condition of its current cart inventory and develop a 10-year replacement plan with sufficient annual funding deposited into a dedicated Residential Cart Replacement Reserve, similar to the recommended Vehicle Replacement Reserve.

¹⁰ According to Riverside Municipal Code, section 6.04.022: All solid waste on the premises shall be kept in “standard containers”. The Municipal Code defines “standard containers” as a metal, plastic or rubber container, 20- to 32-gallon capacity, not to exceed a weight of 15 pounds when empty, with side bail handles and a tight-fitting lid, designed and manufactured for the accumulation and storage of solid waste, or plastic and/or paper bags manufactured for the accumulation and storage of refuse. The top diameter of the container shall in no case be smaller than the diameter of the receptacle at the bottom.

¹¹ At 3 carts per account (solid waste, recycling, organics) = 198,000 carts.

Executive
Summary

Outsourcing Municipal Residential Collection Operations

If the City decides to outsource residential collection services the following is recommended:

1. **Continue to Provide Billing and Customer Service Functions:** The City has projected that there would be no savings to its annual billing and customer service costs of approximately \$1.5 million, which are allocated to the Division under Fund 501. Therefore, it is recommended that the City continue to provide those services if the Division's residential collection services are outsourced.
2. **Extend Burrtec's Residential Collection Contract 1 Year:** Should the City decide to outsource operations, it should extend Burrtec's residential collection contract, which expires on June 30, 2020, by one year. This will provide sufficient time to issue an RFP for the City's entire residential system, with the effective date to coincide with the termination of the extended Burrtec term (July 1, 2021).
3. **Outsource Residential Services Under a Single Exclusive City-Wide Contract:** Having extended Burrtec's contract 1 year, the City should issue a Request for Proposals (RFP) for a single hauler to provide SB 1383 compliant City-wide-exclusive residential collection services.
4. **Request Proposal for City-Wide Street Sweeping Services:** As part of the RFP for SB 1383 compliant City-wide residential collection services, the City should request an optional proposal for City-Wide street sweeping services, compare those cost proposals to cover the Division's street sweeping costs, and determine whether to also outsource street sweeping services.

Legislative Compliance

1. **Determine Commercial Collection Program Specifics for Legislative Compliance:** The City should identify the specifics of the City's commercial collection programs for AB 341, AB 1826 and negotiate required changes to the commercial contracts and commercial rates.

Collection Contracts and Municipal Code

1. **Contractual Performance Standards:** The City should incorporate objective performance standards and proactive reporting of performance relative to those standards into new or negotiated residential and commercial contracts. Provisions for enhanced reporting, technical assistance and public education and outreach, and AB 341, SB 1826 and SB 1826 compliance, and compliance monitoring requirements should be included.
2. **Amend the City's Municipal Code:** The City's Municipal Code should be amended to reflect state regulations and establish local organics laws. This will strengthen the City's organics program by placing enforcement mechanics within the City instead of relying on the hauler, thus reducing the potential for lack of customer compliance.

R3

Report Structure

The solid waste and recycling economic and strategic study report contains the following sections:

Section 1: Background

This section includes an introduction to recent studies and reports, as well as an overview of the City's current collection system.

Section 2: Legislative Challenges

This section provides an introduction to recent state legislation relevant to recycling and organics collection.

Section 3: Residential Collection Operations and Options

This section discusses the R3 Project Team's findings following the route review. The review included a site visit, interviews with key stakeholders, and observation of route conditions to understand potential contributors to costs and possible barriers to productivity. In this section, data is analyzed pertaining to:

- Legal agreements
- Customer service reports
- Financials
- Fleet
- Operations
- Personnel

Section 4: Franchised Collection Alternatives

This section identifies alternative structures to the City's existing districted residential and non-exclusive commercial collection systems, and provides recommendations for collection contract terms and conditions, and municipal code revisions to align those documents with current solid waste management regulations and requirements and best management practices.

Section 1

Introduction
and
Background

Section 1: Introduction and Background

The City has a rich history of proactively working to attain sustainability, as demonstrated by the City's sponsorship of the Keep Riverside Clean & Beautiful program, which began in 1992, the Green Purchasing Policy that has been promoting City purchasing of environmentally-preferable products since 2007, the Green Action Plan of 2012, and the Climate Action Plan of 2014. Given the dedication to improving the City's environmental footprint, it came as no surprise when the City engaged consultants in 2018 to assist with assessments of its solid waste organic services programs (R3¹²) and its performance and financial expenditures (Management Partners¹³), in order to take a hard look at its challenges and determine how to reach its admirable sustainability goals within the increasingly complex context of the changing environmental legislative domain.

To understand the City's situation and motivation for this study, it is important to acknowledge several points from the 2018 reports and other City research:

- According to the 2018 Performance Audit, the City hasn't recovered from the reductions in service and personnel that the 2008 recession demanded. The report pointed out, "Funding of critical infrastructure & equipment needs for streets and solid waste continues to present challenges to the department's ability to meet service delivery expectations," which "requires changes in service delivery approaches and investments in people and technology."
- Per the Public Works Departments 2018-20 Biennial Budget report, the City's Refuse Fund (Fund 540) is "not generating sufficient revenue to cover the cost of operations and infrastructure needs and maintain the fund balance reserves." The Fund does not account for future rate increases despite rising operating costs (disposal, contractual, and personnel).
- What's more, the 2018 Performance Audit noted that there is a "significant amount of overtime in the Division," which the R3 Project Team assumes applies to personnel in the billing, street sweeping, and hauling divisions.

The Performance Audit Report offered the following valuable recommendations for addressing the financial and solid waste program issues that they uncovered:

- Seek proposals from solid waste providers for residential collection to potentially mitigate cost increases to rate payers and improve service delivery;
- Seek proposals from street sweeping service providers to reduce the City's costs and the potential impact to storm water collection and mitigation efforts;
- Enhance solid waste diversion efforts via changes in solid waste contracts, services, marketing, and collaboration between collection, transfer, and disposal providers; and
- Maintain all current service levels.

¹² Summary of City of Riverside Organics Services Program (Organics Study Report), October 2018, by R3 Consulting Group, Inc.

¹³ City of Riverside Public Works Department Performance Assessment and Financial Expenditures Review (Performance Audit), October 2018, by Management Partners.

The final, crucial piece of background information to consider for this study is this summary of the City's current solid waste collection and processing services, programs, and providers.

1.1 System Overview

1.1.1 Residential

The City Division (Division) crews provide weekly curbside collection service to two-thirds of the City's residences, and Burrtec provides the remaining one-third. Both automated and manual collection are provided by City and Burrtec trucks, depending on accessibility.

Most of the City residences that Burrtec services were due to annexations by the City of Riverside. Burrtec's original agreement with the City ran from May 12, 2001 – May 11, 2018. The fifth and most recent Amendment extended the term 18 months, from January 1, 2019, to June 30, 2020. On December 18, 2018, the City Council authorized a short-term rate adjustment through June 30, 2020.

The majority of residents in the City receive three 96-gallon carts; brown for refuse; blue for single-stream recyclables, and green for yard waste. Carts are serviced using a fully-automated system. In a fully-automated system, there is one driver who positions the collection vehicle beside the cart. Using controls inside the cab of the vehicle, the driver maneuvers a side-mounted arm to pick up the container and dump its contents into the vehicle. The driver then uses the arm to return the container to its original location.

On some routes, there is not enough space to operate an automated vehicle, or homeowners do not have space to store carts. On these routes, residents use their own containers to store refuse, and the driver uses manual collection to service these accounts. In a manual system, the driver must get out of the vehicle and physically lift the refuse container to empty its contents into the truck. Many of the manual routes consist of condominiums and townhouses. Manual collection customers are allowed to set out three, 32-gallon containers for each commodity (refuse, recycling, yard waste).

In addition to automated and manual routes, both Burrtec and the City provide driveway and backyard service. With backyard service, even if the resident receives a 96-gallon cart, the driver still must get out of their vehicle to move the cart to the street where it is emptied using the vehicle's automated system. The driver does not manually lift the cart to empty it.

Table 1.1 shows the City's total customers by category of service.

Table 1.1: Number of Customers by Account Type		
Account Type	City Customers	Burrtec Customers
Curbside	38,105	25,087
Disabled	467	0
Driveway	241	5
Backyard	52	9
Mobile Home / Apartment	526	342
Disabled Apartment	7	0
Condominium / Town Home	2,031	282
Total Residential Accounts	41,429	25,725

R3

Section 1

Introduction
and
Background

The City bills residents for collection services provided by the City and by Burrtec. **Table 1.2** presents the July 1, 2019 fee schedule that both Burrtec and the City use for these residential waste management services.

Table 1.2: 2019 Fee Schedule	
Residential Service Type	Monthly Rate
Curbside / Disabled	\$26.85
Driveway	\$36.82
Backyard	\$44.18
Mobile Home/Apartment	\$15.31
Condominium/Townhome	\$16.57

Residents who participate in the cart system can purchase an additional refuse cart for a one-time charge of \$52.74, and additional recycling and green waste carts each cost \$42.19. Residents who purchase additional carts pay a monthly fee for each additional cart shown in **Table 1.3**.

Table 1.3: Additional Cart Rates	
Cart Type	Additional Monthly Rate
Refuse	\$11.43
Recycling	\$5.24
Yard Waste	\$2.08

In addition to weekly trash, recycling, and yard waste collection, the City and Burrtec provides residents with two (2) free curbside bulky-item pick-ups per year, including appliances with Freon. The total amount of items collected per bulky item appointment is limited a combined area of: 8-foot long, 4-foot wide, and 4-foot high.

The City also hosts free C.U.R.E. (Clean Up Riverside's Environment) and Incredible Bulk events, several times each year, for drop-off of bulky items, e-waste, batteries, and oil/oil filters. Additionally, the City partners with the DEA twice annually for Drug Take-Back Days and the Fire Department for daily sharps disposal, both at no cost to residents. Backyard composting workshops and mulch are also available for free with proof of residency.

1.1.2 Street Sweeping

The City manages a crew of eight (8) full-time employees who provide regular street sweeping services on public neighborhood and main thoroughfares throughout the City. This best practice reduces the amount of pollution reaching storm drains, which helps prevent flooding, and mitigates the risk of pollutants reaching the Santa Ana River and the ocean. The City has reached out to residents for help via the "Adopt-A-Drain" program, which recruits volunteers to help keep the City's 4,000 storm drains clean and free of debris. This may imply that the City's current municipal system is inadequate, on its own, to fully manage this serious issue.

1.1.3 Commercial & Multi-Family Dwelling

Three authorized haulers – Athens, Burrtec, and CR&R – provide refuse and single-stream recyclables collection service for commercial and multi-family dwelling (MFD) customers, at a frequency of 1-6 times per week. All three are required to charge the same rates and provide the same services:

- Bin service
- Temporary bins/roll-off box service
- C&D program
- Cart for small quantity generators
- MFD bulky-item pick-up

Additional bins/carts are available for an extra fee. Commercial and MFD customers are billed directly by the haulers for collection services.

On January 29, 2018, the commercial hauler Agreements were all extended for five (5) years, via the fifth Amendment, and now expire on June 30, 2023. The City has the right to terminate the current commercial Agreements upon six (6) months' written notice to the haulers. On December 18, 2018, the City Council authorized a short-term rate adjustment for all three haulers, through June 30, 2020.

1.1.4 Processing

The municipal and Burrtec fleets transport all residential waste, including organics and recyclables, for processing at the Agua Mansa Transfer Station.

All three commercial haulers must also transport commercial trash for processing at the Agua Mansa Transfer Station, but they have the option of transporting recyclables and green waste to other processing facilities, provided that contamination is 15% or less; if recyclables and green waste have greater than 15% contamination, they must be transported to the Robert A. Nelson Transfer Station.

The City has expressed a need for assurance of green waste processing capacity.

1.1.5 Food Waste

The City is currently working on two food waste pilot programs: one food-waste rescue pilot; and one food-waste-to-energy project in conjunction with the City's Water Quality Control Plant and the Agua Mansa Transfer Station.

Section 2

Legislative
Challenges

Section 2: Legislative Challenges

Based on our review of the City's current amended collection Agreements and municipal code, they are lacking the most updated contract language for meeting recent legislation AB 341, AB 1826, SB 1383, or AB 1594 (or CALGreen Building Code).

The City should also be aware of new provisions under AB 1669, which apply to contracts awarded after January 1, 2017. If the City chose to conduct a competitive request for proposals, this bill requires the City to provide and make available employee data to all potential bidders thirty (30) days before the proposal due date.

The following pages summarize our understanding of these state laws. Section 4 of this report offers the City alternatives to the current franchise collection agreements to bring current contracts up to standards, increase legislative compliance, and incorporate industry best practices as well as recommended Municipal Code updates. We analyzed the City's current program and discuss whether the City prefers to opt for a high-diversion program or policy/program modifications that meet the state's minimum requirements.

2.1 Summary of Legislative Requirements

2.1.1 AB 341 – Mandatory Commercial Recycling

AB 341 went into effect in 2012 and requires multi-family residential properties of 5 or more units (regardless of solid waste generation) and businesses that generate four (4) cubic yards of solid waste per week to sign up for recycling collection service, or to self-haul recycling. The law also requires local jurisdictions to implement a commercial solid waste recycling program that consists of education, outreach and monitoring of businesses that is appropriate for that jurisdiction and is designed to divert commercial solid waste from businesses. Each jurisdiction reports annually to CalRecycle on implementation of its commercial recycling program, including education, outreach and monitoring, and if applicable, enforcement efforts and exemptions.

The City has a goal of implementing AB 341 to all commercial businesses and multi-family properties to increase the City's diversion to a measurable goal of 75%, according to the City's Green Action Plan. Additionally, the City had a goal of developing a "Zero Waste ordinance" by 2012.

Recycling collection service is currently made available to multi-family residential properties and businesses by the City's franchised haulers. However, there are components such as providing follow-up education and outreach to noncompliant covered generators, tracking compliance, and achieving full compliance of businesses that may still need to be realized (and are required of the City by CalRecycle).

2.1.2 AB 1826 – Mandatory Commercial Organics Recycling

Signed by Governor Brown in 2014, AB 1826 requires commercial businesses and multi-family properties of five or more units to implement organics recycling programs for the diversion of organic waste¹⁴ from landfills. Multi-family properties are required to divert green waste either by hauling green waste to a facility that does not directly landfill the material, or by signing up for green waste service. Commercial businesses that generate food waste, such as restaurants and convenience stores, are required to either self-haul the food waste or sign up for commercial food waste collection service.

Under AB 1826, local jurisdictions are required to implement an organics recycling program appropriate for that jurisdiction, designed specifically to divert organic waste. AB 1826 implementation also requires local jurisdiction to conduct each of the following activities on an annual basis:

- Covered Generators Component – Identify commercial businesses and multi-family properties (collectively, “covered generators”) that must comply with the regulations of AB 1826;
- Organics Recycling Service Component – Ensure that organics recycling services are available to all covered generators;
- Education and Outreach Component – Conduct education and outreach to covered generators about the state law and how to comply; and
- Compliance Monitoring Component – Identify covered generators that are not in compliance and inform them of their requirements and how they can comply.

Many jurisdictions comply with AB 1826 by requiring their haulers to undertake the activities listed above. Such implementation efforts may be paired with an exemption process for businesses that qualify under the 4-cubic yard threshold, but qualify under the following CalRecycle-approved criteria:

- Lack of sufficient space in multi-family complexes or businesses to provide additional organic material recycling bins.
- Existing business actions that result in the recycling of a significant portion of its organic waste.
- Generation by the business or group of less than one-half of a cubic yard of organic waste per week.
- Generation by the business or group of less than one cubic yard of organic waste per week (if the local jurisdiction provides CalRecycle with information that explains the need for this higher exemption).
- Extraordinary and unforeseen events (limited-term exemptions).

As of January 1, 2020, CalRecycle may reduce the threshold of covered businesses and multi-family residences to those generating 2 or more cubic yards of waste per year.

¹⁴ Organic waste, which is regulated under AB 1826, means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Section 2

Legislative
Challenges

The City's commercial franchised agreements do not require haulers to accept food waste, nor do they require the franchised haulers to report organic waste collection programs provided to covered generated under AB 1826. Because of this, the City is currently unable to comply with AB 1826. The City was required by CalRecycle to create and implement a corrective action plan in February 2019 which includes education and outreach activities, monitoring, and notification.

2.1.3 SB 1383 – Short-Lived Climate Pollutants

SB 1383 sets a goal to reduce organic waste by 50% from the 2014 level by 2020 and 75% from the 2014 level by 2025. It also establishes a target of recovering 20% of currently disposed edible food for human consumption by 2025. The law's requirements become effective on January 1, 2022, and the first implementation reports are due to CalRecycle in April 2022. The regulations implementing the legislation are not final, but R3 recommends that all jurisdictions begin planning for compliance now.

This law has the potential to affect the City in the following ways:

- The City's agreements with any haulers providing franchise collection services (currently Athens, Burrtec, and CR&R) must require delivery of organics to processing and not disposal, and may include provisions to assist the City in implementing the law's requirements as well. This could include:
 - Assisting the City in identification, monitoring, notification, exemptions, and enforcement actions on regulated generators. The law's current requirements are similar to AB 1826, but apply to all solid waste generators in the jurisdiction (not just businesses and large multi-family). The law also includes some additional generator requirements such as a requirement to co-locate containers for recycling and organics collection on the interior of businesses, and a requirement for property owners to provide recycling and organics service and education on proper source-separation to tenants annually;
 - Annual notifications to organic waste generators on requirement to properly separate materials in appropriate containers; methods for prevention of organic waste, recycling organic waste on site, community composting and any other local requirements; information on methane reduction benefits; list of approved haulers and how to recycle organic waste; public health and safety and environmental impacts; and information on edible food recovery programs. If a sufficient proportion of the City's residents are non-English speaking, multilingual outreach materials are required;
 - Applying container labels that meet the law's requirements;
 - Conducting contamination monitoring, tagging, monitoring & record-keeping for a representative sample of generators on a quarterly basis; and
 - Subscribing businesses in the organics diversion program with an option to opt out (rather than requiring businesses to sign up for service);
- The City's garbage containers are currently brown and will need to be retrofitted with grey lids or replaced with grey containers. If food waste is collected source-separated and not commingled with green waste, those dedicated containers must be yellow. The container color requirements are substantially effective January 1, 2036, although R3 recommends that a roll-out of containers with the standardized colors be conducted simultaneously City-wide to avoid confusion;

Section 2

Legislative
Challenges

- The City may be required to regulate self-haulers of organic waste such as landscapers to enforce the requirement that they source-separate all organic waste generated on site and haul source-separated organic waste to solid waste facility that processes or recovers organic waste (or haul organic waste to a high-diversion facility), and keep record of amount of organic waste delivered to facilities (subject to inspection) in the form of weight tickets or another acceptable format;
- The City may be required to update its municipal code to align with the law's requirements and allow the City to assess penalties on regulated generators;
- The City may be required to assess penalties on generators for not complying with the law's requirements;
- The City may be required to adopt an ordinance or enforceable requirement for CALGreen waste diversion requirements (discussed below) as well as the Model Water Efficient Landscape Ordinance;
- The City may need to convert its pilot food waste rescue program into a permanent food waste collection program, and may need to adjust the pilot program to align with SB 1383's food waste rescue requirements. The law requires jurisdictions to conduct outreach to edible food generators and provide a list of food recovery organizations to generators. R3 recommends that a regional approach be utilized to improve efficacy of food waste rescue, given that many food banks operate on a regional scale. SB 1383 will require the City to maintain a list of all food recovery organizations operating within the City and require quarterly reports from those organizations addressing available capacity, current customers, etc.;
- The City may be required to adjust current purchasing policy on compost (if used) and natural gas such that the facilities from which compost and natural gas is procured accept feedstock from the solid waste stream. The City may also need to adjust purchasing of paper to meet the recycled content standards of the regulations. The City may be required to identify additional procurement opportunities for expanding the use of recovered organic waste products. Finally, the City will need to maintain a record in alignment with the law's requirements that demonstrates implementation of the law's procurement requirements;
- If the City is found not to be in compliance with any of the law's requirements, high penalties may be assessed by the Department on the City. This includes a finding by the Department that the City is not assessing penalties on covered generators according to the law's requirements; and
- Record-keeping requirements include:
 - List of covered generators under AB 341 and AB 1826, both compliant and non-compliant;
 - Contamination protocol and documentation;
 - Waivers and exemptions;
 - Education and outreach conducted;
 - Copies of enforceable documents (e.g., ordinances, franchise agreement, permits);
 - Edible food recovery documentation;
 - Commercial edible food generators list and recovery collection info; and

R3

Section 2

Legislative
Challenges

- o Evidence of recovered organic waste procurement and recycled paper procurement.

2.1.4 AB 939 – Mandatory Solid Waste Diversion Rates

AB 939 required diversion of 50 percent of all solid waste by January 1, 2000 through source reduction, recycling, and composting activities. The City’s current diversion rate under the “Pounds Per Person Per Day” measure of diversion was 55% in 2017, just barely above the 50% requirement.

It is imperative that the City maintain compliance with this mandate’s diversion requirements.

2.1.5 AB 1594 – Green Waste Management

AB 1594 changes the way green material used as alternative daily cover (ADC) is recorded for the purpose of AB 939 waste reduction requirements. Waste haulers can continue to deliver green material to facilities that use green material as ADC; however, they will not be allowed to report the tonnage as diverted (which may be important for meeting contractual and/or state diversion requirements). This law commences January 1, 2020 and should be accounted for in revisions to the Agreements with commercial waste haulers, at minimum.

Green material used as ADC is tracked by origin on a statewide level. The City’s green material ADC decreased substantially between 2017 and 2018. See **Table 2.1**, below:

Table 2.1: Green Material Used as ADC, 2017 and 2018, All Landfills			
Landfill Name	2017 GW ADC	2018 GW ADC	YoY Change
Badlands Sanitary Landfill	11684.58	4751.59	6932.99
Lamb Canyon Sanitary Landfill	247.54	144.65	-102.89
Mid-Valley Sanitary Landfill	63.68	107.35	43.67
San Timoteo Sanitary Landfill	109.7	113.95	4.25
Victorville Sanitary Landfill	0.37	0.11	-0.26

Assuming population growth, at a disposal amount of 452,411 tons in 2017, there is an additional allowance of approximately 52,600 tons before the City does not make the 50% reduction requirement of AB 939 (described in the prior section of this report). Green waste ADC tons are much lower than this target, meaning that the City’s current efforts to reduce green waste ADC tons may be sufficient.

2.1.6 CALGreen Building Code

As of January 1, 2017, under CALGreen Code, at least 65% of job site debris generated by most types of building project types be recycled, reused, or otherwise diverted from landfill disposal (by weight). This requirement applies to demolition projects and most new construction, as well as the majority of building additions or alterations. SB 1383 (described above) requires jurisdictions to implement and enforce CALGreen via amendment to municipal code. Recommendations for the City are provided below:

- The City should evaluate compliance with current CALGreen Code and adjust the municipal code accordingly; and

- Enclosure standards should be evaluated and updated if needed to ensure that enclosures built in the future have sufficient space for recycling and organics containers.

2.1.7 AB 1669 – Displaced Employees, Service Contracts, Collection and Transportation of Solid Waste

Beginning January 1, 2017, if the City chose to conduct a competitive request for proposals, this bill requires the City to give 10 percent preference to any bidder that agrees to retain the employees of the prior hauler. This bill also requires the City to provide and make available employee data to all potential bidders thirty (30) days before the proposal due date.

Section 2

Legislative Challenges

DRAFT

R3

Section 3

Residential
Collection
Operations
and Options

Section 3: Residential Collection Operations

The Division's goal is to provide excellent customer service in a cost-effective and highly-productive manner. In recent years, the Division has struggled to achieve this goal and a 2018 audit recommended that the City consider outsourcing all solid waste services. The R3 Team was engaged to conduct a site visit, interview key stakeholders, and observe route conditions to understand potential contributors to costs and barriers to productivity.

The R3 Team also analyzed data pertaining to:

- Franchised hauler and union contracts
- Customer service reports
- Financial information
- Vehicle Fleet information
- Operations
- Personnel

Based on interviews, route observations, and data analysis, the R3 Team identified the following two (2) key issues, which are discussed further below:

- **Fleet:** The age and condition of the existing fleet inventory is a significant barrier to optimizing collection system performance, and has a negative impact on overtime, costs, productivity, and employee retention; and
- **Route Size:** The daily workload associated with some of routes appear to exceed what may be considered to be safe and reasonable. The target daily workload requirements for residential solid waste, recycling and green waste routes need to be reviewed and revised, additional routes added, as necessary, and routes rebalanced accordingly.

3.1 Assessment of Vehicle Fleet

The Division has a fleet of 44 automated vehicles that range in age from 2 to 24 years. The average age of the Division's fleet is 10 years. Ten years is a typical threshold for replacing vehicles, which is consistent with the City's contract with Burrtec which requires their vehicles to be 10 years old or less.

3.1.1 Maintenance Costs

Productivity and cost are impacted by the number and condition of route vehicles that are available each day to service the daily workload. To determine current and average annual maintenance costs for the Division's fleet, the R3 Team analyzed data provided by the City. That information is presented in **Table 3.1** on the following page. As shown, the City's FY 2018/19 fleet maintenance repair costs were almost \$1.1 million.

Note: *Table 3.1 does not include preventative maintenance (PM) costs, just the cost of other one-time or periodic repairs and/or maintenance. Costs associated with PM were excluded as these costs do not necessarily increase as the vehicle ages.*

Table 3.1: Fleet Maintenance Financials

	Vehicle Number	Purchase Year	Miles	FY 2018/19 Maintenance for Repairs	Lifetime Maintenance Repair Costs	Average Annual Maintenance Repair Costs	Vehicle Age
1	J141	1996	228,778	\$21,487	\$792,067	\$33,003	24
2	J151	1997	276,224	\$1,464	\$804,513	\$34,979	23
3	J155	1997	65,350	\$1,537	\$652,740	\$28,380	23
4	J157	2004	128,623	\$67	\$479,727	\$29,983	16
5	J158	2004	4,540	\$670	\$530,327	\$33,145	16
6	J159	2004	1,188	\$1,936	\$472,229	\$29,514	16
7	J160	2004	51,490	\$21,092	\$509,938	\$31,871	16
8	J161	2004	22,234	\$8,643	\$588,967	\$36,810	16
9	J164	2006	112,744	\$14,203	\$236,193	\$16,871	14
10	J165	2006	162,790	\$18,885	\$599,766	\$42,840	14
11	J166	2006	150,355	\$27,115	\$598,409	\$42,744	14
12	J167	2006	118,583	\$17,402	\$608,778	\$43,484	14
13	J168	2006	140,026	\$201	\$543,754	\$38,840	14
14	J169	2006	142,620	\$18,143	\$575,289	\$41,092	14
15	J170	2007	20,764	\$43,775	\$596,098	\$45,854	13
16	J172	2007	167,718	\$42,828	\$680,161	\$52,320	13
17	J173	2008	107,179	\$18,025	\$204,887	\$17,074	12
18	J174	2008	143,757	\$44,771	\$551,695	\$45,975	12
19	J175	2008	1,092	\$39,202	\$610,746	\$50,896	12
20	J176	2008	137,345	\$18,439	\$594,135	\$49,511	12
21	J177	2008	85,405	\$11,557	\$152,097	\$12,675	12
22	J178	2008	81,275	\$12,868	\$384,970	\$32,081	12
23	J179	2008	67,039	\$48,224	\$342,972	\$28,581	12
24	J180	2010	66,951	\$31,017	\$360,379	\$36,038	10
25	J182	2010	99,062	\$32,516	\$450,300	\$45,030	10
26	J183	2010	147,636	\$14,119	\$202,744	\$20,274	10
27	J185	2013	56,620	\$28,377	\$251,935	\$35,991	7
28	J186	2013	149,168	\$55,254	\$290,228	\$41,461	7
29	J187	2013	62,637	\$49,649	\$287,886	\$41,127	7

Section 3

Residential Collection Operations and Options

R3

Section 3

Residential
Collection
Operations
and Options

Table 3.1: Fleet Maintenance Financials

	Vehicle Number	Purchase Year	Miles	FY 2018/19 Maintenance for Repairs	Lifetime Maintenance Repair Costs	Average Annual Maintenance Repair Costs	Vehicle Age
30	J188	2013	65,912	\$30,484	\$286,509	\$40,930	7
31	J190	2015	92,599	\$10,720	\$142,442	\$35,611	5
32	J191	2016	68,112	\$34,146	\$55,045	\$13,761	4
33	J192	2016	59,024	\$25,112	\$145,163	\$36,291	4
34	J193	2016	68,241	\$97,524	\$97,524	\$24,381	4
35	J194	2016	64,385	\$25,947	\$77,136	\$19,284	4
36	J195	2016	61,240	\$46,451	\$123,027	\$30,757	4
37	J196	2016	69,365	\$20,531	\$73,925	\$18,481	4
38	J197	2016	51,883	\$35,545	\$91,944	\$22,986	4
39	J198	2016	46,339	\$29,404	\$77,366	\$19,342	4
40	J199	2017	27,431	\$20,671	\$36,626	\$18,313	3
41	J200	2017	28,837	\$15,262	\$29,587	\$14,794	2
42	J201	2018	16,732	\$16,695	\$17,010	\$8,505	2
43	J202	2018	15,923	\$16,541	\$17,352	\$8,676	2
44	J203	2018	14,604	\$11,534	\$12,214	\$6,107	2
FY 18/19 Annual Fleet Maintenance				\$1,080,033	Average Fleet Age		10

3.1.2 Recommended Vehicle Replacement Plan

We reviewed the number, age, and mileage of each of the vehicles in the City's fleet and whether the vehicle appeared to be operational in FY 2018/2019. This information helps us determine whether these vehicles should be retained in active fleet service, retired, or maintained as a fleet backup for vehicles undergoing repairs.

In recommending that the City retire a vehicle, it is with the understanding that not all of the City vehicles the R3 team recommends to be retired from service will need to be replaced. On the City's busiest collection day, the City operates 23 routes and needs 23 vehicles.

Currently, the City's fleet has 18 vehicles that are less than 10 years old, which means they would need to replace 5 aging vehicles with new ones to service existing routes based on a 10-year vehicle age threshold for replacement.

As discussed below, the Division should consider adding at least 1 new route for trash and recycling per day (2 additional routes total). This would require 2 more vehicles, for a total of 25 vehicles. Thus, the Division would need to purchase a total of 7 new vehicles.

In addition to a total of 25 primary route vehicles (23 current daily routes plus 2 recommended additional routes) the Division also needs to have a sufficient number of safe and reliable backup vehicles (spares).

Section 3

Residential
Collection
Operations
and Options

The industry standard for spare vehicles is on the order of 15% of the total number of primary route vehicles. In the case of the Division, this would equate to at least four (4) good reliable spare vehicles.¹⁵

The decision to replace a vehicle, and determine which vehicles to maintain as spares, should be made on a vehicle-by-vehicle basis, accounting for the cost to own and operate that vehicle, its condition, reliability and ability to support productive collection operations. **Table 3.3** provides our initial recommendations with respect to which vehicles the Division should retain, replace, retire, and maintain as backup based on our review of the Division's current fleet age and maintenance costs. These preliminary recommendations should be reviewed by the Division and Fleet Maintenance and revised as appropriate.¹⁶

Table 3.2 Vehicle Replacement Schedule						
	Vehicle Number	Purchase Year	Vehicle Age (FY 19/20)	Average Annual Maintenance Costs	Recommendation	Estimated FY 2020 Costs
1	J141	1996	24	\$34,438	Retire	\$0
2	J151	1997	23	\$36,569	Retire	\$0
3	J155	1997	23	\$29,670	Retire	\$0
4	J157	2004	16	\$31,982	Retire	\$0
5	J158	2004	16	\$35,355	Retire	\$0
6	J159	2004	16	\$31,482	Retire	\$0
7	J160	2004	16	\$33,996	Retire	\$0
8	J161	2004	16	\$39,264	Retire	\$0
9	J164	2006	14	\$18,169	Retire	\$0
10	J165	2006	14	\$46,136	Retire	\$0
11	J166	2006	14	\$46,031	Retire	\$0
12	J167	2006	14	\$46,829	Retire	\$0
13	J168	2006	14	\$41,827	Retire	\$0
14	J169	2006	14	\$44,253	Retire	\$0
15	J170	2007	13	\$49,675	Replace	\$60,000
16	J172	2007	13	\$56,680	Replace	\$60,000
17	J173	2008	12	\$18,626	Maintain Backup	\$18,626
18	J174	2008	12	\$50,154	Replace	\$60,000
19	J175	2008	12	\$55,522	Replace	\$60,000

¹⁵ 25 primary routes x 15% = 4.05 spare vehicles.

¹⁶ A similar analysis of the Division's manual vehicle fleet should also be conducted.

Section 3

Residential
Collection
Operations
and Options

Table 3.2 Vehicle Replacement Schedule

	Vehicle Number	Purchase Year	Vehicle Age (FY 19/20)	Average Annual Maintenance Costs	Recommendation	Estimated FY 2020 Costs
20	J176	2008	12	\$54,012	Replace	\$60,000
21	J177	2008	12	\$13,827	Maintain Backup	\$13,827
22	J178	2008	12	\$34,997	Retire	\$0
23	J179	2008	12	\$31,179	Maintain Backup	\$31,179
24	J180	2010	10	\$40,042	Replace	\$60,000
25	J182	2010	10	\$50,033	Replace	\$60,000
26	J183	2010	10	\$22,527	Maintain Backup	\$22,527
27	J185	2013	7	\$41,989	Maintain	\$41,989
28	J186	2013	7	\$48,371	Maintain	\$48,371
29	J187	2013	7	\$47,981	Maintain	\$47,981
30	J188	2013	7	\$47,752	Maintain	\$47,752
31	J190	2015	5	\$35,611	Maintain	\$35,611
32	J191	2016	4	\$18,348	Maintain	\$18,348
33	J192	2016	4	\$48,388	Maintain	\$48,388
34	J193	2016	4	\$32,508	Maintain	\$32,508
35	J194	2016	4	\$25,712	Maintain	\$25,712
36	J195	2016	4	\$41,009	Maintain	\$41,009
37	J196	2016	4	\$24,642	Maintain	\$24,642
38	J197	2016	4	\$30,648	Maintain	\$30,648
39	J198	2016	4	\$25,789	Maintain	\$25,789
40	J199	2017	3	\$18,313	Maintain	\$18,313
41	J200	2017	3	\$14,794	Maintain	\$14,794
42	J201	2018	2	\$17,010	Maintain	\$17,010
43	J202	2018	2	\$17,352	Maintain	\$17,352
44	J203	2018	2	\$12,214	Maintain	\$12,214
Estimated Total FY 2020 Fleet Cost						\$1,054,590

3.1.3 New Fleet Annual Cost to Own and Maintain

For purposes of estimating vehicle costs, the R3 Team assumed that a new automated side load collections vehicle would cost approximately \$367,000 to purchase and deliver, and would be financed for 10 years at a 4.00% interest rate. Thus, the annual debt service payment would be approximately \$45,000. Additionally, even new vehicles incur routine maintenance costs. For the 2018 (purchase year) vehicles owned by the City, the average repair costs in FY 2018/19 was approximately \$15,000. Therefore, the annual debt service obligation and estimated annual maintenance costs for new vehicles totals \$60,000 per year, as seen in **Table 3.2**.

Table 3.3: Annual Vehicle Ownership Cost	
Term (Years):	10
Rate:	4.00%
Cost:	\$367,000
Annual Debt Service Payment	\$45,000
Plus: Maintenance Cost ¹	\$15,000
Total Annual Cost per Vehicle	\$60,000

¹ Based on FY 2018/19 repair costs for FY 2018 vehicles

Based on the average costs of maintenance for repairing vehicles and the purchase price and financial assumptions previously discussed for replaced vehicles, the financed cost of maintaining 18 active fleet vehicles, replacing 7 new vehicles for use in active service, and maintaining 4 vehicles as fleet backup is projected to cost Riverside approximately \$1,055,000 annually, about \$25,000 less than the City's current cost to maintain its aging fleet, with greater vehicle reliability and productivity.

3.1.4 CARB Compliance

In addition, The California Air Resources Board (CARB) approved the Solid Waste Collection Vehicle (SWCV) regulation in 2004 to reduce the harmful impacts of exhaust from diesel-fueled waste collection trucks. All solid waste collection vehicles or diesel-fueled trucks over 14,000 pounds gross vehicle weight with model-year engines from 1960 to 2006 must comply with this SWCV regulation by using best available control technology to reduce diesel particulate matter. Trucks with 2007 to 2009 model year engines must meet the CARB compliance requirements of the regulation by January 1, 2023.¹⁷ Based on the CARB compliance requirements, the R3 Project Team has determined that the Division's fleet includes 23 vehicles that need to be replaced, retired, or retrofitted by 2023, of the 26 vehicles to be replaced, retired or maintained as a spare.

3.2 Analysis of System Workloads and Number of Required Routes

The Division collects refuse, recyclables and yard waste four days per week. Collection days are Monday, Tuesday, Thursday, and Friday with collection crews working 10 hours per day.

R3

¹⁷ <https://www.arb.ca.gov/msprog/SWCV/SWCV.htm>

Section 3

Residential
Collection
Operations
and Options

For purposes of assessing the number of routes necessary to handle the existing workload, the following separate analyses were conducted:

1. Based on Industry Standards; and
2. Based on Time and Motion Data.

Those analyses projected the need for between one and three additional daily routes to handle the existing workload, based on current assumptions. For purposes of our financial analysis, we have assumed two additional routes, one for solid waste, and one for recycling.

3.2.1 Required Number of Routes Based on Industry Standards

Refuse Routes

Typically in a fully automated system with 10-hour days, the refuse routes are comprised of between 1,000 and 1,200 stops. Conditions such as set-out rates, customer compliance with containerization requirements, traffic, as well as distance to the fleet yard and solid waste management facilities can affect route size. Based on the R3 Team's route observations, refuse set out rates were close to 100% and most residents contained all refuse in their carts. Traffic was moderate, but wait times at the transfer station were high. Thus, R3 used the average of 1,100 stops per route as the target number of accounts per refuse route per day for purposes of assessing the reasonableness of existing refuse route workloads and projecting the total number of required refuse routes.

Recycling and Yard Waste Routes

Recycling and yard waste routes are typically larger than refuse routes due to lower weekly set out rates. For purposes of establishing initial target route workloads (accounts per route) for recycling and yard waste routes, we assumed an 80% set out rate for recycling and 70% for yard waste. Thus the average stops per route for a recycling route set at 20% higher than the 1,100 stop per route target for refuse routes or 1,320 stops per route, and the target daily route workload for green waste routes was set at 1,430 stops per route, 30% more than for refuse routes. The targeted average number of stops per route are shown in **Table 3.4**.

Table 3.4: Average Accounts per Route (Drive-Bys)		
Route Type	Number of Accounts (Drive-Bys)	Target Accounts (Drive-Bys)
Refuse	1,122	1,100
Recycling	1,562	1,320
Green Waste	1,381	1,430

As shown, the number of stops per route in the City exceed the target workloads for both refuse and recycling. Green waste routes are somewhat less than the target, however, green waste routes typically experience more seasonal variations than recycling so that target amount should be further assessed accounting for seasonal fluctuations in weekly participation rates and tonnages.

Attachment 5 provides a listing of the average number of accounts (drive-bys) for each of the Division's solid waste and recycling routes each day.

As shown, there is significant variability in the number of accounts assigned to the various routes, with some routes having significantly more than and less than the target of 1,100 accounts per route per day. This would indicate a potential need for rebalancing the overall daily workload among the individual routes.

Attachment 5 also includes similar data for the Division's recycling routes. In the case of recycling routes, all but one (1) route has more accounts than the target standards of 1,320 accounts, with many routes well above that figure.

To determine the number of routes required to service the weekly refuse and recycling workloads, as compared to the current number of routes, the current number of routes multiplied by the target standard to determine the total number of accounts that could be handled by the current routes based on the established standard. That figure was compared to the existing number of routes to determine the difference. The results of that analysis are provided in **Table 3.5** below.

As shown, based on that analysis, 0.2 additional solid waste routes and 1.1 recycling routes are projected to be required, while the existing green waste routes have some very limited capacity to handle a small increase in the daily workload, with the projection showing the need for 0.2 fewer green waste routes.

Table 3.5: Projected Number of Additional Routes Based on Industry Standards

Material Type	Additional Required Routes
Solid Waste	0.2
Recycling	1.1
Organics	(0.2)
Total	1.0

3.2.2 Required Number of Routes Based on Time and Motion Analyses

in addition to the "industry standard" projections above, the R3 Team also evaluated current system capacity using time and motion data. That analysis considered how much of the total time in the day is actually "on-route" collecting containers, and the average time it takes to service a typical fully automated container. The results of that analysis are provided in Table 3.6 below.

As shown, it is projected that a combined total of approximately 3 additional routes are required.

Note: *The time and motion analysis assumed that each route makes two (2) legal load trips per day to the transfer station. Changes to that assumption would have a material impact. If an average of 2.5 trips per day is assumed, the number of additional required routes increases to 5.0. Load management, and minimizing the number of trips to the transfer station each day (= maximizing the use of available vehicle capacity) is key to production collection operations. It should be the City's goal to limit the number of trips each route needs to make to the transfer station each day to two (2), without loading vehicles over their legal capacity, and fully utilizing all available on-route time to maximize the total number of accounts each route can collect.*

Section 3

Residential
Collection
Operations
and Options

Which may or may not be possible for all routes, and would figure prominently in the pros and cons of continuing with the current 4 day per week 10-hour per day collection schedule.¹⁸

Table 3.6: Projected Number of Additional Routes Based on Time and Motion Analysis

Material Type	Additional Required Routes
Solid Waste	1.3
Recycling	1.7
Organics	(0.1)
Total	2.9

3.3 Required Division Investment | Rate Increases

3.3.1 Refuse Fund 5-Year Financial Plan

Table 3.7 provides the City's Refuse Fund 5-year financial plan, assuming no rate adjustments. As shown, it is projected that the Refuse Fund will realize an annual shortfall of more than \$3 million dollars and at the end of the current fiscal year (FY 2019/20), the Refuse Working Capital will be \$30,000; less than 1 percent of total expenses. That annual deficit is projected to increase to \$3.6 million in FY 20/21, reaching \$4.7 million by the end of FY 2022/23. Note that these projections do not account for additional expenses the Division will incur to comply with SB 1383.

Table 3.7: Riverside Refuse Fund 5-Year Financial Plan

	Adopted		Projected		
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
User Fees	\$ 21,383,857	\$ 21,383,857	\$ 21,383,857	\$ 21,383,857	\$ 21,383,857
Street Sweeping Fines	\$ 1,207,200	\$ 1,250,000	\$ 1,293,750	\$ 1,339,031	\$ 1,385,897
Misc. Revenues	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578
Total Revenues	\$ 23,053,635	\$ 23,096,435	\$ 23,140,185	\$ 23,185,466	\$ 23,232,332
Expenses	\$ 25,232,031	\$ 26,191,876	\$ 26,826,705	\$ 27,449,841	\$ 27,956,450
Surplus/(Deficit)	\$ (2,178,396)	\$ (3,095,441)	\$ (3,686,520)	\$ (4,264,375)	\$ (4,724,118)
FY Beginning Working Capital	\$ 5,302,983	\$ 3,124,587	\$ 29,146	\$ (3,657,374)	\$ (7,921,749)
Use of Working Capital	\$ (2,178,396)	\$ (3,095,441)	\$ (3,686,520)	\$ (4,264,375)	\$ (4,724,118)
FY Ending Working Capital	\$ 3,124,587	\$ 29,146	\$ (3,657,374)	\$ (7,921,749)	\$ (12,645,867)
Working Capital Percentage of Expenses	12%	0%	-14%	-29%	-45%

Given the Refuse Funds current 5-Year Financial Plan the City needs to increase rates to address the projected \$3 million annual shortfall projected for FY 2019/20, whether it outsources the Division's residential collection operations or not.

¹⁸ Most of the Division's fleet has a 12-ton payload limit, which is relatively high, which is good from the standpoint of maximizing the number of accounts that can be collected within 2 legal loads. The exception to this are vehicles J185 through J188, which have a 15-ton limit.

A rate increase of 20% on July 1, 2020 would address the projected \$3 million annual deficit and put the Refuse Fund in a reasonable financial position, with net positive revenues for FY 20/21, and a modest increase in Working Capital, as shown in **Table 3.8**. This will provide some time to plan for subsequent annual rate adjustments that will be needed to address SB 1383 compliance whether the Division's collection operations are maintained or outsourced. A 20% rate increase would increase the current monthly residential rate of \$26.01 by \$5.20 to \$31.21 per month.

Table 3.8: Minimum Recommended FY 2020/21 Rate Adjustment

	Adopted		Projected		
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
User Fees	\$ 21,383,857	\$ 21,383,857	\$ 25,660,628	\$ 25,660,628	\$ 25,660,628
Street Sweeping Fines	\$ 1,207,200	\$ 1,250,000	\$ 1,293,750	\$ 1,339,031	\$ 1,385,897
Misc. Revenues	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578
Total Revenues	\$ 23,053,635	\$ 23,096,435	\$ 27,416,956	\$ 27,462,237	\$ 27,509,103
Expenses	\$ 25,232,031	\$ 26,191,876	\$ 26,826,705	\$ 27,449,841	\$ 27,956,450
Surplus/(Deficit)	\$ (2,178,396)	\$ (3,095,441)	\$ 590,251	\$ 12,396	\$ (447,347)
FY Beginning Working Capital	\$ 5,302,983	\$ 3,124,587	\$ 29,146	\$ 619,397	\$ 631,794
Use of Working Capital	\$ (2,178,396)	\$ (3,095,441)	\$ 590,251	\$ 12,396	\$ (447,347)
FY Ending Working Capital	\$ 3,124,587	\$ 29,146	\$ 619,397	\$ 631,794	\$ 184,447
Working Capital Percentage of Expenses	12%	0%	2%	2%	1%
Assumed Rate Adjustments			20%	0%	0%

A rate increase of 34% on July 1, 2020 would provide for the 7 additional drivers, 5 new fully-automated side loaders, and one Supervisor I position that R3's review supports to address the additional current resource needs of the Division. A 34% rate increase would increase the current monthly residential rate of \$26.01 by \$8.84 to \$34.85 per month.

Section 3

Residential
Collection
Operations
and Options

Table 3.9: Rate Adjustment to Fully Fund Current Refuse Fund Operations

	Adopted		Projected		
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
User Fees	\$ 21,383,857	\$ 21,383,857	\$ 28,600,909	\$ 28,600,909	\$ 28,600,909
Street Sweeping Fines	\$ 1,207,200	\$ 1,250,000	\$ 1,293,750	\$ 1,339,031	\$ 1,385,897
Misc. Revenues	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578	\$ 462,578
Total Revenues	\$ 23,053,635	\$ 23,096,435	\$ 30,357,237	\$ 30,402,518	\$ 30,449,384
Operating Expenses	\$ 25,232,031	\$ 26,191,876	\$ 26,826,705	\$ 27,449,841	\$ 27,956,450
One Time Vehicle Replacement ⁽¹⁾			\$ 315,000	\$ 315,000	\$ 315,000
Additional Route Drivers ⁽²⁾			\$ 176,000	\$ 181,280	\$ 186,718
One Additional Supervisor I Position ⁽³⁾			\$ 123,000	\$ 126,690	\$ 130,491
Expenses	\$ 25,232,031	\$ 26,191,876	\$ 27,440,705	\$ 28,072,811	\$ 28,588,659
Surplus/(Deficit)	\$ (2,178,396)	\$ (3,095,441)	\$ 2,916,532	\$ 2,329,707	\$ 1,860,725
FY Beginning Working Capital	\$ 5,302,983	\$ 3,124,587	\$ 29,146	\$ 2,945,678	\$ 5,275,384
Use of Working Capital	\$ (2,178,396)	\$ (3,095,441)	\$ 2,916,532	\$ 2,329,707	\$ 1,860,725
FY Ending Working Capital	\$ 3,124,587	\$ 29,146	\$ 2,945,678	\$ 5,275,384	\$ 7,136,109
Working Capital Percentage of Expenses	12%	0%	11%	19%	25%
Assumed Rate Adjustments			34%	0%	0%

⁽¹⁾ Assumes purchase of 7 new vehicles at an annual financed cost of \$45,000

⁽²⁾ Assumes 2 additional drivers (Solid Waste Operators) each at \$88,000 fully loaded costs

⁽³⁾ Assumes 1 additional Supervisor I position escalated at 3% annually

Source: City of Riverside 2018-2020 Biennial Budget; Refuse Fund Five-Year Financial Plan

3.4 Outsourcing

3.4.1 Methods Used to Provide Collection Services

Jurisdictions provide solid waste collection services to their customers through the following three (3) major methods:

- 1) Exclusive Franchise Service;
- 2) Non-Exclusive Franchise Service; and
- 3) Municipal Service.

The City of Riverside is unique in that it incorporates each of these three methods; providing municipal residential collection services in a portion of the City, contracting with an exclusive franchised hauler (Burrtec) to provide residential services in the remaining portion of the City, and providing commercial services through a non-exclusive franchised system with Burrtec, Athens, and CR&R competing for commercial accounts under a City-regulated commercial rate structure.

3.4.2 Municipal Versus Outsourced Operations in California

Of the more than 500 incorporated cities and counties in the State of California the vast majority contract with the private sector for some or all solid waste management services through exclusive and/or non-exclusive franchise systems. There are currently less than 50 municipal operated solid waste management systems in the State.

3.4.3 Pros and Cons of Municipal and Outsourced Operations

Table 3.10 below, provides a comparison of the advantages and disadvantages of each of the three solid waste management service methods.

Table 3.10: Advantages / Disadvantages of Solid Waste Collection Service Methods			
Advantages	Private / Franchised		Public
	Exclusive	Non-Exclusive	Municipal
One Hauler to Monitor and Handle SB 1383 Requirements	✓		NA
One Agreement to Manage / Update	✓		NA
Consistency of Outreach / Education Programs	✓		✓
Operational Efficiencies	✓		✓
Reduced Environmental Impacts – Fewer Haulers per Area	✓		✓
Relative Ease Implementing New Programs and Services	✓		✓
Customers Can Select Among Multiple Service Providers		✓	
Competitive Market Pressure – Low Rates / High-Quality Service		✓	
Direct Control over Costs, Rates, and Services			✓
No Contract(s) to Manage or Amend			✓
Direct Control over Support Services (Safety, Maintenance, Customer Services, Billing)	✓	✓	
Ability to Implement Rate Structure with Financial Incentives for Customers and Full (Public or Private) Cost Coverage	✓	✓ ¹	✓

Section 3

Residential
Collection
Operations
and Options

Table 3.10: Advantages / Disadvantages of Solid Waste Collection Service Methods			
Disadvantages	Private / Franchised		Public
	Exclusive	Non-Exclusive	Municipal
Customers Can't Select Service Provider	✓		✓
No Market Competition to Keep Prices Low / Service Quality High	✓		✓
Multiple Agreements to Manage / Update		✓	
Requires Coordination of Outreach and Education Programs		✓	
Multiple Haulers to Monitor and Handle SB 1383 Requirements		✓	
Increased Jurisdictional Responsibility – Manage / Hire / Fire Staff, Regulation Compliance, Monitoring, Reporting, Equipment Maintenance			✓
Lack of Corporate Backing and Resources, Including Training			✓
No Direct Control Over Fleet Maintenance Operations and Risk/Safety Management			✓
Need to Regulate Rates	✓	✓ ¹	✓
^[1] Jurisdictions can, but do not need to, regulate non-exclusive hauler rates.			

As shown in **Table 3.10**, there are advantages and disadvantages to both private and municipal operations. Perhaps the greatest advantage of municipal operations is the direct control that the jurisdiction has over its solid waste management system. On the flip side, that total control also comes with the jurisdiction's total responsibility for the operational, financial, and regulatory compliance aspects of those services.

Section 4: Franchised Collection Alternatives

4.1 City Municipal Code

The City's Municipal Code is another mechanism the City can use to enforce compliance with the new and expected regulatory legislation. R3 has reviewed the City's Municipal Code and identified that amendments should be made to reflect current legislation. The City should consider making changes to the Municipal Code to support the collection of organics and implementation of newly enacted state laws. Specifically, the City should consider making changes to the Municipal Code that includes language that mirrors AB 1826 and SB 1383 (as described in the New State Legislation section above). This would allow for businesses to make these changes and adjust to the new policies as regulations continue to be phased in. R3 recommends that the City amend the Municipal Code to encourage and enforce the diversion of organic material.

4.2 Residential Franchised Collection Alternatives

The City Division provides weekly curbside collection service of refuse, recyclable and green waste to two-thirds of the City's residences. Burrtec provides these services to the remaining one-third of City residences. The City's current SEIU Memorandum of Understanding (SEIU MOU) and the Burrtec collection contract both are set to expire in June 2020.

The following options are presented based on recommendations from the 2018 Performance Audit and the R3 Project Team's 2019 review of residential collection operations:

Residential Option 1: Maintain status quo.

In this option, the City would retain services from both the City and contract services. By maintaining status quo, the City would need to either issue a request for proposal for a new contract or renegotiate the outdated service contract with the existing residential hauler.

Residential Option 2: Elect to contract all residential services.

In this option, the City could choose to:

- a. Negotiate the outdated service contract with the existing residential hauler; or
- b. Prepare a request for proposals for residential services and rates.

**Option 2b would require short term extensions to both SEIU MOU and the residential service contract.*

4.3 Commercial Franchised Collection Alternatives

The City currently maintains agreements with three haulers with a City-approved rate structure that includes the option for annual and unusual adjustments per contract and City approval and competitive market-based approach for recycling. The currently approved rate expires in June 2020 and the contracts expire in June of 2023.

Section 4

Franchised
Collection
Alternatives

As mentioned above, the City was required by CalRecycle to create and implement a corrective action plan in February 2019 which includes education and outreach activities, monitoring, and notification.

To address these requirements, the R3 Project Team recommends the City select from the following four guiding principles while considering a system-wide approach to developing the City's collection program to include organics collection:

- 1) Retain the existing commercial non-exclusive franchise system;
- 2) Establish a commercial exclusive franchise system with multiple haulers by districting the City via a competitive procurement process, or extensions with the existing haulers;
- 3) Establish a commercial exclusive franchise system with one hauler via a competitive procurement; or
- 4) The City could provide commercial organics collection via its own collection fleet.

R3 has developed a list of rate structure options that the City may consider for organic waste collection service.

Commercial Option 1: A universal roll-out with minimum 64 and 96-gallon organics collection carts to all commercial customers with a bundled rate for garbage and organics; additional 64 and 96-gallon organics carts or carts over 96-gallons will be an additional cost to customers.

With this option, the City could choose to:

- a. Provide the collection service for 64-gallon and 96-gallon carts and allow the 3 haulers to provide bin collection service (1 cubic-yard and greater). This would require the City establish its own collection rates and also establish rates for the 3 haulers.
- b. Procure a single hauler to provide collection service setting maximum rates of which can be annually adjusted for carts and bins.

Commercial Option 2: A universal roll-out with minimum 64 and 96-gallon organics collection carts to all commercial customers setting rates for collection separate from garbage and recycling; additional 64 and 96-gallon organics carts or carts over 96-gallons will be an additional cost to customers.

With this option, the City could choose to:

- a. Provide the commercial organics collection service for 64-gallon and 96-gallon carts and allow the 3 haulers to provide bin collection service (1 cubic-yard and greater). This would require the City establish its own collection rates and also establish rates for the 3 haulers.
- b. Provide the commercial organics collection service for 64-gallon and 96-gallon carts setting even rates in place for the 3 haulers for all bin service (1 cubic-yard and greater). Also establishing 3 geographic zones within the City for each of the 3 haulers to service. This option would still require the City to establish its own collection rates and also establish rates for the 3 haulers.
- c. Become the sole provider for commercial organics collection service throughout the whole City providing 64-gallon and 96-gallon collection carts and bins (1 cubic-yard and greater) to commercial customers.

**R3 does not recommend option 2c as the City does not have the ability to provide bin service for larger commercial customers.*

R3

Commercial Option 3: Procure a single hauler to provide commercial organics collection service for the whole City. This option would require that the City set maximum rates for service and enter into a new contract with the chosen hauler.

With this option, the City would have the ability to control the rates.

Commercial Option 4: The City continue with the same current collection system between the 3 haulers setting maximum rates for cart and bin organics collection service.

With this option, the City could choose to:

- a. Allow each hauler to operate throughout the whole City at set maximum rates.
- b. Establish a geographic zone for each hauler within the City. This would ensure each hauler has equal opportunity for a customer base.

The subsections of the rate structures listed above provide the City with certain customizations of which can be further modified.

4.4 New Contract and Municipal Code Language

The current contracts are not up-to-date with the most recent legislation as described in section 2 of this study.

Performance standards should be incorporated in the new or negotiated contract(s) to address compliance with regulatory requirements for implementation, outreach and participation related to recycling and organics programs (AB 341, AB 1826, and SB 1383), including:

- **Reporting Component:** Identify businesses and multi-family accounts (generators) that must comply with the regulations
- **Education Component:** Conduct annual education and outreach to businesses and multi-family accounts about the regulations and how to comply
- **Compliance Monitoring Component:** Identify businesses and multi-family accounts that are not in compliance and informing them of their requirements and how they can comply
- **Recycling/Organics Service Component:** Ensure that recycling (AB 341) and organics waste (AB 1826 & SB 1383) services are available to all businesses, and all customers have an organics and recycling program provided by 2022 (SB 1383).
- **Route Auditing Component:** Report container replacement requirements (color and labeling) and quarterly contamination audits.

The City may consider adding a fee specifically charged to customers for the costs to implement the requirements of the mandate, similar to the AB 939 support fee that has been charged in many California communities to implement and manage recycling programs. The cost elements that should be considered for a new SB 1383 fee include:

- **Containers and Labeling:** The cost to standardize container colors and labeling that designate the appropriate materials for each receptacle.
- **Contamination Monitoring:** Added route audits to monitor contamination levels and new reporting requirements.

Section 4

Franchised
Collection
Alternatives

- **Education and Outreach:** Educating customers how to sort materials into the correct receptacles to reduce contamination. Site visits to each commercial and multi-family customers to right-size containers that fit in enclosures and meet new regulation requirements.
- **Enforcement:** Code enforcement issuing penalties for non-compliance beginning no later than January 2024.
- **Collection and Routing Costs:** Costs can be affected based on the number and efficiencies of routes, and the facilities that material is directed to.
- **Processing and Transportation Costs:** There is typically an added costs to process material for recovery prior to disposal. Depending on location of the processing facility and disposal facility, added costs for transportation may arise as well.

The City should also consider updating the Municipal Code to:

- Require the three authorized haulers to track recycling and organics collection compliance data (AB 341 and 1826);
- Develop a food waste collection program including adding the necessary staffing (i.e., monitoring, outreach, drivers), routes, and trucks to accommodate the program;
- Structure the customer rates in a way that adds more resources into the new food waste, organics diversion requirements, and recycling market fluctuations;
- Include an adjustment mechanism that recaptures disposal and processing costs in the next rate adjustment year for adjustments that occur after the rates are set; and
- Revise the development fee surcharge on commercial and industrial customers to provide for collection of the surcharge starting with subscription to solid waste services.

R3