



SAN RAFAEL CITY COUNCIL AGENDA REPORT

Department: City Manager's Office

**Prepared by: Cory Bytof,
Sustainability Program Manager**

City Manager Approval: 

TOPIC MARIN SANITARY SERVICE RATES FOR 2024

SUBJECT RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN RAFAEL AUTHORIZING MAXIMUM RATES TO BE IMPOSED AND COLLECTED BY MARIN SANITARY SERVICE FOR REFUSE AND RECYCLABLE MATERIAL COLLECTION AND DISPOSAL SERVICES TO BE EFFECTIVE JANUARY 1, 2024, AND DETERMINING THAT THE CITY'S FRANCHISE FEES AND REFUSE VEHICLE IMPACT FEES ARE JUSTIFIED BY THE CITY'S COSTS OF PROVIDING SOLID WASTE SERVICES, REASONABLE CHARGES FOR THE USE OF CITY PROPERTY FOR SOLID WASTE SERVICES, AND THE COSTS OF ADDRESSING THE IMPACTS OF SOLID WASTE REFUSE VEHICLES.

RECOMMENDATION:

Adopt a resolution authorizing maximum rates collected by Marin Sanitary Service for Refuse and Recyclable Material Collection and Disposal Services to be effective January 1, 2024, and determining that the City's franchise fees and refuse vehicle impact fees are justified by the City's costs of providing solid waste services, reasonable charges for the use of City property for solid waste services, and the costs of addressing the impacts of solid waste refuse vehicles.

EXECUTIVE SUMMARY:

This report details the rate adjustment proposal for 2024 for Marin Sanitary Service to provide refuse, recycling, and organic materials composting, hauling, and processing for customers in San Rafael. Customers include residential homeowners, apartment owners, commercial property owners, and other businesses and tenants that pay solid waste bills. The proposed rate adjustment would allow Marin Sanitary Service to increase rates by up to a maximum of 6.22% over 2023 levels for all customers. This increase includes adjustments based on the contractually agreed-upon rate-setting methodology the City has with Marin Sanitary Service and an extension of the Illegal Dumping Pilot Program. The proposed rate adjustment is based upon an independent third-party review of MSS's costs of providing the service by R3 Consulting Group, Inc. (R3).

Additionally, the franchise agreement includes a franchise fee and a refuse vehicle impact fee

FOR CITY CLERK ONLY

Council Meeting: _____

Disposition: _____

paid by MSS to the City. R3 has completed a franchise fee study, which analyzed the City's franchise fee and refuse vehicle impact fee and determined that the fees are justified by the City's costs of providing solid waste services, reasonable charges for the use of City property for solid waste services, and the costs of addressing the impacts of solid waste refuse vehicles providing solid waste services.

BACKGROUND:

Each year, the City Council holds a public hearing to authorize the maximum collection rates that can be charged by Marin Sanitary Service to customers in the City of San Rafael. These rates are based on a specific methodology contained in the franchise agreement the City has with Marin Sanitary Service. This methodology has been in effect since 2018 when the City entered into the [Third Amendment to the Franchise Agreement](#).

Franchise Agreement, Franchise Fees, and Franchisors' Group

Article XI of the California Constitution and the California Public Resources Code allows cities to regulate refuse and recycling services. Marin Sanitary Service is the City's sole provider of refuse hauling and recycling services and performs these services in many surrounding communities as well. These services are pursuant to a franchise agreement between the City and Marin Sanitary Service, which outlines the services that must be provided by the company as well as a methodology to be followed to set customer rates each year. The franchise agreement with Marin Sanitary Services includes a franchise fee, which recovers the City's costs of providing solid waste-related services, including the negotiation and administration of the franchise agreement, as well as charges for the reasonable value of the use of City property for the provision of solid waste services. Additionally, the franchise agreement includes a refuser vehicle impact fee to recover the costs of addressing the specific impacts of refuse vehicles on City streets and rights-of-way.

The fourth amendment to the current franchise agreement was approved by the City Council in [December 2021](#). The franchise agreement, including all amendments, contains a rate-setting methodology based on the cost of service and primarily ties compensation to a common index: the CPI index for water and sewer and trash collection. It also includes a mechanism to capture recycling revenues intended to help offset the cost of processing. This methodology was developed to ensure accuracy and transparency while providing relatively stable and predictable rates and continued verifiable high levels of service.

All the jurisdictions in Marin that have similar franchise agreements with Marin Sanitary Service work together to share information and reduce costs. These include the City of San Rafael, the City of Larkspur, the Towns of Ross, San Anselmo, and Fairfax, the Las Gallinas Valley Sanitary District, and the County of Marin. These seven agencies meet throughout the year to oversee the company's operations and work together to conduct a single annual rate review analysis rather than each jurisdiction having to conduct and pay for a separate review, saving thousands of dollars annually.

State Law

In 2016, recognizing the negative impacts of organic materials decomposing in landfills on climate change, the State of California started mandating that businesses with certain thresholds of refuse disposal compost their organic materials, such as food waste and landscape materials (Assembly Bill (AB) 1826). Beginning January 2022, [Senate Bill \(SB\) 1383](#) began requiring that all residents and businesses divert their organic waste. SB 1383 also placed new requirements on local governments to implement, monitor, and enforce participation in organic waste diversion programs. The California Department of Resources Recycling and Recovery (CalRecycle) is

authorized to fine local governments that do not comply. The City of San Rafael recently signed an [agreement with Zero Waste Marin](#) to provide support to achieve compliance with SB 1383 and assess opportunities to create economies of scale working countywide to implement the law.

Marin Sanitary Service Programs and Services

Marin Sanitary Service provides residential, commercial, and multi-family refuse services, including garbage, recycling, and organics (food waste and green waste diversion) collection and processing. The company also provides garbage and recycling pick-up for City facilities, public spaces, and all sidewalk receptacles downtown and throughout San Rafael.

Marin Sanitary Service is a key partner in the City's environmental goals as well as the City's and County's zero waste goals. The company conducts most of the outreach for the City for the State's Mandatory Commercial Recycling and Mandatory Composting laws (AB 341, AB 1826, and SB 1383), which place requirements on businesses to recycle and divert organic waste and require annual monitoring and notifications to non-compliant businesses. Marin Sanitary Service also has a robust community outreach and education program and conducts numerous programs and community offerings, including an annual free compost giveaway and customer education event. All their services including, the "[Where Does it Go, Joe](#)" recycling lookup feature, can be found on their website at [MarinSanitaryService.com](#).

ANALYSIS:

A. Proposed Maximum Rate Adjustment for 2024

History of Rate Adjustments

The five-year rate increase history for San Rafael averages 5.22%, with a range of 2.39% to 7.15%. Last year's adjustment was 7.15% and included an Illegal Dumping Pilot project, which staff proposes to continue in 2024. Many factors contribute to the fluctuation in rates for refuse haulers, including a growing amount of solid waste, recycling, and organic (compostable) materials generated by residents and businesses, the costs of processing recyclables and organic materials, changes in the value of recyclable materials, landfill fees, increasing costs of labor and insurance, and changes in State laws and other government fees.

Rate Review and Adjustment

Attachment 2 is the independent third-party analysis and report of Marin Sanitary Service's 2024 Rate Application, which was conducted by R3 Consulting Group, Inc. San Rafael's calculated rate adjustment is 6.22%. As shown in the report, Collector Operations comprised the largest portion of the rate adjustment and was calculated using the Consumer Price Index (CPI) for Water, Sewer and Trash Collection, which was 5.71% but reduced to 5.0% based on a ceiling provision built into the Franchise Agreement's rate setting methodology. Much of this increase is attributed to and closely tracks current inflation levels.

The second largest contribution to the rate adjustment is the recyclable materials processing cost. This is due to a drop in the prices Marin Sanitary Service could earn selling recyclables such as paper, plastic, glass, and aluminum. Paper and plastic, in particular, saw significant drops in prices, and the overall per ton cost of processing went from \$18.72 last year to \$78.87 per ton this current year. Business revenue, while still down, was less than projected, resulting in a benefit to the rate calculation for 2024 of just under one percent in the annual rate revenue reconciliation.

This year, the City Attorney's Office conducted an analysis of the City's franchise fees due to a recent decision by the California State Supreme Court in *Zolly v. City of Oakland*, which ruled that franchise fees may be subject to Article XIII C of the California Constitution ("Proposition 26"). Under Proposition 26, all charges imposed by public agencies must fit within one of its

enumerated exceptions, or they will be considered taxes, which require voter approval. In the context of solid waste, fees generally fit within one of Proposition 26's exceptions if they are charges for (1) City services that do not exceed the City's costs to provide the services; (2) the use of public property; or (3) a special benefit or privilege granted directly to the payor. This study was conducted by R3 Consulting Group, Inc. The study demonstrated that the City's cost of providing solid waste-related services together with the reasonable charges that the City could impose for the use of City property for solid waste services exceed the City's current 10% franchise fee. The study also established that the City's refuse vehicle impact fee is slightly less than the City's costs of addressing the impacts of solid waste vehicles on the City's streets and roads. These results can be found in Attachment 4. This year's rate adjustment resolution includes a statement of finding that the City's franchise fees are justified based on the recently completed analysis in Attachment 4.

Illegal Dumping Program

Four years ago, a cross-departmental Together San Rafael Team ("Team") developed a 5-year plan with the goal of reducing illegal dumping by 50% by 2025. Over time, the Team was expanded to include Marin Sanitary Service, R3, Gigantic Idea Studios, the Mattress Recycling Council, Conservation Corps North Bay, City volunteers, and community members through Voces del Canal, Mujeres Empoderadas, and the Canal Community Resilience Council. The Team has been using a human centered design approach.

Part of the early work of this project was to better understand who is dumping and why, as well as what types of materials are being dumped the most. The Team has identified three major types of dumpers with the understanding that each type requires different solutions to achieve success: (1) *casual dumpers*, who usually are renters that have no access to free, on-site disposal and resort to setting things out on the curb; (2) *illicit dumpers*, who know this is illegal, have large amounts of items to dispose of, and seek out-of-the-way locations to dump; and (3) *unhoused dumpers*. This project is focused on the first two, though the Team has collaborated with the City's Health and Safety Committee and other departments to assist with waste management related to homelessness.

Last year was the fourth year of pilot projects aimed at understanding the upstream causes of the problem, identifying potential solutions, and conducting activities for different types of dumping based on three key areas of focus:

- Access to affordable disposal options
- Education and community engagement
- Targeted enforcement

Earlier pilot programs focused primarily on disposal options and community engagement, and the Team has been conscious about bringing an equity lens to this analysis. For example, while single family homeowners can have bulky items picked up curbside twice a year, renters in multi-family units have no such option. Thus, the pilot projects have been primarily focused on providing cost-effective disposal options that adequately address renter's needs. Recent pilot projects and community engagements have also shown that enforcement may not only be necessary to combat illicit dumping but may also be necessary in some cases to encourage casual dumpers toward these disposal options.

In 2023, the Team conducted the following pilots and activities:

- 12 monthly bulky item drop-off days at Pickleweed Park targeting our neighborhoods with the most prevalent illegal dumping in the Canal and near downtown.

- Additional “Hot Spot” campaigns focused on engagements, data analysis, mapping, and surveillance camera installations with enforcement in locations where dumping is a common occurrence.
- A service-level analysis of multi-family properties and a policy analysis for potential permanent policy considerations regarding minimum refuse and recycling service levels and bulky item disposal.
- Mini-grants and commercial vouchers for businesses that experience dumping on their property.
- Continued tracking and curing of dumping data to measure pre and post intervention results (including types of material, amounts, and locations) and updates to the City’s data dashboard.
- A data gap analysis of all programs and pilots.
- Conclusion of a pilot project and data analysis in conjunction with the Mattress Recycling Council to test an on-call bulky item pickup program for apartment complexes.
- Participation in a [presentation](#) of the Mattress Recycling Council pilot results at the 3rd Annual Illegal Dumping Conference in Oakland.

Outcomes of the 2023 pilot projects and activities can be found in Attachment 3, including information about the service-level analysis of multifamily properties as well as key outcomes from the Mattress Recycling Council on-call pickup pilot. Overall, a moderate correlation between properties not meeting the 32-gallon service level minimum and illegal dumping incidents was noted, but further research will be necessary to establish causation. Factors present in both that analysis and the Mattress Recycling Council pilot included size and location of properties, engagement level of property managers, and proximity to commercial areas.

The Mattress Recycling Council pilot project was developed to test a way to address the critical transportation barrier many multifamily tenants experience trying to dispose of unwanted bulky items. Some key findings of the pilot included an understanding that need vary among different types of properties, direct tenant engagement is necessary, cost is a factor in getting property managers to comply or participate in bulky item collection programs, and space limitations play significant role in bulky item storage for later pickup. Currently, the Mattress Recycling Council is reviewing the final report which staff submitted this summer.

The bulky item drop-off days continue to be the most successful and cost-effective disposal options for renters to date, though they do not address the transportation barrier. Community members appreciate the events and have provided input on ways to maximize participation. Additionally, they are helpful for apartment managers trying to do the right thing with limited resources. Community surveys indicate a majority of Canal residents know about the events and the amount of materials collected has continued to increase.

One critical finding throughout these last four years of investigation is that successes only happen when all three interventions occur: equitable access to disposal options, targeted enforcement, and creative and continuous community engagement and outreach. Therefore, the goal of the analysis this year will be to identify the right combination and level of programming to achieve a systemic and sustainable response that results in a significant and measurable reduction in dumping while providing equitable services to all residents. This analysis will also provide cost implications and potential funding sources for a variety of scenarios.

In addition, the plan for 2024 will include additional Hot Spot campaigns, targeted enforcement, and continued data gathering and mapping to measure progress and uncover additional interventions. Data gathering will continue to be refined and improved to ensure consistency

across departments and ongoing measurement. A final landscape scan will be included to revisit other cities' programs and data to make sure all promising and replicable solutions are considered.

This year's programs, data gathering, and analysis carries an estimated cost of approximately \$123,400, commensurate to previous years, which results in a 0.4% impact to the 2024 rate adjustment. The Team will also seek other funding to increase activities and reduce the impact on the rates. The 2024 Illegal Dumping Funding Memo, which provides more detail on the proposed workplan, and activities is included as Attachment 3.

Conclusion

R3 reviewed the application and all relevant documents and financial schedules with Marin Sanitary Service, including the illegal dumping pilot extension. The full schedule of rate adjustment line items can be found on page 1 of Attachment 2: Review of Marin Sanitary Service's 2024 Rate Application. Staff reviewed the rate adjustment and programs with an ad hoc City Council subcommittee of Councilmember Bushey and Mayor Colin, resulting in the staff recommendation to authorize the maximum amount to be collected in 2024 with a rate adjustment of 6.22%.

This rate adjustment would result in an overall increase of \$3.12 per month for a residential 32-gallon landfill cart, which is the most common cart size, for a total monthly fee of \$53.31. For a common commercial size, there would be an overall increase of \$39.57 per month for a three cubic yard bin, for a monthly total of \$658.59. Recycling is included in all accounts and customers can reduce their regular landfill container size or pickup schedule resulting in a lower rate by recycling and by reducing overall waste generation. Organics recycling is also provided, which is included in the residential rates and is offered at approximately 60% of the cost of landfill service for the commercial composting program.

R3 conducted a survey of bay area solid waste rates as part of the rate review, included on the last page of the report. It summarizes the survey data for residential 30-35 gallon can weekly service with curbside recycling and organics pickup. However, note that the proposed 2024 rates are not yet available for other jurisdictions. This summary compares proposed San Rafael 2024 base rates to other jurisdictions' 2023 actual rates, which will likely also increase. Using this comparison, San Rafael's rates are slightly higher than other bay area jurisdictions and slightly lower than most other Marin jurisdictions. However, jurisdictions often provide different services and service levels, so these are not necessarily equal comparisons. San Rafael's rates have traditionally been comparable with rates in other bay area jurisdictions, while often providing more services. This year, R3 reports that in neighboring jurisdictions the rate adjustments are above 10%.

As in previous years, staff is recommending that the authorized maximum rate adjustment be applied uniformly to all residential, multi-family, and commercial service accounts. Actual maximum rates for all services are provided in Attachment 1 as Exhibit C - Schedule of Rates.

COMMUNITY OUTREACH:

Notice of the public hearing was published twice in the *Marin Independent Journal* (Attachment D) and emailed to all names on file with the City Clerk and City Manager's Office. Information on the maximum annual rate that MSS may collect has been available at the City Clerk's office during the ten days prior to the public hearing. The proposed rate information was also provided directly to the San Rafael Chamber of Commerce, the Business Improvement District, the Marin Builder's Association, and other interested parties.

FISCAL IMPACT:

If authorized, the maximum rates would be authorized for all customer types and service options and satisfies the City's contractual obligations to meet the MSS revenue requirements to cover costs for San Rafael refuse and recycling services, including franchise fees. Franchise fees are deposited into the City's General Fund, and all costs for solid waste-related services are paid for out of the General Fund. Refuse vehicle impact fees are deposited into the City's Gas Tax Fund, and all road maintenance expenses related to the impacts of refuse vehicles, are paid for out of that same fund. Exhibit C to the resolution contains the complete maximum rate request.

OPTIONS:

1. Adopt a resolution authorizing maximum rates collected by Marin Sanitary Service for Refuse and Recyclable Material Collection and Disposal Services to be effective January 1, 2024, resulting in a 6.22% rate increase, and determining that the City's franchise fees and Refuse Vehicle Impact Fees are justified by the City's costs of providing solid waste services, reasonable charges for the use of City property for solid waste services, and the City's costs of addressing the impacts of solid waste refuse vehicles.
2. Adopt the resolution with modifications.
3. Do not adopt the resolution at this time and direct staff to come back with more information.

RECOMMENDED ACTION:

Adopt a resolution authorizing maximum rates collected by Marin Sanitary Service for Refuse and Recyclable Material Collection and Disposal Services to be effective January 1, 2024, and determining that the City's franchise fees and refuse vehicle impact fees are justified by the City's costs of providing solid waste services, reasonable charges for the use of City property for solid waste services, and the City's costs of addressing the impacts of solid waste refuse vehicles.

ATTACHMENTS:

- Attachment 1: Resolution with Rate Schedule (marked as Exhibit C)
- Attachment 2: R3 Review of MSS Rate Application, including Bay Area Rate Survey
- Attachment 3: R3 2023 Illegal Dumping Funding Memo
- Attachment 4: R3 2023 San Rafael Franchise Fee Study
- Attachment 5: Public Hearing Notice

RESOLUTION NO.

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN RAFAEL AUTHORIZING MAXIMUM RATES COLLECTED BY MARIN SANITARY SERVICE FOR REFUSE AND RECYCLABLE MATERIAL COLLECTION AND DISPOSAL SERVICES TO BE EFFECTIVE JANUARY 1, 2024, AND DETERMINING THAT THE CITY'S FRANCHISE FEES AND REFUSE VEHICLE IMPACT FEES ARE JUSTIFIED BY THE CITY'S COSTS OF PROVIDING SOLID WASTE SERVICES, REASONABLE CHARGES FOR THE USE OF CITY PROPERTY FOR SOLID WASTE SERVICES, AND THE COSTS OF ADDRESSING THE IMPACTS OF SOLID WASTE REFUSE VEHICLES.

WHEREAS, the City of San Rafael and Marin Sanitary Service have entered into an "Amendment and Restatement of Collection Agreement of the City of San Rafael and Marin Sanitary Service," dated September 4, 2001 and amended by a written first amendment dated March 1, 2005, a written second amendment dated November 14, 2012, a written third amendment dated February 25, 2019, and a written fourth amendment approved by the City Council on December 6, 2021 (hereafter the "Franchise Agreement"); and

WHEREAS, Section 3 (B) of the Franchise Agreement provides for maximum rates allowed to be collected by Marin Sanitary Service, to be authorized from time to time by the City Council; and

WHEREAS, Exhibit "C" of the Franchise Agreement provides rate schedules, to be authorized by the City Council; and

WHEREAS, Marin Sanitary Service has submitted a rate application request for 2024 using the methodology outlined under Section 3 (A) of the Franchise Agreement; and

WHEREAS, the City of San Rafael has conducted a review of said rate application based on a formula determined by Marin Sanitary Service's actual cost of service and produced a report concurring with Marin Sanitary Service's rate and fee adjustments; and

WHEREAS, the City of San Rafael adopted by resolution an amendment to the Franchise Agreement dated January 6, 1997 to include an annual franchise fee in the amount of 10% of gross receipts; and

WHEREAS, the City of San Rafael has conducted a review of said franchise fees based on the City's actual cost of providing solid waste-related services and the reasonable values of City property used for solid waste services and produced a report justifying the City's annual franchise fee amounts ("Franchise Fee Report"); and

WHEREAS, the City of San Rafael adopted a resolution amending the Master Fee Schedule to increase the Refuse Vehicle Impact Fee in order to pay for the increased costs of addressing the impacts of refuse vehicles on City streets; and

WHEREAS, the City of San Rafael has conducted a review of said Refuse Vehicle Impact Fees, set forth in the Franchise Fee Study, and determined that the fees do not exceed the City's reasonable costs of addressing the impacts of refuse vehicles on City streets; and

WHEREAS, the rates for solid waste service are set and imposed by MSS and the City's franchise fees and Refuse Vehicle Impact Fees are set by the Franchise Agreement, and by adopting this resolution, the City does not intend to impose any rates, fees, or charges on solid waste customers. However, to the extent that the adoption of this resolution results in the City's imposition of any fees, rates, or charges, on solid waste customers, for services or facilities in connection with a solid waste system, including the franchise fees or the Refuse Vehicle Impact Fees, those charges are adopted pursuant to California Health and Safety Code section 5471; and

WHEREAS, on December 18, 2023, the City Council held a duly noticed public hearing to consider the rate application request and receive public testimony thereon; and

WHEREAS, the City of San Rafael has determined that such rate and fee adjustments are proper, in the best interest of all citizens, and will promote public health, safety and welfare.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SAN RAFAEL DOES RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

Section 1. The schedule of maximum rates and fees attached hereto as "Exhibit C" and incorporated herein by reference, is hereby approved to be collected by Marin Sanitary Service for refuse and recyclable material collection and disposal services, at an increased rate of 6.22% over 2023 rates, to be effective January 1, 2024. Said "Exhibit C" shall be incorporated as the revised Exhibit "C" to the Franchise Agreement.

Section 2. The City Council accepts and adopts the Franchise Fee Study and finds and determines that the City's franchise fees and Refuse Vehicle Impact Fees comply with Article XIII C of the California Constitution and are justified by the City's costs of providing solid waste-related services, reasonable charges for the use of City property for solid waste services, and the City's costs of addressing the impacts of solid waste refuse vehicles.

I, Lindsay Lara, City Clerk of the City of San Rafael, hereby certify that the foregoing Resolution was duly and regularly introduced and adopted at a regular meeting of the City Council of the City of San Rafael, held on Monday, the 18th of December 2023, by the following vote, to wit:

AYES: Councilmembers:

NOES: Councilmembers:
ABSENT: Councilmembers:

LINDSAY LARA, City Clerk

**CITY OF SAN RAFAEL
EXHIBIT C - SCHEDULE OF RATES**

RESIDENTIAL REFUSE COLLECTION RATES					
		Rate increase:	6.22%		
		Effective date:	01/01/2024		
<i>Residential Service (Bundled service includes 1 landfill (garbage) cart, 1 organics cart, & 1 recycling split cart)</i>					
RECURRING CHARGES	Weekly Service Rates (Billed Quarterly)	Flat rate		Hill Rate	
		Monthly Rate	Quarterly Rate	Monthly Rate	Quarterly Rate
	20 gallon cart	\$45.32	\$135.96	\$51.31	\$153.93
	32 gallon cart	\$53.31	\$159.93	\$60.39	\$181.17
	64 gallon cart	\$106.62	\$319.86	\$120.78	\$362.34
	96 gallon cart	\$159.93	\$479.79	\$181.17	\$543.51
	Low income - 20 gal* cart	\$36.26	\$108.78	\$41.05	\$123.15
	Low income - 32 gal* cart	\$42.65	\$127.95	\$48.31	\$144.93
	Low income - 64 gal* cart	\$85.30	\$255.90	\$96.62	\$289.86
	Low income - 96 gal* cart	\$127.94	\$383.82	\$144.94	\$434.82
	<i>Senior rate**Discontinued</i>	\$37.63	\$112.89	\$47.92	\$143.76
	Additional Organics Cart Rental (35 or 64 gallon cart)	\$2.85	\$8.55	\$2.85	\$8.55
	Additional Split Cart Rental (64 or 96 gallon cart)	\$2.85	\$8.55	\$2.85	\$8.55
	Additional Monthly Charges	Monthly Fee	Quarterly Fee		
		(per cart, each way)			
Distance 0' - 50'	\$6.91	\$20.73			
Distance Over 50'	\$14.01	\$42.03			

*Must meet PG&E CARE program eligibility requirements.

**Customers with these rates prior to 2005 will keep the existing rate type. No new customers will be added with this rate type.

NOTE: We may not be able to accommodate any collection requests NOT at the curb due to a variety of factors including safety, accessibility, and efficiency. Requests to be assessed and approved by Route Manager.

Additional Service Fees per Occurrence	Fee
Return Fees - Off day	\$25.00
Return Fees - Same day	\$10.00
Resume Service/Late Fee	\$35.00
Contamination (cart) any size cart	\$30.00
Overload/Overweight (cart)	\$25.00
Extra bag garbage	\$15.00
Extra bag yard waste	\$10.00
Steam Clean (cart)	\$15.00
Special Collection	\$35.00
Special Handling (Bulky items)	\$30.00
Bulky item fees per item	Fees Vary
Cart Strap Set-up Admin Fee	\$25.00
20 Gal Cart Replacement Fee	\$55.00
32 Gal Cart Replacement Fee	\$60.00
64 Gal Cart Replacement Fee	\$65.00
96 Gal Cart Replacement Fee	\$75.00
64 Gal Split Cart Replacement Fee	\$90.00
96 Gal Split Cart Replacement Fee	\$100.00

**CITY OF SAN RAFAEL
EXHIBIT C - SCHEDULE OF RATES**

COMMERCIAL REFUSE MONTHLY COLLECTION RATES

Rate increase: 6.22%
Effective date: 01/01/2024

RECURRING CHARGES	COMMERCIAL CARTS, BINS, ROLL-OFFS	Collections per Week						Additional One Time Empty/On Call
	Garbage	1	2	3	4	5	6	
20 gallon cart*	\$45.32	\$90.64	\$135.96	\$181.28	\$226.60	\$271.92	\$10.46	
32 gallon cart	\$52.95	\$105.90	\$158.85	\$211.80	\$264.75	\$317.70	\$12.22	
64 gallon cart	\$105.90	\$211.80	\$317.70	\$423.60	\$529.50	\$635.40	\$24.44	
96 gallon cart	\$158.85	\$317.70	\$476.55	\$635.40	\$794.25	\$953.10	\$36.66	
1 yard bin	\$344.13	\$694.87	\$1,052.20	\$1,416.25	\$1,786.80	\$2,163.96	\$79.41	
2 yard bin	\$505.98	\$1,162.51	\$1,763.59	\$2,377.88	\$3,005.41	\$3,646.15	\$116.76	
3 yard bin	\$658.59	\$1,226.39	\$1,869.42	\$2,532.16	\$3,214.84	\$3,917.33	\$151.98	
4 yard bin	\$939.54	\$1,736.84	\$2,644.85	\$3,579.41	\$4,286.49	\$5,527.83	\$216.82	
5 yard bin	\$1,016.32	\$2,043.99	\$3,115.71	\$4,220.31	\$5,358.12	\$6,528.89	\$234.54	
6 yard bin	\$1,206.56	\$2,452.79	\$3,738.82	\$5,064.42	\$6,429.69	\$7,834.68	\$278.44	
10 yard roll-off	\$1,700.58	\$3,480.13	\$5,340.81	\$7,279.84	\$9,298.28	\$11,396.00	\$392.44	
18 yard roll-off	\$3,054.42	\$6,251.81	\$9,591.96	\$13,074.95	\$16,700.78	\$20,469.51	\$704.87	
20 yard roll-off	\$3,393.91	\$6,946.43	\$10,657.71	\$14,527.69	\$18,556.42	\$22,743.85	\$783.21	
25 yard roll-off	\$4,747.53	\$9,717.29	\$14,325.08	\$19,526.50	\$24,941.50	\$30,569.87	\$1,095.58	
	Organics (F2E or Compost)	1	2	3	4	5	6	Additional One Time Empty/On Call
32 gallon	\$21.96	\$43.92	\$65.88	\$87.84	\$109.80	\$131.76	\$5.07	
64 gallon	\$43.92	\$87.84	\$131.76	\$175.68	\$219.60	\$263.52	\$10.14	
1 yard	\$153.67	\$307.34	\$461.01	\$614.68	\$768.35	\$922.02	\$35.46	
2 yard	\$307.34	\$614.68	\$922.02	\$1,229.36	\$1,536.70	\$1,844.04	\$70.92	
3 yard	\$461.01	\$922.02	\$1,383.03	\$1,844.04	\$2,305.05	\$2,766.06	\$106.39	
10 yard roll-off	\$1,190.41	\$2,380.82	\$3,571.23	\$4,761.64	\$5,952.05	\$7,142.46	\$274.71	
18 yard roll-off	\$2,142.74	\$4,285.48	\$6,428.22	\$8,570.96	\$10,713.70	\$12,856.44	\$494.48	
20 yard roll-off	\$2,380.82	\$4,761.64	\$7,142.46	\$9,523.28	\$11,904.10	\$14,284.92	\$549.42	
25 yard roll-off	\$2,976.03	\$5,952.06	\$8,928.09	\$11,904.12	\$14,880.15	\$17,856.18	\$686.78	
	Garbage Compactors (Per empty)							
	Roll-off Compactor Tipping fee per ton	\$146.16			Roll-off Compactor Hauling charge		\$328.52	
	Stationary FL (Per Compacted Yard)	\$126.93			Roll-off Compactor Special handling		Rates Vary	
	Other Charges	Service		Fee	Details			
		Lock		\$25.00	Monthly fee per collection and commodity			
		Box rental		Fees Vary	Minimum Bimonthly fee			
		Minimum Load	ML	Fees Vary	Monthly fee			
		Distance < 50ft		\$6.91	Monthly fee per cart, each way			
	Distance > 50ft		\$14.01	Monthly fee per cart, each way				

* Customers must have a sufficient level of service for the volume of material generated. Requests for 20gal carts require assessment and approval of a Route Manager.

NOTE: All container types and sizes may not be available at all locations depending on a variety of factors including safety, accessibility, and efficiency. Requests to be assessed and approved by Route Manager.
On Call rate only available with approval from Route Manager

ONE TIME SERVICE FEES	Commercial Service Fees	Fee
	Return Fee - BIN	
Return Fee - CART -same day		\$10.00
Return Fee - CART -off day		\$25.00
Late Fee/Resume Service Fee		\$35.00
Contamination (BIN)		\$50.00
Contamination (CART)		\$30.00
Overload/Compaction (BIN)		\$60.00
Overload/Compaction (CART)		\$25.00
Additional Empty/Bag Garbage		\$15.00
Additional Empty BIN		Fees vary
Extra Bag Yard Waste		\$15.00
Steam Clean (1-6 yard BIN)		\$95.00
Steam Clean (CART)		\$15.00
Steam Clean (COMPACTOR/ROLL-OFF)		\$225.00
Lock Set-up Admin Fee		\$25.00
Lock Single Use Fee		\$5.00
Lock Purchase Fee		\$20.00
Lock Bar Bin Set-up Fee		\$75.00
Overweight Charge Per Ton*		\$205.00
20 Gal Cart Replacement Fee		\$55.00
32 Gal Cart Replacement Fee		\$60.00
64 Gal Cart Replacement Fee		\$65.00
96 Gal Cart Replacement Fee		\$75.00
64 Gal Split Cart Replacement Fee		\$90.00
96 Gal Split Cart Replacement Fee		\$100.00
Bin Repair/Replacement Fee**		Fees vary

*(Boxes exceeding 300lbs/yard)

**Fees vary by size up to \$1,200, not to exceed current replacement value.

**CITY OF SAN RAFAEL
EXHIBIT C - SCHEDULE OF RATES**

MULTI-FAMILY DWELLING REFUSE MONTHLY COLLECTION RATES

Rate increase: 6.22%
Effective date: 01/01/2024

	MFD CARTS, BINS, ROLL-OFFS							Additional One Time Empty/On Call
	Collections per Week							
Garbage	1	2	3	4	5	6		
20 gallon cart*	\$45.32	\$90.64	\$135.96	\$181.28	\$226.60	\$271.92	\$10.46	
32 gallon cart	\$53.31	\$106.62	\$159.93	\$213.24	\$266.55	\$319.86	\$12.30	
64 gallon cart	\$106.62	\$213.24	\$319.86	\$426.48	\$533.10	\$639.72	\$24.60	
96 gallon cart	\$159.93	\$319.86	\$479.79	\$639.72	\$799.65	\$959.58	\$36.91	
32 gallon - hill	\$60.39	\$120.78	\$181.17	\$241.56	\$301.95	\$362.34	\$13.94	
64 gallon - hill	\$120.78	\$241.56	\$362.34	\$483.12	\$603.90	\$724.68	\$27.87	
96 gallon - hill	\$181.17	\$362.34	\$543.51	\$724.68	\$905.85	\$1,087.02	\$41.81	
1 yard bin	\$331.61	\$668.50	\$1,010.75	\$1,358.26	\$1,711.03	\$2,069.07	\$76.53	
2 yard bin	\$505.98	\$1,159.84	\$1,755.65	\$2,361.99	\$2,978.97	\$3,606.49	\$116.76	
3 yard bin	\$658.59	\$1,207.03	\$1,834.39	\$2,477.59	\$3,136.64	\$3,811.51	\$151.98	
4 yard bin	\$939.54	\$1,731.57	\$2,628.93	\$3,547.64	\$4,405.21	\$5,448.44	\$216.82	
5 yard bin	\$1,016.32	\$2,011.73	\$3,057.25	\$4,129.21	\$5,227.67	\$6,352.58	\$234.54	
6 yard bin	\$1,191.16	\$2,414.09	\$3,668.70	\$4,955.07	\$6,273.20	\$7,623.04	\$274.88	
10 yard roll-off	\$1,700.58	\$3,480.13	\$5,340.81	\$7,279.84	\$9,298.28	\$11,396.00	\$392.44	
18 yard roll-off	\$3,054.42	\$6,251.81	\$9,591.96	\$13,074.95	\$16,700.78	\$20,469.51	\$704.87	
20 yard roll-off	\$3,393.91	\$6,946.43	\$10,657.71	\$14,527.69	\$18,556.42	\$22,743.85	\$783.21	
25 yard roll-off	\$4,747.53	\$9,717.29	\$14,325.08	\$19,526.50	\$24,941.50	\$30,569.87	\$1,095.58	
Organics	1	2	3	4	5	6	Additional One Time Empty/ on Call	
Additional Organics Cart Rental (35 gallon cart) after 4 TOTAL carts per cart per month	\$2.85	\$5.70	\$8.55	\$11.40	\$14.25	\$17.10	NA	
Additional Organics Cart Rental (64 gallon cart) after 4 TOTAL carts per cart per month	\$2.85	\$5.70	\$8.55	\$11.40	\$14.25	\$17.10	NA	
1 yard	\$153.67	\$307.34	\$461.01	\$614.68	\$768.35	\$922.02	\$35.46	
2 yard	\$307.34	\$614.68	\$922.02	\$1,229.36	\$1,536.70	\$1,844.04	\$70.92	
3 yard	\$461.01	\$922.02	\$1,383.03	\$1,844.04	\$2,305.05	\$2,766.06	\$106.39	
Garbage Compactors (Per empty)								
Roll-off Compactor Tipping fee per ton		\$146.16		Roll-off Compactor Hauling charge			\$328.52	
Stationary FL (Per Compacted Yard)		\$126.93		Roll-off Compactor Special handling			Rates Vary	
Other Charges	Service	Fee		Details				
	Lock		\$25.00	Monthly fee per collection and commodity				
	Box rental		Fees Vary	Minimum Bimonthly fee				
	Minimum Load ML		Fees Vary	Monthly fee				
	Distance < 50ft		\$6.91	Monthly fee per cart, each way				
Distance > 50ft		\$14.01	Monthly fee per cart, each way					

NOTE: Minimum service level is 32 gallons per unit or equivalent volume. Decrease to 20 gallon per unit is subject to company review and approval.
 NOTE: Up to four (4) Organics carts provided at no additional charge. Additional carts may be rented for a nominal monthly fee.
 NOTE: All container types and sizes may not be available depending on a variety of factors including safety, accessibility, and efficiency. Requests to be assessed and approved by Route Manager.
 On Call rate only available with approval from Route Manager

	MFD One Time Service Fees	Fee
	Return Fee - BIN	
Return Fee - CART -same day		\$10.00
Return Fee - CART -off day		\$25.00
Late Fee/Resume Service Fee		\$35.00
Contamination (BIN) Per Yard		\$50.00
Contamination (CART)		\$30.00
Overload/Compaction (BIN)		\$60.00
Overload/Compaction (CART)		\$25.00
Additional Empty/Bag Garbage		\$15.00
Extra Bag Yard Waste		\$10.00
Additional Empty Garbage		Fees vary
Steam Clean (BIN)		\$95.00
Steam Clean (CART)		\$15.00
Steam Clean (COMPACTOR/ROLL-OFF)		\$225.00
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Lock Purchase Fee		\$20.00
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64 Gal Cart Replacement Fee		\$65.00
96 Gal Cart Replacement Fee		\$75.00
64 Gal Split Cart Replacement Fee		\$90.00
96 Gal Split Cart Replacement Fee		\$100.00
Bin Repair/Replacement Fee**		Fees vary by size up to \$1,200

*(Boxes exceeding 300lbs/yard)
 **Fees vary by size not to exceed current replacement value.

FINAL REPORT

City of San Rafael

Review of Marin Sanitary Services' 2024 Rate Application

submitted electronically: October 6, 2023

October 6, 2023

John Stefanski
Assistant City Manager
City of San Rafael
1400 Fifth Avenue
San Rafael, CA 94919
submitted via email: John.Stefanski@cityofsanrafael.org

SUBJECT: Final Report – Review of Marin Sanitary Service’s 2024 Rate Application

Dear Mr. Stefanski,

R3 Consulting Group, Inc. (R3) is pleased to submit this report detailing the results of our review of Marin Sanitary Service’s (MSS’s) 2024 rate application for the City of San Rafael.

This review was conducted pursuant to R3’s engagement with the seven agencies (Agencies) served by MSS, including the City of San Rafael, City of Larkspur, County of Marin, Las Gallinas Valley Sanitary District, Town of Ross, Town of Fairfax, and the Town of San Anselmo.

This report summarizes results from our review of MSS’s 2024 indexed rate application per the streamlined rate setting methodology established in 2019. The methodology is described in the amended Exhibit B to the Franchise Agreement that the City holds with MSS.

* * * * *

We appreciate the opportunity to be of service to the City. Should you have any questions regarding this report or need any additional information, please do not hesitate to reach out directly.

Sincerely,



Jim Howison | *Sr. Managing Consultant*
R3 Consulting Group, Inc.
925.768.7244 | jhowison@r3cgi.com

FINDINGS

Executive Summary

On August 31, 2023, MSS submitted its application for an increase to its solid waste rates, to be effective January 1, 2024. This is an indexed year rate adjustment, which primarily projects compensation due to MSS based on the applicable water-sewer-trash CPI Index (WST). Based on our review of the rate application, R3 concurs with MSS’s calculated 2024 rate revenue requirement of \$30,308,192, which is \$1,775,008 higher than the 2023 rate revenue requirement of \$28,533,184. The corresponding adjustment to the City’s solid waste rates for 2024 is 6.22%, based on a January 1, 2024 effective date.

Table 1: 2024 Rate Adjustment Summary

	2023	2024	Dollar Change	Percentage Change	Adjustment to Rates
Collector Operations	17,380,581	18,249,610	869,029	5.00%	3.05%
Garbage Landfilling and Organics Processing	2,790,260	2,975,895	185,635	6.65%	0.65%
State Compliance Database Subscription	8,393	(4,197)	(12,590)	-150.00%	-0.04%
SB 1383 Compliance	209,174	223,017	13,843	6.62%	0.05%
Illegal Dumping Pilot Program	100,000	123,400	23,400	23.40%	0.08%
Profit Calculation	2,150,717	2,264,015	113,298	5.27%	0.40%
Recyclable Materials Processing	189,407	749,801	560,394	295.87%	1.96%
Interest	395,256	415,019	19,763	5.00%	0.07%
Zero Waste Marin Fees	379,410	394,265	14,855	3.92%	0.05%
Franchise Fees	2,791,986	2,995,369	203,383	7.28%	0.71%
Other Agency Fees	1,480,601	1,480,601	0	0.00%	0.00%
Annual Rate Revenue Reconciliation	613,327	354,503	(258,824)	-42.20%	-0.91%
Recycling Property Insurance	67,689	86,894	19,205	28.37%	0.07%
SB 1383 Negotiations and Implementation Support	(23,617)	0	23,617	-100.00%	0.08%
Total Annual Rate Revenue Requirement	28,533,184	30,308,192	1,775,008	6.22%	6.22%

2024 Rate Adjustment Details

Collector Operations

Collector Operations compensates MSS for labor, benefits, general and administrative, depreciation and lease, maintenance, fuel and oil. Per Exhibit B, compensation for Collector Operations is adjusted using the CPI index for Water and Sewer and Trash Collection. R3 used publicly available Bureau of Labor Statistics data to verify the calculated increase of 5.0% to Collector Operations. Per Exhibit B, the rate adjustment is subject to a 2.5% minimum and a 5% maximum rate cap for MSS’s collection operations.

The result is \$18,249,610 in Collector Operations for the City of San Rafael in 2024, which is an increase of \$869,029 compared to 2023.

Garbage and Organics Tipping Fees

Garbage Landfilling and Organics Processing tipping fee projections are calculated using actual tonnages collected from January 1 through June 30, 2023, which are then annualized to project total 2023 tonnages. Those tonnages are then multiplied by the projected 2024 tipping fees calculated in accordance with Exhibit B. This is based on the actual per ton tipping fees for each waste stream category, or if unavailable, projected tipping fees are calculated using the current year per ton tipping fees escalated by the change in WST— subject to a minimum increase of 2.5% and a maximum increase of 5.0%.

R3 reviewed MSS's projected 2024 tons and the 2024 per ton tipping fees for residential garbage, residential green waste/organics, commercial garbage, commercial mixed waste for processing, commercial food scraps, and MSS-served Agencies' waste delivered to MSS. Per Exhibit B, R3 confirmed that MSS materially correctly projected tons by category using annualized actual tons for the first six months of the current rate year and, as actual tipping fees are unavailable, applied the 5.0% WST adjustment to project 2024 per ton tip fees. The result is \$2,975,895 in Garbage and Organics Tipping fees for the City in 2024, which is an increase \$185,635 compared to 2023.

Database Subscription for Compliance with State Law

The rate setting methodology allows for the recovery of additional revenues associated with costs for changes in law and/or new State mandates. For increased operating expenses due to State Laws, including AB 1826 and SB 1383, MSS has included in its rate application a line item for a compliance database. Zero Waste Marin has assumed responsibility for the tracking and reporting of materials. MSS discontinued its subscription to Recyclist and received a refund. Compared to 2023 costs declined-\$12,590. For 2024 the City's portion of that credit totals \$4,197.

Compliance with SB 1383

MSS is requesting continued revenue in association with SB 1383 with the goal of increasing compliance with the State of California's organics state mandates. The company will continue to provide compliance monitoring and inspection services, contamination monitoring, outreach and education, and reporting functions on behalf of the City. The total 2024 revenue recovery for these new SB 1383 compliance measures for MSS is \$223,017 for an increase of \$13,843 or 6.62%.

Illegal Dumping Pilot Program Funding

Since 2020, the City has been piloting and testing programs to reduce and abate incidences of illegal dumping in the City, in partnership with MSS and others. In 2023, the City allocated \$100,00 for the illegal dumping pilot program. For 2024, City staff recommends increasing funding to \$123,400.

Profit Calculation

R3 reviewed the calculation of MSS's profit, which is a function of total allowable operating expenses (\$21,567,725 for the City) divided by the contractually set operating ratio of 90.5% and subtracting the same sum, rounded to the nearest dollar. MSS's actual profit achievement will vary depending on the company's real revenues and expenses; as such, profit is not guaranteed. The result is \$2,264,015 in Calculated Profit for the City in 2024, which is an increase of \$113,298 compared to 2023. The increase is due to increases in allowable operating expenses, which were described in the previous sections of this report.

Recyclable Materials Processing

A net recyclable materials processing cost is calculated each year to share the risks and rewards of changing recycling markets between rate payers and MSS. Per Exhibit B, the Recyclable Materials

Processing cost is escalated by the annual change in the WST and that amount is then divided by the number of all tons of recyclable materials processed at Marin Recycling Center from July 1 of the prior rate year through June 30 of the current rate year.

The recyclable materials revenue amount is calculated based on 90% of the total revenue received by the Marin Recycling Center for recyclable materials, which is then divided by the number recyclable material tons processed at Marin Recycling Center. The calculation does not include income or tons from recyclable materials processed for third parties or agencies that were not customers of MSS or the Marin Recycling Center as of December 31, 2018. For Rate Year 2024, the resulting Net Recyclable Materials Processing Cost Per Ton is \$78.87, an increase of \$60.15 from the 2023 value of \$18.72. This increase is due to changes in the value of recyclable commodities sold by MSS. The result is \$749,801 in Recyclable Materials Processing costs for the City in 2024, which is an increase of \$560,394.

Interest

Interest is based on MSS's actual interest from its loan amortization schedules for actual and projected capital expenditures for services under the Agreement as of the last base year review in 2019. This is increased in the same manner as Collector Operations, as described above, via WST annually. The result is \$415,019 in interest for the City in 2024, which is an increase of \$19,763 compared to 2023.

Zero Waste Marin Fees

Zero Waste Marin Fees are set as a pass through as government fees and, per Exhibit B to the agreements, changes in such fees result in appropriate adjustments to rates to compensate MSS for increases or decreases in such fees. Zero Waste Marin fees included in the annual indexed rate applications for the MSS service area are set to be equal to the current Zero Waste Marin Fee assessments for the current fiscal year, with 100% of the MSS hauler fees passed through to the MSS Agencies, and with none of the MSS Transfer Station fees passed through to the MSS Agencies. The result is \$394,265 in Zero Waste Marin Fees for the City in 2024, which is an increase of \$14,855 compared to 2023.

Franchise Fees

Franchise Fees are calculated by multiplying the applicable franchise fee percentage by each agency served by MSS by the revenues projected for each that Rate Year. The City's Franchise Fee is 10% of gross revenues. The result is \$2,995,369 in Franchise Fees for the City in 2024. Franchise Fees fund the costs of compliance with State laws, management and administration of the City's Agreement with MSS, and compensate the City for the value of the property rights conveyed to MSS via the Agreement.

Other Agency Fees

Other Agency Fees are calculated and applied to each of the Agencies based on the specific fees set by those Agencies. MSS pays the City a \$1,480,601 Vehicle Impact Fee to cover the cost of road impacts from MSS's solid waste collection vehicles.

Annual Rate Revenue Reconciliation

The Rate Revenue Reconciliation item is to reconcile the projected rate revenue from the 2022 rate adjustment to the actual revenue collected through rates charged during the 2021 rate year. MSS experienced a shortfall of \$354,503 in 2022 billed revenues That amount is therefore included in the 2024 rate application.

Recycling Property Insurance

Property insurance costs for recycling processing facilities have gone up across the country for circumstances outside of MSS's control. MSS has previously and separately briefed the Agencies on this item, and R3 is aware of the market circumstances surrounding it. R3 finds that this extraordinary item is

supported and reasonable. The result is \$86,894 in Recycling Property Insurance for the City in 2024, which is an increase of \$19,205 compared to 2023.

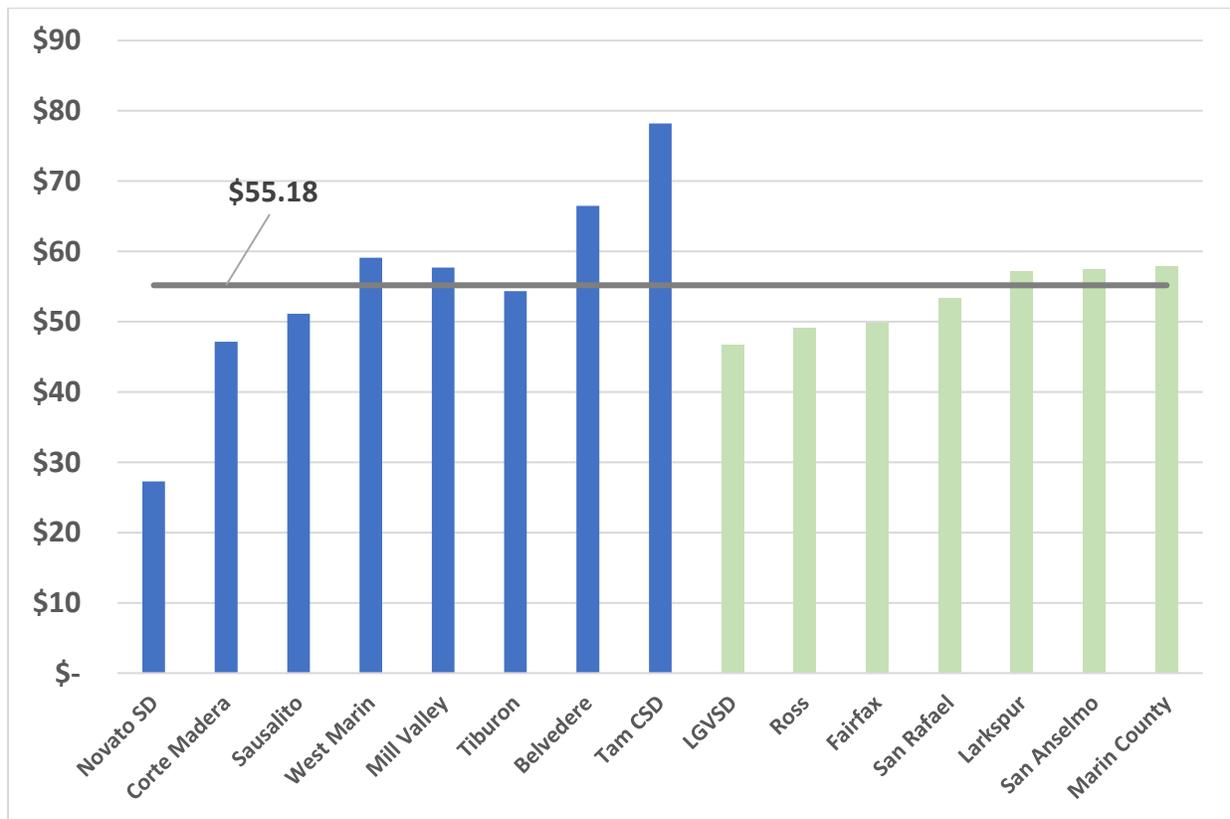
Funding for SB 1383 Contract Negotiations and Implementation

The MSS served Agencies have contracted with R3 to provide support for negotiation of an amendment to the MSS franchise agreements with the Agencies, effectuating the new services, terms and conditions for SB 1383 compliance. That contract also includes a contingency for support to the Agencies in implementing SB 1383 in 2022. R3's expenses for that work were budgeted at \$44,380. San Rafael's portion totaled a credit of \$23,617 and was fully refunded in 2023.

Survey of Comparable Rates

Figure 1 illustrates R3's survey of solid waste rates as of October 2023 for agencies located throughout Marin County. These survey results are presented as an indication of the reasonableness of the resulting rates for 2024. For comparison purposes, agencies serviced by MSS are designated in green and represent the proposed pricing for 32-gallon cart, including the current rate increase. Other, non-MSS service agencies are designated in blue and are current pricing, though price increases are expected for 2024 as well. The average cost for the 30–35-gallon cart for non-MSS service agencies is represented by the grey line is \$55.18. The 32-gallon cart is projected to cost \$53.31 per month for the flat regions of the City. The 2024 Hill Rate for the 32-gallon cart is projected at \$60.39 per month. The City's commercial rates for a 3-cubic yard bin serviced one time per week will be \$658.59 compared to \$620.02 the previous year.

Figure 1: Comparison of MSS's 2024 Rates to Other Marin County Agencies



To: Cory Bytof, Sustainability Program Manager, City of San Rafael

From: Nate Forst and Garth Schultz, R3 Consulting Group

Date: October 20, 2023

Subject: 2024 Illegal Dumping Reduction Pilot Program Recap + Funding Memo

Illegal Dumping Pilot Program Overview

Background

Illegal Dumping Reduction Goal

The Illegal Dumping Pilot Programs (IDP) were launched by the City of San Rafael with the primary objective of addressing the proliferation of abandoned items across the city. The City has a bold goal of achieving a 50% reduction in illegal dumping by the close of 2025, a goal that necessitates a high level of collaboration among different City departments and the community to address the multifaceted and uniquely challenging problem of illegal dumping.

Pilot Program Inception & Growth

During the initial years of the IDP (2018 – 2021), the City sought to reduce illegal dumping through program efforts focused primarily on reducing the supply of large and unwanted items in public spaces. Implementation centered on conducting small scale "bulky waste" collection and recycling events (results are detailed in the City of San Rafael Illegal Dumping Pilot Report: Bulky Waste Collection and Recycling Events). These early pilots demonstrated a noticeable decrease in illegal dumping, establishing a baseline of success that prompted recommendations for ongoing, and more comprehensive, actions in the city. The City began a modest expansion and continuation of successful bulky waste collection events and despite by the COVID-19 pandemic during 2020-2021, the following occurred:

- Bulky waste drop-off events were increased from three (3) to six (6) days in 2021 as compared to 2020 resulting in 456 cubic yards of material collected (a 140% increase over 2020)¹.

Additionally, and the City explored new programs to prevent and respond to illegal dumping.

- Free dumping vouchers for tenants of Bret Harte, Canal, and Gerstle Park led to the collection of over from 350 cubic yards of material through 2021.
- Free dump coupons were offered to commercial property owners (and promoted by email), but minimal participation was recorded.

Expansion of Proven Concepts and Exploration of New Approaches

In 2022 - 2023, IDP efforts underwent growth and diversification. The IDP expanded upon the established successful components of previous IDP initiatives and ventured into new analyses and policy testing to explore the underlying reasons for illegal dumping (as described below). Additionally, a new

¹ The program reached more users and collect significantly more material in 2021 and did so at a cost per cubic yard collected that was lower than the Multi-Family Voucher program. Bulky waste drop-off events recorded a cost per cubic yard of \$78, as compared with a cost of \$113 per cubic yard for the Multi-family voucher pilot.

pilot program was launched using funds obtained through a grant from the Mattress Recycling Council (MRC) and with assistance from the Conservation Corps North Bay (CCNB).

Expanded Bulky Waste Drop-off Events:

Reinforcing the impressive “return on impact” of funds invested (as indicated above), the number of bulky waste drop-off events was again doubled in 2022, increasing from six (6) to twelve (12) days; additionally, the events were made a recurring monthly fixture at Pickleweed Park. In 2023, this expansion was maintained at 12 events per year, offering a consistent and dependable service for a test population of approximately 6,800 multifamily housing units. The outcome of this growth and consistency of bulky waste drop-off events has borne impactful results for the City, increasing disposal access and remaining a reliable option for residents and a cost-effective program for the City.

- In 2022, a total of 1,520 cubic yards of material were collected, showing a 233% increase compared to 2021 totals.
- 2023 is currently on pace to collect similar amount of material, indicating ongoing demand for the program as it has been maintained as a monthly offering.
- Expansion yielded more demand than anticipated and was achieved at a cost per cubic yard of \$61 in 2022, down from \$78 per cubic yard in 2021 - illustrating increasing economies of scale as this program has grown. The cost per cubic yard for 2023 is projected to be roughly equivalent to 2022.²

This program's success solidifies its position as one of the City's primary value-driving pilot program among those attempted thus far.

New Analysis and Policy Testing

Free Multifamily Dwelling (MFD) On-Call Bulky Item Pickups

While single-family homeowners in San Rafael have biannual on-call bulky item collection, multifamily dwelling (MFD) units lack this service. To combat illegal dumping potentially linked to this issue, the IDP Team explored various policy options, aiming to make waste service at MFD units more equitable and convenient manner.

After evaluating these options, the IDP Team chose to pursue a pilot program targeting illegal dumping reduction through a "free on-call bulky item pickup program" to address transportation barriers for MFD residents in San Rafael. With support from consultants, CCNB, and a \$24,000 grant from the Mattress Recycling Council (MRC), seven (7) properties participated, offering two (2) pickups per month over six months. In 2022, the pilot collected 95 cubic yards of bulky items from MFD tenants. Although a small sample size, there were important findings such as that reliance on property managers for event promotion and limited tenant storage space affected participation. It was also discovered that when multiple interventions, including active involvement of apartment managers, effective tenant communication, and the possibility of enforcement, were implemented, collection efforts proved much more effective.

MFD Overage Analysis:

The IDP Team conducted original research and analysis to evaluate MFD service levels in San Rafael. The objectives were to assess overall service adequacy citywide and explore potential links between MFD service levels and illegal dumping incidents. This evaluation involved collaboration with consultants and

² When adjusted for 2023 to reflect previous underbilling by CCNB 2023 cost to date is \$63 per cubic yard.

MSS to analyze MFD units by service level and container overages, using Geographic Information System (GIS) tools. The analysis revealed:

- A correlation between container overages and illegal dumping, both monthly and over time.
- A significant connection between properties not meeting the current 32-gallon per unit service level minimum, overage occurrences, and the quantity of overage amounts.
- A moderate correlation between properties not meeting the 32-gallon service level minimum and illegal dumping incidents.

Portfolio of Options:

Drawing upon insights acquired from previous years of the IDP pilots, the IDP Team embarked on a comprehensive evaluation of program activities in 2023 with the aim of shaping a portfolio of future IDP programming options. This evaluation involved an exploration of several potential long-term programs supporting illegal dumping reduction, and was guided by the following elements:

- **Equitable Access:** Ensuring cost-effective disposal accessibility for all residents.
- **Enforcement:** Exploring new ordinances and enforcement strategies, including Crime Prevention Through Environmental Design interventions.
- **Outreach & Engagement:** Focusing on proactive community partnerships and ongoing outreach efforts.
- **Coordination & Implementation:** Maintaining cross-departmental collaboration and data sharing.
- **Financing:** Identifying funding mechanisms for essential programs and enforcement.

This portfolio of options has been iterated internally, and the IDP Team is currently conducting a baseline analysis, with the support of R3, of the established portfolio of options. These initiatives include a specific emphasis on assessing Equitable Access to Disposal options, Outreach & Engagement (informed by GIS data), and Enforcement. By the end of 2023, R3 and Gigantic Idea Studio will have a comprehensive “high level” understanding of the ideal suite of programs and the strategies to implement them effectively. Currently, our team is completing further analysis and considering the following initiatives:

1. Expanding Bulky Item Drop-off to two locations monthly.
2. Developing a program for apartment owners to transport items to the dump, offering one downloadable multifamily (MF) voucher per unit per year, free or with a nominal fee.
3. Implementing onsite pickup service, allowing one annual pickup per four units, collecting up to 2 cubic yards of material by MSS, with optional fees.
4. Placing rotating public cameras for targeted Hot Spot campaigns, addressing known problem areas and illicit dumping.
5. Conducting an initial cost analysis for a Waste Management Coordinator, considering full-time and half-time options, to address illegal dumping challenges and additional compliance activities.

2024 Pilot Program and Funding

The City has an opportunity to sustain the successful bulky waste drop-off events, maintaining the level of value and consistency seen in over the past two years. Simultaneously, it can support in-depth analysis and recommendations pertaining to the identified "portfolio of options" designed to solidify elements of

The IDP for the long term. This can be achieved by utilizing any unspent 2023 funds,³ and allocating funding from the 2024 budget.

R3 has separately calculated the 2024 solid waste rate adjustment for San Rafael based on the Franchise Agreement between the City and Marin Sanitary Service (MSS), and recommends that the City continue to fund implementation of the IDP. Collecting \$123,400 in additional funding for the Pilot Program in 2024 will constitute approximately .4% of the overall 2024 rate adjustment, the same percentage adjustment when compared with 2023.

Overview of Proposed 2024 Illegal Dumping Reduction Pilot Program

Building on 2023 analysis and insight into the overall success of the IDP trajectory, the project team would implement the following:

- **Continue Monthly Bulky Waste Drop-off Events:** To sustain the reduction of illegal dumping from multifamily residential properties, we propose maintaining "bulky waste drop-off events" as a consistent monthly occurrence at Pickleweed Park for the third consecutive year. R3 recommends extending this program in a similar capacity to gather essential data for assessing the need for further expansion. The focus will remain on the current pilot area to gauge its impact on localized dumping, providing a clear measure of its effectiveness. In partnership with the CCNB, the City intends to facilitate twelve events, ensuring continued access to service for multifamily tenants.
- **Development of the Portfolio of Options Towards a Codified Suite of Services:** Building on 2023 efforts, and supported by R3, the IDP will further flesh out the key program concepts described above from the established portfolio of options. Our primary focus will be identifying the most effective mix of services while gaining a nuanced understanding of practical implementation. This will also entail honing our focus on causative factors and prioritizing targeted interventions. The IDP Team, with support from R3 and Gigantic Idea Studio will also determine optimal ranges for each option based on projected uptake and conduct a focused analysis to identify high-impact areas. Building on the 2023 data, our strategy aims to construct a tailored suite of services in 2024, designed to address specific challenges of illegal dumping in a long-term capacity. The IDP intends to balance incentives and enforcement to drive positive change in our community.

Partnership with Marin Sanitary Service

MSS has been briefed on the details of the proposal to increase rates to fund implementation of the Pilot Program and has expressed its willingness to be the City's operational partner, and MSS supports the rate funding of Pilot Program costs. R3 and Gigantic Idea Studio will also assist in development and evaluation of the portfolio of options and participate in meetings with the City and the City's consultants to provide input on pilot design and cost analysis.

Reporting and Next Steps for 2024

After completion, the project team will confer regarding Pilot Program results, anticipated in the Fall of 2024. The City will then present the results to Council and make recommendations about next steps to continue progress in 2025 to reduce illegal dumping, including recommendations towards a codified suite of services as described above.

³ Final costs are still pending. Any unspent funds would likely be attributable underbudgeting by CCNB.

Pilot Program Rate Impact and Draft Budget

The City has an opportunity to set the 2024 solid waste rates to secure funding for the Pilot Program as part of the 2023 rate hearing.

City May Direct Change in Scope

Per Section IV. of Exhibit B of the Franchise Agreement with MSS, the City may direct a “change in scope” to the services provided by MSS, and the City may secure funding for the Pilot Program by directing such a change in scope. The City may seek to fund \$123,400 for the Pilot Program by including a 2024 rate adjustment at 0.4% above the base rate adjustment that has been separately reported to the City. Funding of the Pilot Program is entirely at the City’s discretion and may be funded at a greater or lesser amount, or at a later time, if desired.

Draft Pilot Program Budget

A draft budget for the Pilot Program, at an anticipated total expense of \$123,400 is provided in Table 1. Funding for the proposed Pilot Program budget is based on \$123,400 in proposed new funds from 2024 rate adjustment (as described above).

Table 1: Proposed 2024 Illegal Dumping Reduction Pilot Program Budget

	2024 Budget
Implementation and Ongoing Coordination	
Operations & Financial Analysis and Coordination with City Program (R3)	\$ 5,000
Subtotal	\$ 5,000
Monthly Debris Box Days (12 Total Events)	
Conservation Corps (Monthly Events at Pickleweed Park)	\$ 26,400
Design, Outreach, and Collateral (GIS)	\$ 18,000
Debris Box rental and Bulky Waste Disposal	\$ 45,000
Subtotal	\$ 89,400
Environmental Design Mini Grants	
Mini-grants (5) Funding	\$ 5,000
Subtotal	\$ 5,000
Pilot Conclusion and Next Steps	
Support for Portfolio of Options (GIS)	\$ 12,000
Portfolio of Options Development (R3)	\$ 12,000
Subtotal	\$ 24,000
Grand Total	\$ 123,400

December 6, 2023

Ms. Cristine Alilovich
City Manager
City of San Rafael

submitted via email: Cristine.Alilovich@cityofsanrafael.org

SUBJECT: Solid Waste Franchise Fee Study Report

Dear Ms. Alilovich,

R3 Consulting Group, Inc. (R3) is pleased to submit the attached Report of Solid Waste Franchise Fee Study (Study) to the City of San Rafael (City). This Report presents our analytical methodology, results and findings, and recommendations regarding the solid waste Franchise Fee and Vehicle Impact Fee paid by the City's contracted solid waste collection service provider, Marin Sanitary Service (Contractor), per the Refuse and Recyclable Material Collection and Disposal Services Agreement (Agreement) between the City and the Contractor. The purpose of this Study was to comprehensively analyze and calculate the following:

- » **City's Costs:** The annual costs to the City for performing its management, administration, regulatory compliance and enforcement, solid waste collection and clean-up, and other obligations associated with the Contractor's Agreement and the sanitation system.
- » **Property Use Charges:** The annual use charge to the Contractor for its special and lasting access to use government property in the public right-of-way for placement of solid waste containers and collection of the solid waste contents.
- » **Pavement Impacts:** The annualized costs for pavement repair, maintenance and rehabilitation resulting from the unique impacts to City street pavement caused by the Contractor's solid waste collection vehicles during the course of providing sanitation service.

We then compared the calculated values for each component to the annual Franchise Fee and Vehicle Impact Fee paid by the Contractor to the City per the Agreement. We found that the City's current and projected Franchise Fee revenues are less than the sum of the City's Costs and government Property Use Charges calculated in this Study. We also found that the City's current Vehicle Impact Fee is less than the costs for Pavement Impacts calculated in this Study. Based on these results, we conclude that the City's fee amounts are not more than necessary to cover the City's reasonable costs in managing and administering the Agreement and the sanitation system plus the reasonable value of the Contractor's use of the public right-of-way.

We appreciate the opportunity to be of service to the City. If you have any questions regarding this Report or need additional information, please contact me.

Sincerely,



Garth Schultz | *Principal*

R3 Consulting Group, Inc.

510.292.0853 | gschultz@r3cgi.com

TABLE OF CONTENTS

1. **Executive Summary**
page 1



2. **Methodology and Calculations**
page 4



3. **Findings and Conclusions**
page 19



4. **Recommendations**
page 20



1. Executive Summary

Background

The City's Agreement with the Contractor is for the collection, processing, and disposal of solid waste from covered waste generators in the City. The Agreement provides the Contractor with the exclusive right to provide critical aspects of the City's sanitation system including solid waste collection and the other services and programs included in the Agreement. The Agreement specifies that the Contractor will charge solid waste service subscribers, with the Contractor billing and collecting revenues from subscribers and the City authorizing the maximum rates that the Contractor may charge pursuant to the rate adjustment methodology included in the Agreement.

Per the Agreement, the Contractor pays the City a Franchise Fee to cover the costs incurred by the City in managing, administering, enforcing, and supplementing the services provided in the Agreement, as well as the reasonable charge for the use of the public right-of-way for the special and lasting access to use it for set-out and collection of solid waste containers. The Agreement also provides that the Contractor pays the City a Vehicle Impact Fee to cover the proportionate costs of the unique impacts to pavement caused by the Contractor's solid waste collection vehicles during the course of providing sanitation service.

Purpose

The purpose of this Study is to prove that the Franchise Fee and Vehicle Impact Fee paid by the Contractor to the City are exempt from consideration as taxes per Article XIII C, Section 1(e) of the California Constitution ("Proposition 26") and are not higher than necessary to cover the City's reasonable costs plus the reasonable value of the Contractor's use of the public right-of-way. There are three primary exceptions to the Proposition 26 definition of tax that are relevant to this Study:

- » **Exception 1:** "A charge imposed for a specific benefit conferred or privilege granted directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of conferring the benefit or granting the privilege."
- » **Exception 2:** "A charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of providing the service or product."
- » **Exception 4:** "A charge imposed for entrance to or use of local government property, or the purchase, rental, or lease of local government property."

The Franchise Fee is a legal fee with two components. The first component includes the City's reasonable and proportionate costs (**City's Costs**) and is a legal fee per Exception 2. The second component includes the reasonable and proportionate and reasonable charges for the Contractor's use of the public right-of-way (**Property Use Charges**) and is a legal fee per Exception 4. The Vehicle Impact Fee includes the City's reasonable and proportionate costs associated with pavement impacts (**Pavement Impacts**) and is a legal fee per Exception 1.

Methodology and Findings

To complete this Study, R3 reviewed and analyzed information provided by the City and the Contractor pertaining to the City's Costs, Property Use Charges, and impacts on pavement. Using that information, we then calculated the reasonable and proportionate amounts necessary to cover the City's costs, including staffing and other costs, use of government property in the

public right-of-way, and pavement repair, maintenance, and rehabilitation costs caused by the Contractor's solid waste collection vehicles during the course of providing sanitation service. All calculated amounts in this Study are in current Fiscal Year (FY) 2023-24 dollars and are rounded to the nearest \$1,000.

City's Costs

The annual costs to the City for management, administration, regulatory compliance and enforcement, solid waste collection and clean-up, and other obligations associated with the Contractor's Agreement and the sanitation system includes: staffing salary and benefits, contracted services, capital and equipment depreciation, operations and maintenance, supplies, and overhead for distributed costs including but not limited to property, utilities, insurance, human resources, payroll administration, accounts payable and receivable, and other finance functions. Staffing costs are calculated based on estimated time allocations (based on historical experience) and other costs are calculated based on estimated share allocations associated with the sanitation system, with distributed overhead applied to both.

» The calculation results are \$1,513,000 in staffing costs and \$391,000 in other costs for annual proportionate City's Costs totaling **\$1,904,000**.

Property Use Charges

The annual charge to the Contractor for use of government property in the public right-of-way is calculated as a function of estimates for the number of solid waste accounts setting out solid waste collection containers in the right-of-way, the set-out area used, the amount of time it is used, and the reasonable market value for the per square foot use of the public right-of-way.

» The calculation result for the use of the public right-of-way is a proportionate annual total Property Use Charge of **\$1,173,000**.

Pavement Impacts

The annualized costs for pavement repair, maintenance and rehabilitation is calculated based on the proportionate impact to pavement from solid waste collection vehicles compared to other sources of impacts. This calculation accounts for the City's annual repair costs, five-year projections for capital improvement costs, and five-year projections for growth in deferred maintenance. The calculation also accounts for the high loading and slow speed impacts on pavement associated with solid waste collection vehicles.

» The calculation result for the proportionate Pavement Impacts caused by Contractor's solid waste collection vehicles during the course of providing sanitation service is an annualized total repair, maintenance, and rehabilitation cost of **\$1,838,000**.

Conclusions

Franchise Fee

The FY 2022-23 Franchise Fee paid Contractor to the City was \$2,757,168 and the projection for FY 2023-24 is \$2,929,000. The sum of FY 2023-24 annual City's Costs and amounts for Property Use Charges calculated in this Study is **\$3,077,000** which is \$148,000 (5%) higher than the projected FY 2023-24 Franchise Fee payments.

- » The amount of the Franchise Fee is therefore not more than necessary to cover the City's reasonable costs incurred in managing and administering the Agreement and the sanitation system plus the reasonable value of the Contractor's use of the public right-of-way.

Vehicle Impact Fee

The Vehicle Impact Fee paid to the City annually is \$1,480,600. The amount of Pavement Impacts calculated in this Study is **\$1,868,000** which is \$387,400 (26%) higher than the Vehicle Impact Fee.

- » The amount of Vehicle Impact Fee is therefore not more than necessary to cover the City's reasonable costs incurred for repair, maintenance, and rehabilitation of pavement made necessary by the impacts of Contractor's solid waste collection vehicles used in providing sanitation services in the City.

Reasonableness of Estimates and Assumptions

In performing calculations, it was necessary to estimate certain values for which information could not be attained, and for which reasonable ranges exist. Where assumptions were necessary for completing calculations, our objective was to apply assumptions on the lower end of the reasonable range.

Had we used other higher assumptions, the results of this Study would have been higher calculated Franchise Fee and Vehicle Impact Fee amounts. Therefore, we conclude that the calculated fee amounts are not higher than necessary to cover the City's reasonable costs plus the reasonable value of the Contractor's use of the public right-of-way.

Limitations

This Study relies on information provided by the City and the Contractor, which we have reviewed and analyzed for reasonableness and accuracy but did not independently audit or verify.

As stated above, it was necessary to estimate certain values for which information could not be attained, and for which reasonable ranges are known to exist. Though, changes to estimates and other underlying assumptions may materially change the calculations, we have elected to apply estimates on the low end of reasonable ranges, thus minimizing the potential that changes in calculations would result in different findings. We have reviewed all estimates and assumptions with City staff and legal counsel and have mutual concurrence on applicability and reasonableness of all such values in this Study.

Finally, the methodology employed by this Study calculates the reasonable values for the Franchise Fee and Vehicle Impact Fee within the context of current laws, regulations, and court rulings. Changes in the legal framework may require revisions to the methodology and findings contained in this Study.

2. Methodology and Calculations

City's Costs

Methodology

R3 reviewed and analyzed information provided by the City pertaining to the General Fund costs incurred for management, administration, regulatory compliance and enforcement, solid waste collection and clean-up, and other obligations associated with the Contractor's Agreement and the sanitation system. These costs include any may not be limited to:

- » Staffing costs, including salaries and benefits.
- » Contracted services.
- » Capital and equipment depreciation.
- » Capital and equipment operations and maintenance.
- » Supplies and materials.
- » Overhead for distributed costs such as property, utilities, insurance, human resources, payroll administration, accounts payable and receivable, and other finance functions.

Using the total annual salary, benefit and other cost information provided by the City we estimated the proportion of costs associated with management and administration of the agreement and the sanitation system. We then calculated the proportionate totals and categorized them by the functions listed in the sections below.

Variables, Estimates and Assumptions

Staffing Costs

Variables associated with salaries and benefits include the allocation of time that positions are dedicated to management and administration of the Agreement and the sanitation system (including time supervising others with primary responsibility for these duties), the amount by which funding of salaries and benefits is paid by the General Fund, and the applicable amount of General Fund overhead. The estimated time allocation by position category used in this Study (and based on historical experience) is shown in Table 1, below, along with the explanation for the allocation values.

Table 1 – Allocations of Staffing Time by Position

Positions	Time Allocation	Explanation
City Manager, Assistant City Manager, City Attorney, Assistant City Attorney, City Clerk, Deputy City Clerk, Public Works Director, Deputy Public Works Director, Management Analyst, Operations and Maintenance Manager, Sr. Code Enforcement Supervisor, Code Enforcement Supervisor, Police Lieutenant, Police Sergeant (2), Police Officer.	4.9%	Calculated allocation based on the percentage of City's Costs plus Property Use Charges plus Pavement Impacts divided by FY 2023-24 General Fund Budget.
Code Enforcement Official I and II.	10%	Estimated allocation based on solid waste code enforcement obligations.

Positions	Time Allocation	Explanation
Sustainability Program Manager.	25%	Estimated allocation based on job duties for management and administration of the Agreement and the sanitation system.
Public Works Maintenance Crews responsible for Street Sweeping, Catch Basin Waste Removal, and Illegal Dumping Clean-up.	80%	Estimated allocation based on proportion of waste generation in City.

R3 verified with City staff that the salaries and benefits included in this Study are paid by the General Fund – any non-General Fund portions of positions included in Table 1 have been excluded from the calculations. A General Fund overhead rate of 10.6% (provided by the City’s Finance Director) is also applied to the total allocated costs.

Other Costs

Variables associated with the City’s other (i.e., non-salary and benefit) costs include the proportionate allocation of those costs that are for management and administration of the Agreement and the sanitation system, the amount by which these costs are paid by the General Fund, and the applicable amount of General Fund overhead. The estimated time allocation by cost category used in this Study is shown in Table 2, below, along with the explanation for the allocation values.

Table 2 –Allocations of Other Costs by Category

Cost Category	Cost Allocation	Explanation
Public Works Maintenance Crews responsible for Street Sweeping, Catch Basin Waste Removal, and Illegal Dumping Clean-up.	80%	Estimated allocation based on proportion of waste generation in City.
Consulting costs for direct management and administration of Agreement and sanitation system.	100%	All these costs are directly associated with management and administration of the Agreement and the sanitation system.

R3 verified with City staff that the other costs included in this Study are paid by the General Fund – any non-General Fund portions of these costs as included in Table 2 have been excluded from the calculations. A General Fund overhead rate of 10.6% (provided by the City’s Finance Director) is also applied to the total allocated costs.

Analysis

Direct Management and Administration

This category includes City staffing and consulting costs for direct management and administration of the Agreement and the sanitation system. Staffing costs include allocated costs for the City’s Public Works Director, Deputy Public Works Director, Sustainability Program Manager, Management Analyst, and Operations and Maintenance Manager, for a calculated \$116,000 in annual staffing costs. Other costs include solid waste consulting services provided

by R3, for \$7,000 in annualized consulting costs. The total calculated cost for this category is **\$123,000**.

Indirect Management and Administration

This category includes City staffing costs for indirect management and administration, including supervision of those responsible for direct management and administration of the Agreement and the sanitation system and associated responsibilities. Allocated costs for the City Manager, Assistant City Manager, City Attorney, Assistant City Attorney, City Clerk, and Deputy City Clerk are calculated for total annual costs in this category of **\$111,000**.

CalRecycle and SB 1383 Compliance

This category would include City staff costs and other costs for various activities associated with the City's need to implement Senate Bill 1383 (Short-Lived Climate Pollutants Act) as well as annual reporting to the State agency, CalRecycle. No costs for these activities are included in this Study as these costs are not funded by the City's General Fund.

Code Enforcement

This category includes City staffing costs for enforcing the solid waste provisions of the City's Municipal Code, which includes illegal solid waste accumulations, illegal dumping, littering, improper waste collection setouts, nuisances, and the associated investigations, warnings, notices of violation, and administration of penalties. Staffing costs include allocated costs for the City's Code Enforcement Supervisors and Officials and Police Officer, Sergeants, and Lieutenant for calculated total annual costs in this category of **\$107,000**.

Street Sweeping

When the Contractor or individual waste generators do not properly manage the collection of solid waste, that mismanaged solid waste tends to end up in the public right-of-way and on streets, where it must be removed by the City. Street sweeping captures solid waste that ends up in public streets because of improper collection. Most if not all of the solid waste that ends up in the streets is generated by properties that receive solid waste collection services from the Contractor.

For the purposes of this Study, we do not assume that all mismanaged solid waste that ends up on the City's streets is generated by properties receiving solid waste services. Rather, because there is the possibility that some solid waste collected by street sweeping operations was originally generated by other sources, this Study estimates that only 80% of the solid waste collected by street sweepers was generated by properties receiving solid waste services. This assumption is consistent with other studies conducted by R3 (for the cities of Garden Grove and San Bruno) wherein street sweeping activities were allocated between 77.4% and 90% to the sanitation system.

This category includes City staffing, capital equipment, and operations and maintenance costs for the City's street sweeping operations. Allocated staffing costs for the Public Works maintenance crews are calculated to be \$229,000 annually. The allocated and annualized costs for capital equipment and operations and maintenance costs are calculated to be \$57,000 annually, for a calculated total in this category of **\$286,000**.

Catch Basin Waste Removal

As with street sweeping, solid waste that is not properly managed by waste generators or the Contractor, and not otherwise captured by street sweeping operations, accumulates in catch basins and other trash capture devices in the City's storm drain system. As with the street sweeping category, we do not assume that all mismanaged solid waste that ends up in catch basins or trash capture devices is generated by properties that receive solid waste services; the 80% estimate used for street sweeping costs is also applied here, and for the same reasons.

This category includes City staffing, capital equipment, and operations and maintenance costs for the City's catch basin waste removal operations. Allocated staffing costs for the Public Works maintenance crews are calculated to be \$844,000 annually. The allocated and annualized costs for capital equipment and operations and maintenance costs are calculated to be \$136,000 annually, for a calculated total in this category of **\$980,000**.

Illegal Dumping Clean-up

The City's Public Works maintenance crews also clean up solid waste materials that are illegally dumped throughout the City. As with street sweeping and catch basin waste removal, an 80% waste generation allocation is applied.

This category includes City staffing costs for illegal dumping clean-up as well as costs for outside contractors and service providers for clean-up of un-housed encampments. Allocated staffing costs for the Public Works maintenance crews are calculated to be \$106,000 annually. The allocated costs for clean-up of un-housed encampments along with the allocated costs for equipment maintenance and fuel are calculated to be \$191,000 annually, and the for a calculated total in this category of **\$297,000**.

Public Waste Containers

This category would include City staff costs and other costs for collection of waste deposited in public waste containers in the public right-of-way and other public locations in the City. No costs for these activities were identified by the City and thus none of the costs associated with category are included in this Study.

Waste Collection at City Events

This category would include City staff costs and other costs for collection of waste generated and disposed of at City public events. No costs for these activities were identified by the City and thus none of the costs associated with category are included in this Study.

Tree Trimming for Vehicle Access to Public Right-of-Way

This category would include City staff costs and other costs for trimming of the City's street trees to provide safe clearance for collection vehicles to collect solid waste from the public right-of-way. No costs for these activities were identified by the City and thus none of the costs associated with category are included in this Study.

Annual Total of City's Costs

Table 3, following page, shows the total of the City's Costs for management and administration of the Agreement and the sanitation system as calculated in this Study, by category.

Table 3 – Annual City’s Costs by Category and in Total

Category	Staffing Costs	Other Costs	Total
Direct Management and Administration	\$116,000	\$7,000	\$123,000
Indirect Management and Administration	\$111,000	N/A	\$111,000
Code Enforcement	\$107,000	N/A	\$107,000
Street Sweeping	\$229,000	\$57,000	\$286,000
Catch Basin Waste Removal	\$844,000	\$136,000	\$980,000
Illegal Dumping Clean-up	\$106,000	\$191,000	\$297,000
Total Annual City’s Costs	\$1,513,000	\$391,000	\$1,904,000

Property Use Charges

Methodology

R3 reviewed and analyzed information provided by the City and the Contractor pertaining to Property Use Charges for Contractor’s use of the public right-of-way for collection of solid waste collection containers. When then calculated the annual Property Use Charges based on:

- » The setout area used for collection of solid waste containers (in square feet).
- » The amount of time that the area is used.
- » The reasonable market value for use of the public right-of-way (in dollars per square foot).
- » The number of solid waste subscribers setting out collection containers in the public right-of-way.

Using these values, we calculated the reasonable market value for the Contractor’s use of government property in the City.

Variables, Estimates and Assumptions

Setout Area

Standard residential solid waste collection setouts include three solid waste collection containers, usually carts with wheels and lids, with one each for garbage, recycling, and organics waste streams. The setout area needed for placement of these containers is inclusive

of the width of each container (typically two feet) as well as minimum required space between the containers and other objects such as cars (minimum of one foot). The set-out area also takes up available parking space and is thus assumed to extend six feet out from the curb. It should be noted that the Contractor's service guide shows two feet between containers and five feet between containers and other objects, which requires a much larger area than the amounts estimated in this Study. Thus, our estimated average setout area is likely low, and is therefore conservative. Taken altogether, the area for residential setouts is calculated as three containers that are each two feet wide, plus one foot between each container and other objects, for a total area ten feet wide times six feet in depth. The result is 60 square feet of setout area used for collection of solid waste containers in residential areas.

The amount of area used for commercial setouts (in this Study, use of the term commercial also always includes multi-family) can vary widely, as there is no standard commercial subscription size profile – each commercial solid waste subscriber can select from a range of container sizes, with most of them being larger than the containers used in residential areas. Given this complexity, this Study assumes that the average commercial setout area is twice that of the residential setout area, for 120 square feet. This estimate is likely lower than the average setout area needed in commercial areas and is therefore conservative.

Setout Time Usage

Standard residential solid waste collection is performed once weekly. Most residential containers are set out the evening prior to collection and are removed from the public right-of-way the following afternoon. Thus, for the purposes of this Study, we assume that collection containers are in the public right-of-way for an average of 18 hours per day, one day per week, which amounts to approximately 10.71% of the time (18 hours divided by 24 per day divided by 7 days per week).

Commercial solid waste subscription setout times can vary widely – just as there is no standard commercial subscription size profile, likewise there is no standard collection frequency. Commercial solid waste subscribers can select collection frequency between once and six times per week, and with different frequencies for different waste streams. Given this complexity, this Study assumes that the average commercial collection frequently is twice weekly, for 12.42% of the time. As with the setout area, this estimate is likely lower than the average commercial collection frequency and is therefore conservative.

Reasonable Market Value for Use of Public Right-of-Way

The City's "Streatory" Program established a use charge for the use of the public-right-of way of \$3,600 annually. That amount is for the use of an area equivalent to one parking space, which the typical parking space being 24 feet wide by 8 feet deep for an area of 192 square feet. Therefore, the City's established annual use charge for the use of the public right-of-way is \$3,600 divided by 192, for a resultant \$18.75 per square foot.

Other cities in the Bay Area have also established use charges for use of the public right-of-way, like the City's program. Other Marin County communities including Fairfax, Larkspur, and San Anselmo also have similar use charges, as do other communities including Healdsburg, Oakland, Torrance, and Windsor. The minimum annual use charge per square foot in these communities is \$5.21 (Fairfax and Oakland) and the largest is \$30.00 (Windsor). The average annual per square foot use charge, including the City, is \$15.67. To be conservative in our calculations, we use the average annual value of \$15.67 per square foot rather than the higher City-specific value of \$18.75.

Number of Subscriptions Setting Out Containers

The Contractor reports that there are 12,385 residential and 2,529 commercial solid waste service subscribers in the City. However, not all subscribers set out their containers in the public right-of-way for collection all the time. To account for non-setouts (either because subscribers don't have waste materials to set out or because they receive on-premises service) we assume that only 90% of residential solid waste subscribers set out containers on a regular basis, for a resulting total of 11,146 average residential setouts. It is also understood that most commercial subscribers do not set out containers in the public right-of-way, and therefore we conservatively assume that only 5% of commercial subscribers set out containers on a regular basis, for a resulting total of 126 average commercial setouts.

Analysis and Total Annual Property Use Charges

Calculating the total annual Property Use Charges using the variables, estimates and assumptions from the prior section is a function of multiplication, as shown in Table 4, below.

Table 4 – Calculation of Total Annual Property Use Charges

Variable Category	Residential	Commercial	Grand Total Annual Property Use Charge
Setout Area	60 SF	120 SF	
Setout Time Usage	10.71%	21.42%	
Annual Use Charge	\$15.67 per SF	\$15.67 per SF	
Number of Setouts	11,146	126	
Total Annual Property Use Charges	\$1,122,000	\$51,000	\$1,173,000

Pavement Impacts

Methodology

R3 reviewed and analyzed information provided by the City pertaining to Pavement Impacts from the Contractors solid waste collection vehicles. We then calculated estimates of the proportionate share of the average annual pavement repair, maintenance and rehabilitation costs associated with solid waste collection vehicles based on the proportionate impact to pavement from solid waste collection vehicle compared to other sources of impacts.

The calculation accounts for the City's annual repair costs, five-year projections for capital improvement costs, and five-year projections for annualized growth in deferred maintenance. The calculation also accounts for the high loading and slow speed impacts on pavement associated with solid waste collection vehicles. The calculation proportionately allocates the average annual pavement management costs to solid waste vehicles based on:

- » The equivalent single-axle load and proportionate impacts from speed for those vehicles compared to other vehicles.
- » The number of vehicle trips on City streets.

» The proportion of vehicle trips that are made by trucks versus automobiles.¹

Variables, Estimates and Assumptions

The weight, loading, slow speed, and frequent stops that characterize solid waste collection vehicle operations impose unique and quantifiable impacts on the City's street pavement. It is important to understand that, while calculation of vehicle impacts to pavement can be precise for individual vehicles, out of necessity we made certain assumptions about overall blended pavement impacts associated with several categories of vehicle types for the purposes of this Study. This is because we sought to calculate estimated impacts to all street pavement in the City, covering all vehicle uses, and precise traffic information at that scale is not currently available. Thus, we make informed assumptions regarding several variables necessary for this Study.

For each of these variables, there is a range of potentially reasonable values that may be used. We have selected values at the low end of the reasonable range to present findings that conservatively calculate estimated values of the pavement impacts associated with the Contractor's solid waste collection vehicles during the course of providing sanitation service. Assumptions used are described in the following subsections, which reference sources supporting the summary provided here. We must note that changes in assumptions may result in material changes in calculation results and findings.

Factors Impacting Pavement Conditions

Street pavement repair, maintenance and rehabilitation needs and their resulting costs are affected by several factors including vehicle usage and trench cuts and subsurface activities related to underground utilities. Environmental conditions such as light and water also contribute to pavement repair, maintenance and rehabilitation needs in combination with the primary impacts from vehicles, trench cuts, and subsurface activities. This Study only focuses on the impacts to street pavement from vehicles, and the proportion of those impacts that are attributable to the Contractor's solid waste collection vehicles as they perform sanitation service.

City's Costs for Pavement Repair, Maintenance and Rehabilitation

The City regularly projects its costs for repair, maintenance and rehabilitation of pavement resulting from degradation due to use. These projections, and the basis for them, are documented in Pavement Management Technical Assistance Program (P-TAP) reports which the City commissions with engineering consultants.² Per the City's April 26, 2023, P-TAP report, the City's projected average annual pavement maintenance and rehabilitation costs from 2023 through 2027 for its entire street network, are approximately \$4.2 million. Also, per the P-TAP, deferred

¹ Our analysis accounts for the distribution of vehicles among the 13 Federal Highway Administration vehicle classifications, which include passenger cars, SUVs/pick-ups, buses, and multiple truck and truck/trailer axle combinations.

² The City's current P-TAP report dated April 26, 2023, was prepared by Adhara Systems, Inc., a consulting firm with expertise in pavement engineering. Broadly speaking, a P-TAP is designed to provide objective information and useful data for analysis so that managers can make more consistent, cost-effective, and defensible decisions related to the preservation of a pavement network.

pavement maintenance on the City’s streets³ (which is the result of degrading pavement conditions associated with the impacts of vehicles) is projected to increase by \$15.3 million between 2023 and 2027.⁴

Axle Loading

Our methodology for calculating the proportionate amount of pavement maintenance and rehabilitation impacts for the Contractor’s vehicles is grounded in the fact that all vehicles, including solid waste collection vehicles, degrade pavement during use. Measurement of that impact – also known as “vehicle loading” – can be estimated, quantified, and expressed as an Equivalent Single Axle Load (ESAL), which is a function of the vehicle’s weight and the distribution of that weight over the vehicle’s axles. It is important to note that heavier vehicles have more impacts on pavement and have a higher vehicle loading ESAL value. It is also important to note that ESAL values are associated with vehicle loading only, and not the speed of the vehicle; it is therefore assumed that relative ESAL values between vehicle types are based on vehicles travelling at the same rate of speed.

For this analysis, R3 used the vehicle categories and average ESAL values shown in Table 5, below. Table 5 explains and cites supporting information for how the ESAL for each vehicle type was determined.

Table 5 – ESAL Value Assumptions by Vehicle Type

Vehicle Type	ESAL Value	Source
Automobiles (Passenger Cars)	0.0008	AASHTO (American Association of State Highway and Transportation Officials) Design Guide with ESALs by Vehicle Type (Attachment 1)
Average of All Other Trucks⁵	0.0171	Calculated Value Using AASHTO Design Guide with ESALs by Vehicle Type (Attachment 1), Federal Highway Administration ESALs by Vehicle Type (Attachment 2), Comparative Traffic Counts (Attachment 3)
Solid Waste Vehicle (Garbage)	1.0000	Calculated Values by Type (Attachment 4) Using Example Axle Weights (Attachment 5) and AASHTO Axle Load Equivalency Factors (Attachment 6)
Solid Waste Vehicle (Organics)	1.0000	
Solid Waste Vehicle (Recycling)	0.7500	

Given the assumed ESAL values in Table 5, a solid waste vehicle collecting garbage has 1,250 times the impact of an automobile. We are aware of other research concluding that the impacts

³ Deferred maintenance is planned maintenance that gets delayed and backlogged because of a lack of funding. Deferred maintenance costs remain on the books until they are funded and the work is completed and recategorized in the City’s P-TAP.

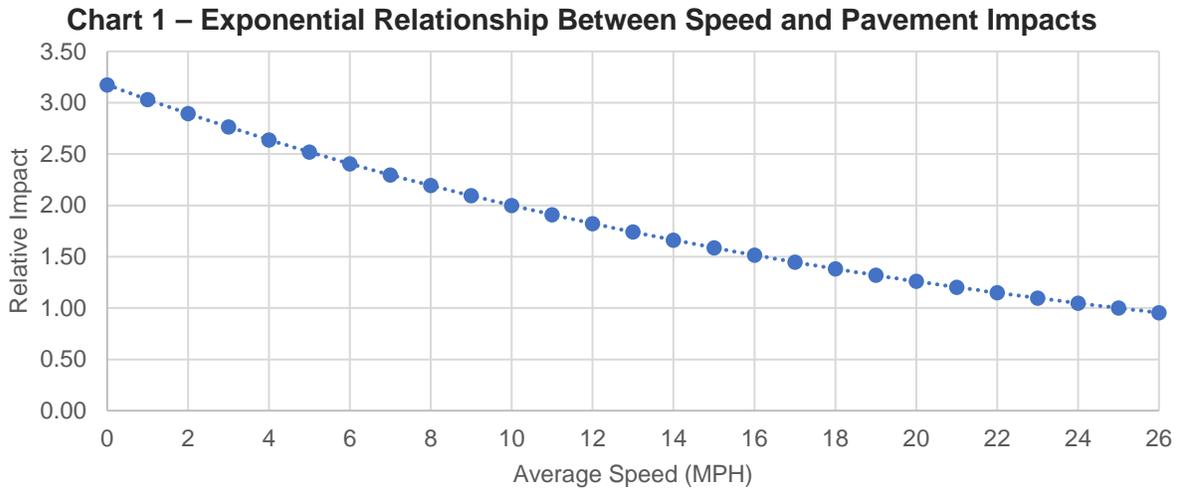
⁴ Our analysis assumes funding based on the City’s budgeted pavement maintenance costs as presented in the P-TAP under Scenario 2 “Maintaining PCI 62”.

⁵ “All other trucks” means all vehicles with high loading and impact on street pavement other than solid waste vehicles.

of solid waste collection vehicles may be as high as 8,000-9,000 times the impact of passenger cars; thus, our assumed ESAL of “1” for garbage collection vehicles is on the low end of the reasonable range of ESALs for such vehicles.

Speed Impact

Impacts to flexible pavements (which are typical for residential streets) are also influenced by vehicle speeds, with impacts being exponentially higher when a load carrying vehicle is moving at a very slow speed.⁶ This is demonstrated in Chart 1, below.



Unlike typical traffic on residential streets, which tends to travel at or near the posted speed limit (25 miles per hour [mph] in the City), solid waste vehicles slow and stop for collection in front of each household, averaging approximately 4 mph to 8 mph.⁷ At these low speeds, and as shown in Chart 1, vehicles have approximately 2.2 to 2.6 times the impact to the pavement than they would travelling only at the 25 mph speed limit.

In this Study we conservatively assume that solid waste vehicles in the City may be travelling at a faster 10 mph average speed, and we thus assume that the relative impact of speed is a factor of 2, not the higher 2.2 to 2.6 factors corresponding with slower speeds as noted above. We apply this speed factor of 2 as a multiplier to the ESAL loading for solid waste collection vehicles in our analysis of impacts to residential streets only; the factor is not applied to the ESAL loading for arterial and collector streets, as those streets are not typically comprised of flexible pavements, solid waste collection vehicles stop less frequently on those streets (and thus have a higher average speed).

Vehicle Passes Per Day

By estimating the number and type of vehicles (i.e., solid waste collection vehicles, automobiles, and all other trucks) that travel on a street, and the average pavement impacts (measured in

⁶ Effect of truck speed on the response of flexible pavement systems to traffic loading; International Journal of Pavement Engineering, July 2020; Michael R. S. Mshali and Wynand JvdM. Steyn.
⁷ Real-world activity, fuel use, and emissions of heavy-duty compressed natural gas refuse trucks; Science of the Total Environment 761, 2021; Gurdas S. Sandhu, H. Christopher Frey, Shannon Bartelt-Hunt, Elizabeth Jones.

ESAL loading) associated with each vehicle type (described in the prior subsection), the total impacts that the pavement will experience can be estimated in a mathematical calculation. Our analysis makes informed assumptions about the number of vehicle passes (meaning trips down streets) by type for the two major types of streets identified by the City in its P-TAP. Those two types of streets are: high traffic volume streets (namely arterial and collector streets) and low traffic volume streets (residential streets). Specific data for the City relating to the number of vehicle passes per day and the proportion of those passes that are comprised of trucks was not available for this Study.

For the low traffic residential streets, we used an estimate of 1,500 vehicle passes per day, which is larger than the 750 passes per day previously estimated by the City in the 2020 Vehicle Impact Fee Study. Using the higher figure of 1,500 passes per day reduces the proportionate impact from the Contractor’s solid waste collection vehicles and is thus more conservative than the calculation using 750 passes per day. We also estimated that 5% of residential traffic trips were made by trucks, and that value is higher than the 2% used in the prior study. While the prior 2% figure was validated by City Engineer, for the purposes of this study we use the higher 5% because it is more conservative than the 2% figure in that it also reduces the proportionate impacts from the Contractor’s solid waste collection vehicles.

For arterial and collector streets, we used an estimate of 15,000 passes per day, which is the same value used in the prior study. For the percentage of those trips that are trucks, we used a calculated value based on comparative traffic counts from the City of Torrance in 2023 (Attachment 3) and which is the same dataset that we used to estimate the average ESAL for “All other trucks” in Table 5. Attachment 3 calculates the average daily traffic counts for all vehicles on commercial streets in that city, with 87.7% of the average daily traffic count being comprised of passenger cars and motorcycles and the remaining 12.3% being comprised of trucks. For the purposes of this Study, we have assumed an even higher percentage of arterial and collector street traffic being trucks, at 15% of the average daily traffic. As with the prior assumptions, this value is conservative in that it returns a low proportionate value for the impacts to streets from the Contractor’s solid waste vehicles. Table 6, below, is a summary of the average daily vehicles passes and the percentage that are trucks assumptions used in this Study.

Table 6 – Vehicle Passes Per Day by Street Type

Street Type	Vehicle Passes Per Day	Percentage of Vehicle Passes That Are Trucks
Residential	1,500	5%
Arterial and Collector	15,000	15%

Vehicle Passes By Vehicle Type

The variables described in the prior subsection provide the overall number of vehicle passes per day, and the percentage of those passes that are trucks. To isolate the vehicle loading impacts to pavement associated with solid waste collection vehicles we need to determine the number of passes that those vehicles make per day. This is a relatively simple calculation based on the weekly schedule of collections for solid waste collection services. For the low traffic residential streets, solid waste collection operations are on a weekly schedule. Since weekly collections are on both sides of the street, each street is driven twice (once in each direction) by a minimum of

one of each type of solid waste collection vehicle. For the purposes of this Study, we assume that each solid waste collection and vehicle makes two passes per week, or 0.286 passes per day on residential streets. This value does not account for the fact that some streets are driven on during non-route days so that collection vehicles can access streets on a given route, meaning that the actual average passes per week in the City must be higher than stated above. Using the lower passes per week is conservative in that it returns a lower result for the street impacts from the Contractor’s solid waste vehicles. For the high traffic arterial and collector streets, which are primarily commercial, the schedule for solid waste collection can vary. Solid waste collection services may be provided up to five or six times a week for larger waste generators and may be as low as weekly for smaller generators. Additionally, because solid waste generators in commercial areas are not all on the same collection schedules as residential accounts are, vehicles in commercial areas pass over the same streets multiple times to serve accounts with different collection schedules.

For the purposes of this Study, for arterial and collector streets, we assume that solid waste collection vehicles collecting garbage for landfill disposal pass over each street two times per day (once in each direction), while solid waste collection vehicles for organics and recycling pass over each street once per day (one half in each direction). Total passes for organics and recycling collection vehicles are less because it is generally the case that service levels for garbage are at least twice those of the corresponding organics or recycling service level. As with the number of passes on residential streets, this value does not account for the fact that some streets are driven on during non-route days so that collection vehicles can access streets on a given route, meaning that the actual average passes per week in the City must be higher than stated above. Using the lower passes per week is conservative in that it returns a lower result for the pavement impacts from the Contractor’s solid waste vehicles.

The number of passes per day for the remaining vehicle types – automobiles and other trucks – are simply calculated as a function of the total number of daily passes, the total number of those that are trucks (based on the percentages discussed in the prior section), and the number of passes for solid waste collection vehicles. For example, for the City’s residential streets, given the assumed 1,500 passes per day and 5% (75) of those being trucks, there are 1,425 automobile passes per day (1,500 x 95%). With three types of solid waste collection vehicles each passing 0.286 times per day (as described above), the total passes per day are 0.857 (3 x 0.286). The number of passes for all other trucks is 74.143 (150 minus 0.857). Table 7, below, provides a summary of vehicle passes per day by street type.

Table 7 – Vehicle Passes Per Day by Vehicle Type and Street Type

Vehicle Type	Residential Streets	Arterial and Collector Streets
Automobiles (Passenger Cars)	1,425.000	12,750.000
Average of All Other Trucks	74.143	2,247.143
Solid Waste Vehicle (Garbage)	0.286	1.429
Solid Waste Vehicle (Organics)	0.286	0.714
Solid Waste Vehicle (Recycling)	0.286	0.714
Total	1,500	15,000

Percentage of Streets by Type

A final variable that needs to be addressed in the percentage of streets by type. This information is included in the City’s P-TAP, including the relative area by street type, as shown in Table 8, below.

Table 8 – Percentage of Streets by Type

Street Type	Area (Square Yards)	Percentage of Area
Residential	1,740,000	58.5%
Arterial	666,700	22.4%
Collector	568,000	19.1%
Total	2,974,700	100%

Analysis

Percentage Impact for Solid Waste and Street Sweeping Vehicles by Street Type

With the variables for ESAL by vehicle type, the multiplication factor for the relative impacts of speed for solid waste collection vehicles on residential streets, and the number of passes by vehicle type established, we then calculate the relative percentage impact associated with each vehicle type. This is calculated as a function of ESAL multiplied by speed factor (residential streets only) multiplied by the number of weekly passes, multiplied by ESAL, with the product being the total vehicle loading pavement impact by vehicle type per week. Totaling the weekly total vehicle loading by vehicle types yields the total estimated loading experienced by each street type (residential vs. arterial and collector). From there, we calculate the percentage contribution to total vehicle loading for solid waste collection vehicles, which is the total weekly ESAL loading associated with solid waste collection vehicles divided by the total ESAL loading for the street. Table 9, below, and Table 10, on the following page, show these calculations and the results.

Table 9 – Calculation of Solid Waste Pavement Impacts – Residential Streets

	A	B	C	D	E	F
Vehicle Type	Average ESAL / Vehicle (Per Table 5)	Relative Impact from Speed	Passes / Day / Vehicle Type (Per Table 7)	Passes / Week / Vehicle Type (C x 7)	Total Weekly ESAL Loading (A x B x D)	Percent of Total ESAL Loading (E / 27.85)
Automobiles	0.0008	1x	1,425.000	9,975	7.98	28.65%
All Other Trucks	0.0171	1x	74.143	519	8.87	31.86%
Garbage Vehicles	1.0000	2x	0.286	2	4.00	14.36%
Organic Material Vehicles	1.0000	2x	0.286	2	4.00	14.36%
Recycling Vehicles	0.7500	2x	0.286	2	3.00	10.77%
Total			1,500	10,500	27.85	100%

As shown in Table 9, for the City’s residential streets we calculated the percentage impacts for solid waste vehicles to be 39.49% of total impacts to residential street pavement (14.36% times 2 plus 10.77%)

Table 10 – Calculation of Solid Waste Vehicle Impacts – Arterial and Collector Streets

	A	B	C	E	F
Vehicle Type	Average ESAL / Vehicle (Per Table 5)	Passes / Day / Vehicle Type (Per Table 7)	Passes / Week / Vehicle Type (B x 7)	Total Weekly ESAL Loading (A x C)	Percent of Total ESAL Loading (E / 359.13)
Automobiles	0.0008	12,750.000	89,250	71.40	19.88%
All Other Trucks	0.0171	2,247.143	15,730	268.98	74.90%
Garbage Vehicles	1.0000	1.429	10	10.00	2.78%
Organic Material Vehicles	1.0000	0.714	5	5.00	1.39%
Recycling Vehicles	0.7500	0.714	5	3.75	1.04%
Total		15,000	105,000	359.13	100%

For the City’s arterial and collector streets, Table 10 calculates the percentage impact from solid waste vehicles to be 5.22% of the total impacts (2.78% plus 1.39% plus 1.04%).

Average Annual Pavement Expenses

Per the P-TAP report, the City is projected to spend \$4.2 million per year on pavement repair, maintenance, and rehabilitation. Additionally, the City spends approximately \$187,000 annually for spot repair work not included in the P-TAP. Therefore, the total annual estimated City costs for pavement repair are \$4,387,000.

Average Annualized Deferred Maintenance

In addition to contributing to annual pavement maintenance and rehabilitation costs, solid waste vehicles also contribute to deferred maintenance. The P-TAP report projects that deferred maintenance will increase by \$15.3 million from 2023 to 2027, which is \$3,830,500 annually.

Reduction for Pavement Subsurface Impacts

Expenditures for pavement maintenance repair impacts to pavement caused by vehicles, trench cutting and subsurface activities, as well as the environmental impacts associated with those same sources of primary impacts. We roughly estimate the impacts of trench cutting and subsurface activities on the City’s streets to be 10% of all pavement repair, maintenance, and rehabilitation costs. This leaves 90% of the average annual pavement management costs and average annualized deferred maintenance needs associated with vehicle impacts. This is demonstrated in Table 11, on the following page.

Table 11 – Average Annual Pavement Impacts from Vehicles

Category	Amount of Impacts from All Sources	Reduction for Subsurface Activities	Amount of Pavement Impacts from Vehicles
Average Annual Pavement Expenses	\$4,387,000	-10%	\$3,948,000
Average Annualized Deferred Maintenance	\$3,830,000	-10%	\$3,447,000
Total	\$8,217,000	-10%	\$7,395,000

Table 12 shows the breakdown of the average annual pavement impacts from all vehicles by street type, using the total from Table 11 above.

Table 12 –Total Pavement Impacts from Vehicles by Street Type

Variable	Residential	Arterial and Collector	Total
Percentage of Streets by Type (From Table 8)	58.5%	41.5%	100%
Annual Pavement Impacts from Vehicles	\$4,326,000	\$3,069,000	\$7,395,000

Total Annual Pavement Impacts

Calculating the total annual Pavement Impacts using the variables, estimates and assumptions from the prior section is a function of multiplication, as shown in Table 13, below.

Table 13 – Calculation of Total Pavement Impacts from Contractor’s Vehicles

Variables	Residential	Arterial and Collector	Grand Total
Annual Pavement Impacts from Vehicles (From Table 12)	\$4,326,000	\$3,069,000	
Percentage Impacts from Contractor’s Vehicles (From Tables 9 and 10)	39.49%	5.22%	
Total	\$1,708,000	\$160,000	\$1,868,000

3. Findings and Conclusions

Franchise Fee

- » The FY 2022-23 Franchise Fee paid to the City was \$2,757,168 and the projection for FY 2023-24 is \$2,929,000.
- » R3 calculated reasonable estimates of the City's Costs and Property Use Charges based on actual and estimated cost information provided by the City, and with reasonable and conservative assumptions for estimated values.
- » The sum of FY 2023-24 annual City's Costs (\$1,904,000) and Property Use Charges (\$1,173,000) amounts calculated in this Study is \$3,077,000.
- » The calculated amounts bear a reasonable relationship to the Contractor's burdens on the City resulting from the management and administration of the Agreement and the sanitation system, and the reasonable value of the Contractor's use of the public right-of-way. The City's Costs have been reviewed and confirmed by City staff as being representative of the actual time and costs incurred for these activities. Amounts of Property Use Charges are proportionately allocated to the Contractor with due recognition of the realities of the Contractor's operations.
- » The amounts calculated in this Study are \$148,000 (5%) higher than the projected FY 2023-24 Franchise Fee payments. It is highly unlikely, given the justification provided herein, that FY 2023-24 Franchise Fee payments will exceed the amounts calculated in this Study.
- » The projected FY 2023-24 Franchise Fee is less than would be justified by the calculations in this Study.
- » The Franchise Fee therefore is not more than necessary to cover the City's reasonable costs incurred in managing and administering the Agreement and the sanitation system plus the reasonable value of the Contractor's use of the public right-of-way.

Vehicle Impact Fee

- » The Vehicle Impact Fee paid to the City annually is \$1,480,600.
- » R3 calculated reasonable estimates of the Pavement Impacts from Contractor's solid waste collection vehicles based on quantifiable impacts from such vehicles.
- » The amount of Pavement Impacts calculated in this Study is \$1,868,000.
- » The amount calculated Pavement Impacts bear a reasonable relationship to the Contractor's burdens on the City resulting from the pavement impacts caused by Contractor's solid waste collection vehicles. Calculations of Pavement Impacts have been proportionately allocated to the Contractor with due recognition of the impacts from loading, speed, number of trips, and other causes of pavement repair, maintenance, and rehabilitation needs.
- » The amounts calculated in this Study are \$387,400 (26%) higher than the Vehicle Impact Fee.
- » The Vehicle Impact Fee is less than would be justified by the calculations in this Study.
- » The Vehicle Impact Fee there is not more than necessary to cover the City's reasonable costs incurred for repair, maintenance, and rehabilitation of pavement.

4. Recommendations

Annual Adjustments

All values calculated in this Study are in current FY 2023-24 dollars. Given that the City's Costs, Property Use Charges, and Pavement Impacts will all tend to change over time in response to changing staffing, benefits, and other costs, it would be appropriate for the City to implement an annual adjustment to the Franchise Fee and Vehicle Impact Fee.

- » We recommend that the City consider including an automatic annual adjustment that would change the fees in proportion to the percentage change in the Consumer Price Index (CPI). We recommend the CPI for All Urban Consumers (CPI-U) for the San Francisco Bay Area (U.S. Bureau of Labor Statistics series ID: CUURS49BSA0).

Sources and Uses Accounting

Currently, the City's Costs and Property Use Charges are not tied to Franchise Fee revenues in the City's accounting system. The City could implement project code accounting and/or enterprise fund accounting for the Franchise Fee to better track source revenues and their uses. In either case, allocated and/or direct staffing and other costs could be tied to source revenues, while the Property Use Charges could be transferred out for general use.

- » We recommend that the City consider implementing sources and uses accounting practices for Franchise Fee revenues, City's Costs, and Property Use Charges.⁸

Periodic Recalculation

Over time, the City's Costs associated with the Agreement and the sanitation system, the value of Property Use Charges for use of the public right-of-way, and the annualized costs associated with Pavement Impacts from the Contractor's solid waste collection vehicles may change in ways that vary from the annual change in the CPI. Additionally, changes in City policies, programs, procedures, organization, geopolitical boundaries, laws, regulations, court rulings, and/or other factors may also trigger a need for recalculating fees.

- » We recommend that the City consider updating this Study periodically (e.g., every five years) or more frequently if needed to recalculate fees in response to other factors.

⁸ The Vehicle Impact Fee is recorded as revenue in the Gas Tax fund, from which pavement repair, maintenance and rehabilitation costs are paid.

Appendix D

D-25

Table D.21. Worksheet for Calculating 18-kip Equivalent Single Axle Load (ESAL) Applications

Location <u>Example 1</u>		Analysis Period = <u>20</u> Years			
		Assumed SN or D = <u>9"</u>			
Vehicle Types	Current Traffic (A)	Growth Factors (B)	Design Traffic (C)	E.S.A.L. Factor (D)	Design E.S.A.L. (E)
Passenger Cars	5,925	2% 24.30	52,551,787	.0008	42,041
Buses	35	24.30	310,433	.6806	211,280
Panel and Pickup Trucks	1,135	24.30	10,066,882	.0122	122,816
Other 2-Axle/4-Tire Trucks	3	24.30	26,609	.0052	138
2-Axle/6-Tire Trucks	372	24.30	3,299,454	.1890	623,597
3 or More Axle Trucks	34	24.30	301,563	.1303	39,294
All Single Unit Trucks					
3 Axle Tractor Semi-Trailers	19	24.30	168,521	.8646	145,703
4 Axle Tractor Semi-Trailers	49	24.30	434,606	.6560	285,101
5+ Axle Tractor Semi-Trailers	1,880	24.30	16,674,660	2.3719	39,550,626
All Tractor Semi-Trailers					
5 Axle Double Trailers	103	24.30	913,559	2.3187	2,118,268
6+ Axle Double Trailers	0	24.30			
All Double Trailer Combos					
3 Axle Truck-Trailers	208	24.30	1,844,856	.0152	28,042
4 Axle Truck-Trailers	305	24.30	2,705,198	.0152	41,119
5+ Axle Truck-Trailers	125	24.30	1,108,688	.5317	589,489
All Truck-Trailer Combos					
All Vehicles	10,193		90,406,816	Design E.S.A.L.	43,772,314

FHWA Truck Classes

FEDERAL HIGHWAY ADMINISTRATION

Class	Type	EALF
1	Motorcycles	negligible
2	Passenger Cars	negligible
3	Other Two-Axle, Four-Tire Single Unit Vehicles	negligible
4	Buses	0.57
5	Two-Axle, Six-Tire, Single Unit Trucks	0.26
6	Three-Axle Single Unit Trucks	0.42
7	Four or More Axle Single Unit Trucks	0.42
8	Four or Less Axle Single Trailer Trucks	0.30
9	Five-Axle Single Trailer Trucks	1.20
10	Six or More Axle Single Trailer Trucks	0.93
11	Five or Less Axle Multi-Trailer Trucks	0.82
12	Six-Axle Multi-Trailer Trucks	1.06
13	Seven or More Axle Multi-Trailer Trucks	1.39

FHWA's 13 Vehicle Category Classification

<p>Class 1 Motorcycles</p>		<p>Class 7 Four or more axle, single unit</p>		
<p>Class 2 Passenger cars</p>		<p>Class 8 Four or less axle, single trailer</p>		
				
				
				
<p>Class 3 Four tire, single unit</p>		<p>Class 9 5-Axle tractor semitrailer</p>		
				
				
<p>Class 4 Buses</p>		<p>Class 10 Six or more axle, single trailer</p>		
				
			<p>Class 11 Five or less axle, multi trailer</p>	
<p>Class 5 Two axle, six tire, single unit</p>		<p>Class 12 Six axle, multi-trailer</p>		
				
			<p>Class 13 Seven or more axle, multi-trailer</p>	
<p>Class 6 Three axle, single unit</p>				
				
				

Source: Federal Highway Administration (TMG 2013).

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U		
1	CALCULATION OF WEIGHTED ESAL FOR "ALL OTHER TRUCKS"																						
2	HPMS Traffic Data Sought - City of Torrance 5/19/2023																						
3																							
4	Section Identification			Current Traffic Data				ADT (or AADT) by Vehicle Classification															
5				ADT	Month & Year of Traffic Count (MM/YYYY)	Peak Hour Volume	D Factor	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	Class 13			
6	Street Name	From Location	To Location																				
9	Torrance Blvd	Victor St	Anza Ave	29796	04/2018	1262	50%	79	26526	2054	152	866	67	5	21	26	0	0	0	0	29796		
10								0%	89%	7%	1%	3%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
13	Torrance Blvd	Madrona Ave	Maple Ave	32572	04/2018	1486	51%	45	28713	2362	159	1166	61	16	26	24	0	0	0	0	32572		
14								0%	88%	7%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
17	Torrance Blvd	Arlington Ave	Cabrillo Ave	29267	05/2018	1203	50%	62	26131	1574	111	625	505	49	53	48	5	32	40	32	29267		
18								0%	89%	5%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%	100%		
28	Crenshaw Blvd	Redondo Beach Bl	Artesia Blvd	32648	04/2018	1318	50%	61	29104	2563	110	726	37	5	14	28	0	0	0	0	32648		
29								0%	89%	8%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
30	Crenshaw Blvd	Artesia Blvd	182nd St	33944	04/2018	1475	54%	62	29796	2588	122	1258	69	7	18	24	0	0	0	0	33944		
31								0%	88%	8%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
32	Crenshaw Blvd	182nd St	190th St	54327	04/2018	2186	52%	55	47269	4235	113	2415	47	5	99	89	0	0	0	0	54327		
33								0%	87%	8%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
34	Crenshaw Blvd	190th St	Del Amo Blvd	49516	04/2018	1931	51%	49	42896	3828	108	2162	128	0	123	222	0	0	0	0	49516		
35								0%	87%	8%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
36	Crenshaw Blvd	Del Amo Blvd	Dominguez St	47718	04/2018	2074	53%	54	41416	3749	125	2165	36	0	62	111	0	0	0	0	47718		
37								0%	87%	8%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
39	Crenshaw Blvd	Torrance Blvd	El Dorado St	45215	04/2018	1835	52%	59	39890	3489	87	1465	27	4	102	92	0	0	0	0	45215		
40								0%	88%	8%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
41	Crenshaw Blvd	Carson St	Sepulveda Blvd	44936	04/2018	1770	51%	61	38281	4119	97	2043	80	8	130	117	0	0	0	0	44936		
42								0%	85%	9%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
43	Crenshaw Blvd	Sepulveda Blvd	235th St	50785	04/2018	2004	51%	46	43831	4455	120	1949	65	1	118	200	0	0	0	0	50785		
44								0%	86%	9%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
46	Crenshaw Blvd	Lomita Blvd	Skypark Dr	41290	04/2018	1846	55%	62	35390	3650	122	1761	51	7	130	117	0	0	0	0	41290		
47								0%	86%	9%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
49	Crenshaw Blvd	Pacific Coast Hwy	South City Limit	33219	04/2018	1546	55%	91	28665	3297	56	1049	40	0	6	15	0	0	0	0	33219		
50								0%	86%	10%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
52	Del Amo Blvd	Victor St	Anza Ave	21330	04/2018	1040	56%	80	18735	1880	47	545	20	8	11	4	0	0	0	0	21330		
53								0%	88%	9%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
57	Del Amo Blvd	Maple Ave	Crenshaw Blvd	28001	04/2018	1336	57%	48	23933	2202	176	1386	73	22	100	51	10	0	0	0	28001		
58								0%	85%	8%	1%	5%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
61	Artesia Blvd	Hawthorne Blvd	Prairie Ave	34571	05/2018	1270	50%	122	30839	1595	233	711	635	158	22	111	25	14	50	56	34571		
62								0%	89%	5%	1%	2%	2%	0%	0%	0%	0%	0%	0%	0%	100%		
63	Artesia Blvd	Ainsworth Ave	Yukon Ave	32714	06/2018	1592	66%	149	27864	2889	79	1836	16	0	9	2	0	0	0	0	32844		
64								0%	85%	9%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
66	Artesia Blvd	Crenshaw Blvd	Van Ness Ave	32897	05/2018	1366	59%	535	28709	1571	110	903	601	192	35	103	22	28	104	74	32987		
67								2%	87%	5%	0%	3%	2%	1%	0%	0%	0%	0%	0%	0%	100%		
69	Redondo Beach Bl	Hawthorne Blvd	Prairie Ave	24076	06/2018	8963	56%	20	21007	1944	111	950	21	7	8	8	0	0	0	0	24076		
70								0%	87%	8%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
71	Redondo Beach Bl	Prairie Ave	Yukon Ave	32187	05/2018	1334	54%	33	29927	1279	120	402	261	22	47	22	2	32	23	17	32187		
72								0%	93%	4%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	100%		
74	Redondo Beach Bl	Crenshaw Blvd	Van Ness Ave	31183	06/2018	1485	59%	48	27555	2483	111	864	36	3	15	68	0	0	0	0	31183		
75								0%	88%	8%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
87	Hawthorne Blvd	Pacific Coast Hwy	South City Limit	35335	06/2018	1634	61%	45	30266	2981	116	1201	120	26	164	311	2	103	0	0	35335		
88								0%	86%	8%	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%	100%		
90	Sepulveda Blvd	Palos Verdes Blvd	Anza Ave	25198	05/2018	1142	58%	67	22574	1546	50	525	329	41	13	18	3	11	12	9	25198		
91								0%	90%	6%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	100%		
94	Sepulveda Blvd	Madrona Ave	Maple Ave	45820	04/2018	2109	58%	79	41604	2602	140	1362	18	3	6	2	4	0	0	0	45820		
95								0%	91%	6%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
98	Sepulveda Blvd	Arlington Ave	Cabrillo Ave	48933	04/2018	2339	64%	47	43059	3813	116	1845	33	2	8	10	0	0	0	0	48933		
99								0%	88%	8%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
111	Palos Verdes Blvd	Sepulveda Blvd	Prospect Ave	15126	06/2018	798	57%	13	12696	1614	9	761	16	3	11	3	0	0	0	0	15126		
112								0%	84%	11%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
114	Palos Verdes Blvd	Catalina Ave	Calle Miramar	27158	04/2018	1304	61%	49	23375	2580	52	1067	15	0	6	14	0	0	0	0	27158		
132																							
133																							
134	ADT (or AADT) by Vehicle Classification																						
135																							
136				TOTALS																			
137				PERCENTAGES OF TOTAL																			
138				2121	840051	72942	2952	34008	3407	594	1357	1840	73	220	229	188						959982	
139				0.2%	87.5%	7.6%	0.3%	3.5%	0.4%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%						100%	
147																					PERCENT OF TRAFFIC FOR "ALL OTHER TRUCKS"		
148																					12.27%		
149																							
150	ESAL SOURCE			AASHTO														Federal Highway Administration				TOTAL WEIGHTED ESAL FOR "ALL OTHER TRUCKS"	
151				Load Factor														0.0008 0.0122 0.5700 0.2600 0.4200 0.4200 0.3000 1.2000 0.9300 0.8200 1.0600 1.3900		0.0003 0.0004 0.0023 0.0001 0.0002 0.0003 0.0003		0.0171	
152				Weighted Load Factor														0.0007 0.0009 0.0018 0.0092 0.0015 0.0003 0.0004 0.0023 0.0001 0.0002 0.0003 0.0003		0.0171			
152				Other Truck Weighted Load Factor														0.0009 0.0018 0.0092 0.0015 0.0003 0.0004 0.0023 0.0001 0.0002 0.0003 0.0003		0.0171			

**RESIDENTIAL ESAL CALCS
SOLID WASTE**

MODEL AXLE WEIGHT DISTRIBUTIONS					
Empty		Full (Average Payload)		Half Full	
Front	50%	Front	35.8%	Front	43%
Rear	50%	Rear	64.2%	Rear	57%

MODEL AXLE WEIGHTS					
Empty		Full (Average Payload)		Half Full	
Total Weight	32,620	Total Weight	48,700	Total Weight	40,660
Front	16,276	Front	17,420	Front	16,848
Rear	16,344	Rear	31,280	Rear	23,812
	32,620		48,700		40,660

Payload
16,080
8.04

DETERMINE SAE OF SOLID WASTE VEHICLES

						Gross Axle Weight	SAE Equivalents		
							Single Axle	Double Axle	Triple Axle
						6,000	0.010	0.001	0.0003
						8,000	0.034	0.003	0.001
						10,000	0.088	0.007	0.002
						12,000	0.189	0.014	0.003
						14,000	0.360	0.027	0.006
						16,000	0.623	0.047	0.011
						18,000	1.000	0.077	0.017
						20,000	1.510	0.121	0.027
						22,000	2.180	0.180	0.04
						24,000	3.030	0.260	0.057
						26,000	4.090	0.364	0.08
						28,000	5.390	0.495	0.109
						30,000	6.970	0.658	0.145
						32,000	8.880	0.857	0.191
						34,000	11.180	1.095	0.246
						36,000	13.930	1.380	0.313
						38,000	17.200	1.700	0.393
						40,000	21.080	2.080	0.487
						42,000	25.640	2.510	0.597
Empty									
<u>Single Front</u>		<u>Double Rear</u>							
weight	16,276	weight	16,344						
SAE	0.675	SAE	0.052	Total SAE=	0.727				
Full									
<u>Single Front</u>		<u>Double Rear</u>							
weight	17,420	weight	31,280						
SAE	0.891	SAE	0.771	Total SAE=	1.662				
						Average =	1.195		
Half Full									
<u>Single Front</u>		<u>Double Rear</u>							
weight	16,848	weight	23,812						
SAE	0.783	SAE	0.252	Total SAE =	1.035				

**RESIDENTIAL ESAL CALCS
RECYCLABLES**

MODEL AXLE WEIGHT DISTRIBUTIONS					
Empty		Full (Average Payload)		Half Full	
Front	50%	Front	41.5%	Front	46%
Rear	50%	Rear	58.5%	Rear	54%

MODEL AXLE WEIGHTS					
Empty		Full (Average Payload)		Half Full	
Total Weight	32,620	Total Weight	40,640	Total Weight	36,630
Front	16,276	Front	16,847	Front	16,561
Rear	16,344	Rear	23,793	Rear	20,069
	32,620		40,640		36,630

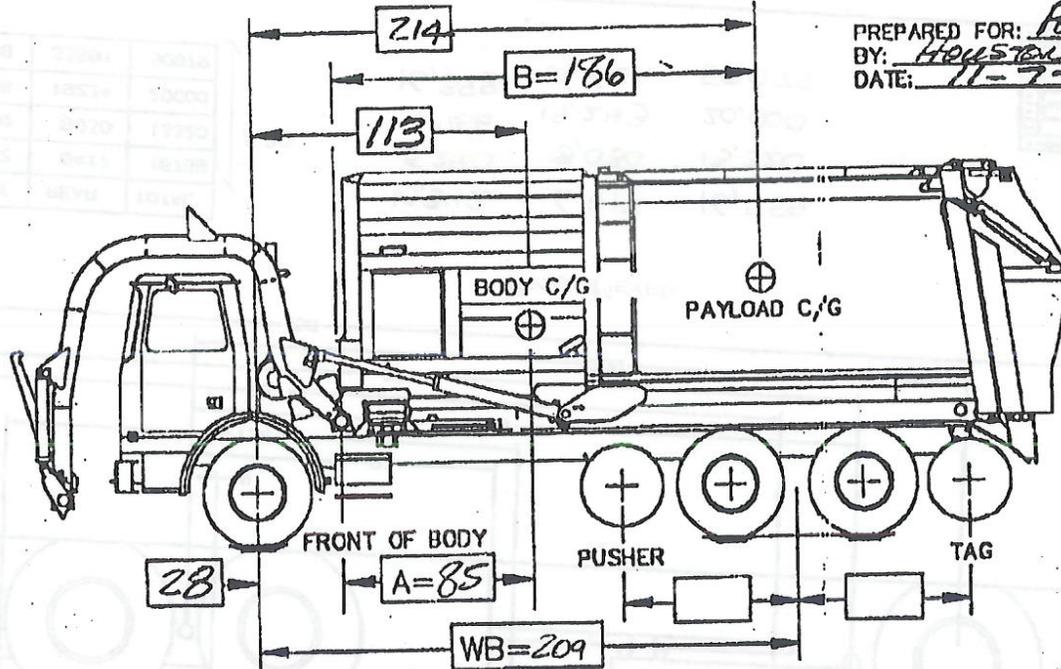
Payload
8,020
4.01

					34,000	11.180	1.095	0.246
Half Full					36,000	13.930	1.380	0.313
<u>Single Front</u>		<u>Double Rear</u>			38,000	17.200	1.700	0.393
weight	16,791	weight	23,069		40,000	21.080	2.080	0.487
SAE	0.772	SAE	0.223	Total SAE =	42,000	25.640	2.510	0.597
								0.995

CHASSIS INFORMATION
 MAKE: Generic
 MODEL: COE
 WHEELBASE: 209
 USABLE C/TW: B4

BODY INFORMATION
 MODEL: DPF-E-WC
 CAPACITY: 28 CU. YD.
 PAYLOAD: 714 #/YD.

PREPARED FOR: Formula West
 BY: Houston Ratledge
 DATE: 11-7-01



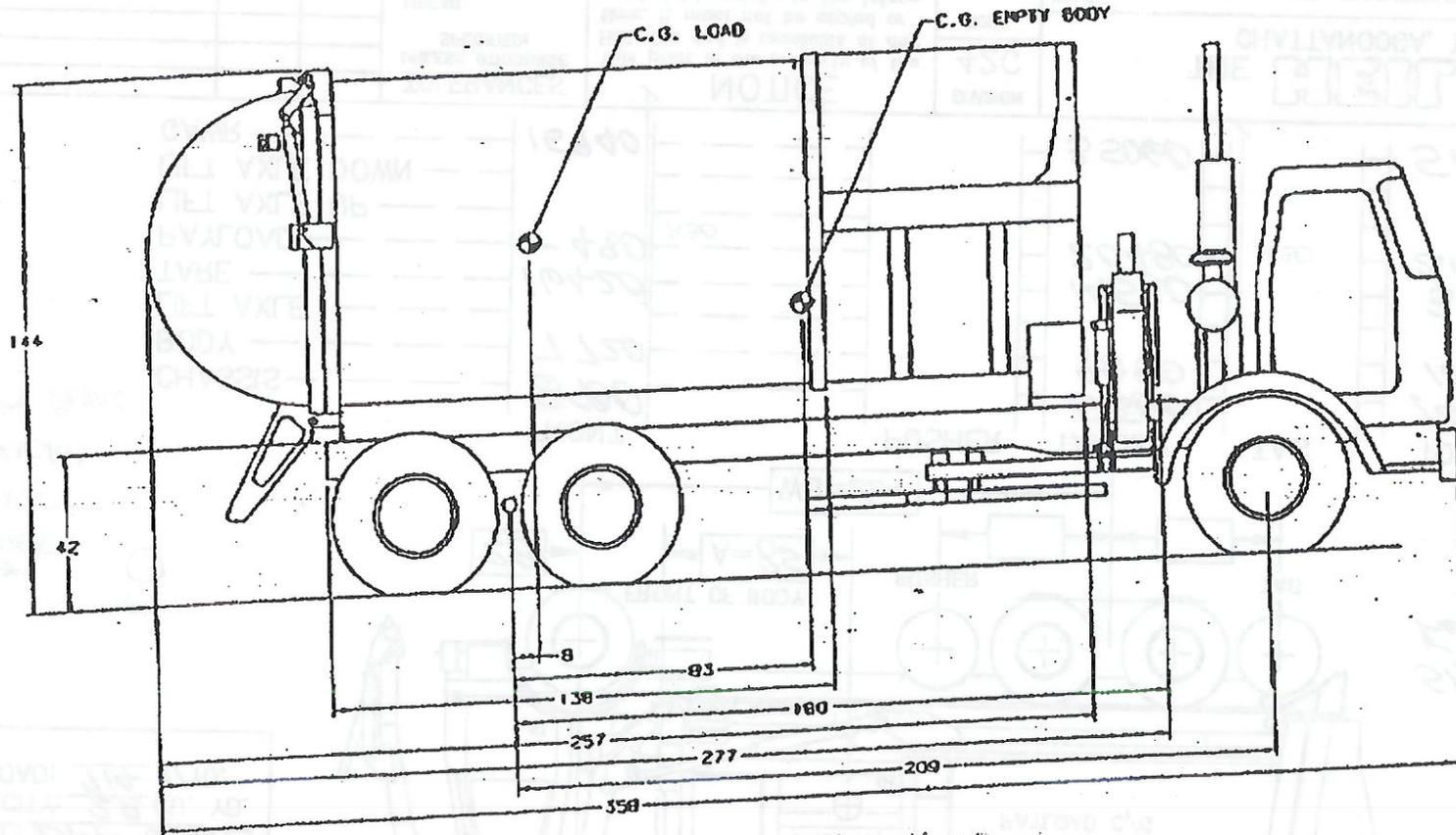
51,000 MAX
Fed Bridge

HEIL
GALBREATH
ACCURATE
AMERICAN
GEN Specs

	FRONT	PUSHER	TANDEM	TAG	TOTAL
CHASSIS	8700		5500		14200
BODY	7720		9080		16800
LIFT AXLE			14580		31000
TARE	16420		20480		20000
PAYLOAD	-480				
LIFT AXLE UP					
LIFT AXLE DOWN					
GAWR	15940		35060		51000

			TOLERANCES UNLESS OTHERWISE SPECIFIED:	NOTICE This print is the property of the HEIL Co. and is recallable at any time. It must not be copied or used detrimentally to the interests of the HEIL Co.	DIVISION 42C	THE HEIL CO. CHATTANOOGA, TN	
			LINEAR .XX = ± .08 .XXX = ± .030 ANGULAR = ± 1'		CODE M		
			MATERIAL:	DATE: 07/18/94	SCALE: N/A	DRAWN BY: JHB	PART No. 701A7539
WAS	DATE	ECO No.					

27 YD LEACH CURBTENDER, FULL EJECT, OFF SET ARM ON WHITE EXPEDITOR



ROSS MEYER

	FRONT	REAR	TOTAL
CHASSIS	10342	6417	16759
BODY	5290	8030	13320
LOAD	766	19234	20000
TOTAL	16398	33691	50079

A30

10,342	6,417	16,759
5,290	8,030	13,320
766	19,243	20,000
16,398	33,681	50,079

LOADING FROM (2.5) FEET ABOVE G.P.		TOTAL WEIGHT	
CHASSIS	16759	16759	
BODY	13320	13320	
LOAD	20000	20000	
TOTAL	50079	50079	

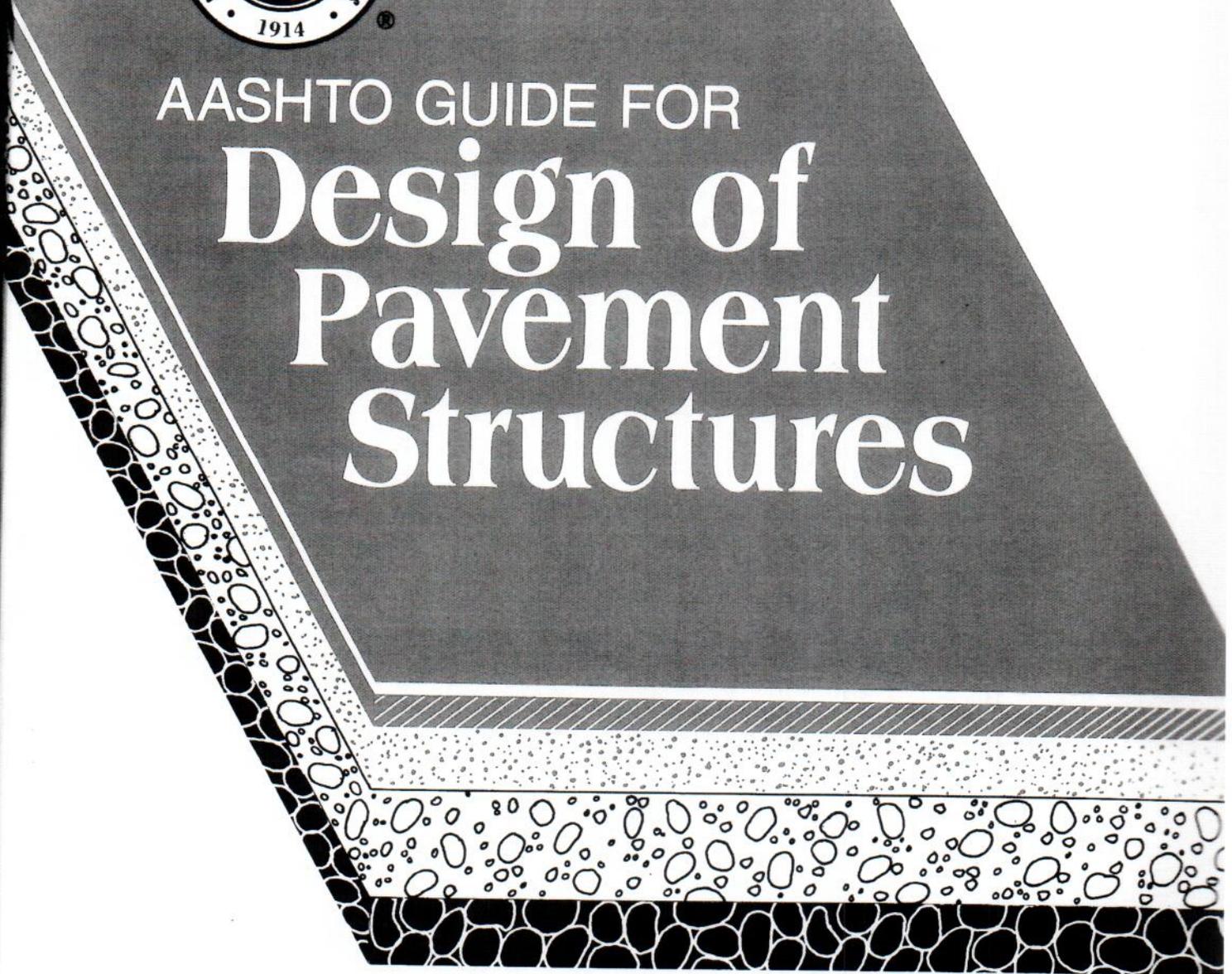
A31

P.12

'96 11:54 ARATA EQUIPMENT CO. 415 508-1011



AASHTO GUIDE FOR
**Design of
Pavement
Structures**



PUBLISHED BY THE
AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS

D-6

Design of Pavem

Table D.4. Axle Load Equivalency Factors for Flexible Pavements, Single Axles and p_t

Axle Load (kips)	Pavement Structural Number (SN)				5
	1	2	3	4	
2	.0004	.0004	.0003	.0002	.0002
4	.003	.004	.004	.003	.002
6	.011	.017	.017	.013	.010 ✓
8	.032	.047	.051	.041	.034
10	.078	.102	.118	.102	.088
12	.168	.198	.229	.213	.189
14	.328	.358	.399	.388	.360
16	.591	.613	.646	.645	.623
18	1.00	1.00	1.00	1.00	1.00
20	1.61	1.57	1.49	1.47	1.51
22	2.48	2.38	2.17	2.09	2.18
24	3.69	3.49	3.09	2.89	3.03
26	5.33	4.99	4.31	3.91	4.09
28	7.49	6.98	5.90	5.21	5.39
30	10.3	9.5	7.9	6.8	7.0
32	13.9	12.8	10.5	8.8	8.9
34	18.4	16.9	13.7	11.3	11.2
36	24.0	22.0	17.7	14.4	13.9
38	30.9	28.3	22.6	18.1	17.2
40	39.3	35.9	28.5	22.5	21.1
42	49.3	45.0	35.6	27.8	25.6
44	61.3	55.9	44.0	34.0	31.0
46	75.5	68.8	54.0	41.4	37.2
48	92.2	83.9	65.7	50.1	44.5
50	112.	102.	79.	60.	53.

D-7

D.5. Axle Load Equivalency Factors for Flexible Pavements, Tandem Axles and p_t of 2.5

Pavement Structural Number (SN)					
1	2	3	4	5	6
.0001	.0001	.0001	.0000	.0000	.0000
.0005	.0005	.0004	.0003	.0003	.0002
.002	.002	.002	.001	.001✓	.001
.004	.006	.005	.004	.003	.003
.008	.013	.011	.009	.007	.006
.015	.024	.023	.018	.014	.013
.026	.041	.042	.033	.027	.024
.044	.065	.070	.057	.047	.043
.070	.097	.109	.092	.077	.070
.107	.141	.162	.141	.121	.110
.160	.198	.229	.207	.180	.166
.231	.273	.315	.292	.260	.242
.327	.370	.420	.401	.364	.342
.451	.493	.548	.534	.495	.470
.611	.648	.703	.695	.658	.633
.813	.843	.889	.887	.857	.834
1.06	1.08	1.11	1.11	1.09	1.08
1.38	1.38	1.38	1.38	1.38	1.38
1.75	1.73	1.69	1.68	1.70	1.73
2.21	2.16	2.06	2.03	2.08	2.14
2.76	2.67	2.49	2.43	2.51	2.61
3.41	3.27	2.99	2.88	3.00	3.16
4.18	3.98	3.58	3.40	3.55	3.79
5.08	4.80	4.25	3.98	4.17	4.49
6.12	5.76	5.03	4.64	4.86	5.28
7.33	6.87	5.93	5.38	5.63	6.17
8.72	8.14	6.95	6.22	6.47	7.15
10.3	9.6	8.1	7.2	7.4	8.2
12.1	11.3	9.4	8.2	8.4	9.4
14.2	13.1	10.9	9.4	9.6	10.7
16.5	15.3	12.6	10.7	10.8	12.1
19.1	17.6	14.5	12.2	12.2	13.7
22.1	20.3	16.6	13.8	13.7	15.4
25.3	23.3	18.9	15.6	15.4	17.2
29.0	26.6	21.5	17.6	17.2	19.2
33.0	30.3	24.4	19.8	19.2	21.3
37.5	34.4	27.6	22.2	21.3	23.6
42.5	38.9	31.1	24.8	23.7	26.1
48.0	43.9	35.0	27.8	26.2	28.8
54.0	49.4	39.2	30.9	29.0	31.7
60.6	55.4	43.9	34.4	32.0	34.8
67.8	61.9	49.0	38.2	35.3	38.1
75.7	69.1	54.5	42.3	38.8	41.7
84.3	76.9	60.6	46.8	42.6	45.6
93.7	85.4	67.1	51.7	46.8	49.7

CITY OF SAN RAFAEL

NOTICE OF PUBLIC HEARING BEFORE THE SAN RAFAEL CITY COUNCIL

You are invited to attend the City Council hearing on the following: consideration to approve maximum rates allowed by Marin Sanitary Service for refuse and recycling collection services.

DATE/TIME: Monday, December 18, 2023, at 7:00 p.m.

LOCATION: City Council Chambers, City Hall, 1400 Fifth Avenue, San Rafael, CA 94901

PURPOSE:

To consider a request by Marin Sanitary Service for a rate increase of 6.22% for refuse and recycling collection and services and to consider adopting a Resolution authorizing maximum rates to be charged by Marin Sanitary Service for the year 2024 and approving cost justifications for solid waste franchise fees.

WHAT WILL HAPPEN:

Staff will provide a presentation, members of the public can provide comments/questions, and the City Council will consider all public testimony, deliberate, and determine how to proceed with the recommendation provided by staff.

IF YOU CANNOT ATTEND:

You may submit comments regarding the proposed item by 4:00 p.m. the day of the hearing to Lindsay Lara, City Clerk, City of San Rafael, 1400 Fifth Avenue, San Rafael, CA 94901, or by email to city.clerk@cityofsanrafael.org. You can also hand deliver a letter prior to the public hearing. The City Clerk's office will forward your comments to the City Council and publish correspondence received to the agenda online. Comments received after 4:00 p.m. will be forwarded to the City Council and posted online the following day.

FOR MORE INFORMATION:

For additional information regarding the above, you may contact Cory Bytof, Sustainability Program Manager for the City of San Rafael at (415) 485-3407 or cory.bytof@cityofsanrafael.org. Office hours are Monday-Friday, 8:30 AM to 5:00 PM. You can also view the staff report after 4:00 p.m. on the Friday before the meeting at <https://www.cityofsanrafael.org/city-council-meetings/>

/s/ Lindsay Lara
Lindsay Lara
City Clerk
City of San Rafael

To be published in the Marin IJ twice: December 8, 2023 & December 13, 2023