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To: Mr. Richard Tsai, Environmental Resources Manager, City of Davis

From: Mr. Garth Schultz, Principal, R3 Consulting Group

Date: August 31, 2018

Subject: Letter Report on 10-Year Financial Plan and 5-Year Rate Study

Attachments: 1 – Draft 10-Year Financial Plan Summary
2 – Draft Environmental Mitigation Fee Assessment Letter Report
3 – Draft 5-Year Service Charges

Methodology

R3 Consulting Group, Inc. (R3) was engaged by the City of Davis (City) to develop a 10-Year Financial Plan for the City's Solid Waste Fund as well as 5-Year Rate Study projecting adjustments to the City's solid waste service charges for the coming five years. In developing the 10-Year Financial Plan (10-Year Plan) and projected adjustments to solid waste service charges, R3 reviewed and analyzed financial documents and other data provided by the City, including but not limited to:

- Detailed budgeted and actual revenues and expenses for the Solid Waste Fund from Fiscal Year (FY) 13/14 through FY 17/18;
- Detailed budgeted revenues and expenses for the Solid Waste Fund in FY 18/19;
- Projected City escalation factors for labor, benefits, and other expenses (per City Budget practices);
- Historical solid waste service levels, annual service charge revenues, and adjustments to solid waste service charges from FY 13/14 through FY 17/18;
- Historical payments made by the City to the City's contracted solid waste collections company, Davis Waste Removal / Recology Davis (Recology Davis);
- Historical adjustments to Recology Davis's compensation for services rendered to the City, including historical adjustments to landfill and green waste composting tipping charges;
- Documentation of repayment on an interfund loan due from the Solid Waste Fund to the City's Wastewater Fund; and
- Estimated new ongoing Solid Waste Fund expenses anticipated to start in FY 18/19 and thereafter.

In developing the 10-Year Plan, R3 also provided analysis and recommendations regarding Solid Waste Fund reserves, projections for the City's diversion program expenses, and estimates of annual revenue losses from continued "migration" of solid waste accounts from larger and higher revenue generating garbage container sizes to smaller and less revenue generating garbage container sizes.

Summary of 10-Year Plan Assumptions

Overview

The current draft of the Solid Waste Fund 10-Year Financial Plan is included as Attachment 1 to this memorandum. The draft 10-Year Plan shows:

Historical revenues and expenses from FY 14/15 through FY 17/18.

Actual revenues and expenses for FY 17/18 have not yet been fully reconciled by the City, and as such may vary slightly from the final reconciled values once they are available. Additionally, though FY 13/14 revenues and expenses were provided by the City, the historical data contained anomalies (in comparison to other years) that require further analysis and explanation before being included in the 10-Year Plan and are thus not shown.

FY 18/19 revenues and expenses based on the Adopted FY 18/19 City Budget.

Budgeted figures for solid waste service charge revenues for July – December 2018 have been adjusted based on analysis of actual revenues received from January – June 2018. Projected revenues for January – June 2019 have been adjusted to account for the recommended FY 18/19 adjustments to service charges, which are anticipated to become effective January 1, 2019.

Adjustments to expenses for Recology Davis Solid Waste and Recycling Services and Street Sweeping Services to more accurately present those expenses have also been made.

Non-budgeted but anticipated new expenses are also shown under "Other Operating Expenses" and are discussed below.

Forecasted revenues and expenses from FY 19/20 through FY 27/28.

Projections of revenues and expenses in out years are based on FY 18/19 figures.

Revenue projections are split into halves because service charges are adjusted mid-way through each FY. Service charge revenues for January – June are shown separately from revenues for July – December, and estimated losses due to continued migration for each half year are also shown.

Expense projections include assumptions for increases in costs for labor, benefits, and other expenses which are consistent with the City's standard budget projections. Expenses for Solid Waste and Recycling Services and Street Sweeping Expenses are also projected to increase based on historical rates of adjustment and per the methodology set by the agreement between the City and Recology Davis.

10-Year Plan Detail

Specific assumptions for each line of the Draft 10-Year Plan are detailed below:

▪ **Annual Service Charge Adjustment**

Actual service charge adjustments for FY 14/15 through FY 17/18 are shown, as well as draft recommended service charge adjustments starting in FY 18/19. Service charge adjustments as shown are recommended in order to:

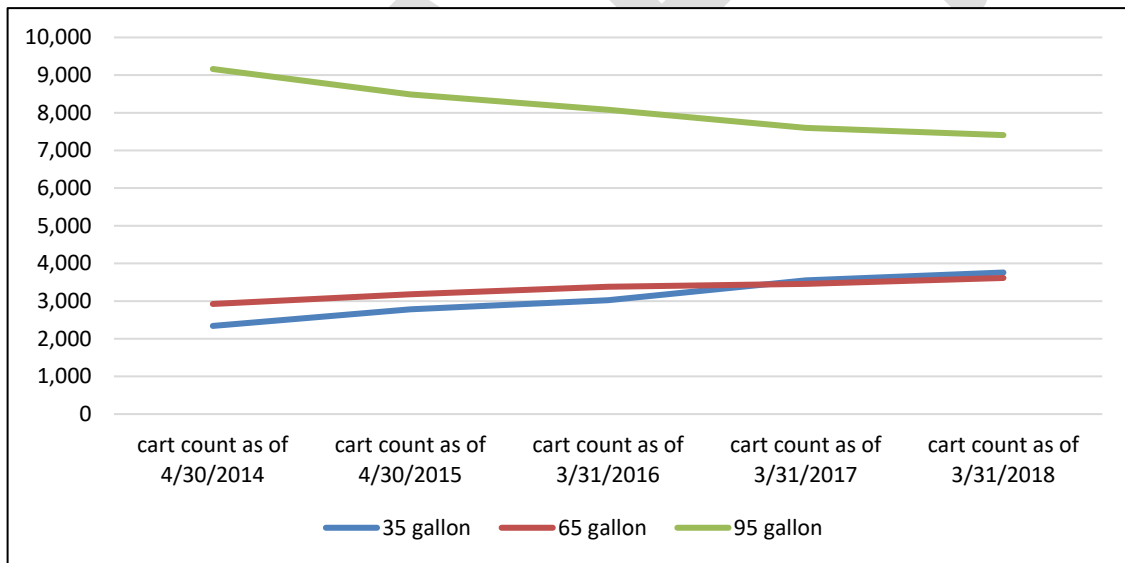
- Smooth out necessary rate adjustments, with lower increases being necessary each year (except FY 23/24 when new expenses are potentially anticipated);
- Keep a positive balance in the Solid Waste Fund; and
- Gradually increase the Solid Waste Fund balance to meet a reserve target of 15% of operating expenses by FY 27/28.

▪ **Income: Charges for Service and Estimated Migration Losses**

The draft recommended service charge adjustments are effective on January 1, mid-way through each fiscal year. Adjustments to service charges are included in the January – June service charges and are applied to the prior July – December service charges, less estimated losses due to migration.

Losses due to migration are modeled at 0.5% each half year, which is consistent with the revenue losses from migration in single family accounts (migration in commercial accounts is not known). Service charges for July – December are set based on the January – June service charges, less estimated migration losses. Figure 1 shows the trend toward smaller residential garbage container sizes from 2014 through 2018.

Figure 1: Migration of Single Family Garbage Accounts



R3 used the actual migration data along with historical service rates to model the impacts of migration on expected revenues and determined that annual migration since 2015 (when variable service charges were first introduced for single-family residential customers in the City) averaged approximately 1% per year (0.5% per half-year) and ranged from 0.8% to 1.5% per year (0.4% to 0.75% per half year).

- **Income: Other Revenues and One-Time Loan from Wastewater**

The Solid Waste Fund receives limited amounts of income from investments and from services charges for debris boxes. These revenues can vary year-to-year depending on factors including amount of fund balance, interest rates, and market factors that drive the use of debris boxes. Because these revenues account for less than 1% of income to the Solid Waste Fund, they are assumed to be static in future years; variances to these revenues do not affect necessary service charge adjustments.

- **Expenses: Solid Waste and Recycling Services (Recology Davis)**

The largest expense category is for Solid Waste and Recycling Services for Recology Davis, comprising approximately 85% of total Solid Waste Fund expenses. These expenses are assumed to escalate by 3% (effective January 1 of each year) and then again by 0.5% (effective ~ July 1 of each year) based on the indexed-rate adjustment methodology included in the agreement between the City and Recology Davis. The January 1 adjustment accounts for changes to the Recology Davis's collection costs, and the July 1 adjustment accounts for changes to disposal expenses which are set by Yolo County.¹

These rates of adjustment are consistent with historical adjustments, but do not take into account the possibility of a larger rate adjustment resulting from a "detailed rate review" or other changes to Yolo County tipping fee expenses, which could occur in the future and result in a larger than anticipated rate increases. However, because it is not known when this might occur and what the resulting adjustments might be, no assumptions related to a detailed rate review or larger than anticipated adjustments to Yolo County tipping are included in the Draft 10-Year Plan.

- **Expenses: Solid Waste and Diversion Programs**

Expenses for the City's Solid Waste and Diversion Programs (operated by the Environmental Resources Division) are based on the FY 18/19 budgeted figures, including annual escalation factors of 3.8% for wages and benefits (consistent with City overall budgeting practices) as 3% for all other expenses.

In prior FY's, actual Solid Waste and Diversion Program expenses have often been less than budgeted amounts, though in FY 17/18, actual expenses matched budgeted values. The budget for FY 18/19 is slightly less than the FY 17/18 actual/budgeted amounts and has been deemed necessary and appropriate by City staff.

- **Expenses: City Administration**

Expenses for City Administration are based on the FY 18/19 budgeted figures, including annual escalation factors of 3.8% for wages and benefits (consistent with City overall budgeting practices) and 3% for all other expenses.

- **Expenses: Street Sweeping Services**

In addition to the Solid Waste and Recycling Services provided by Recology Davis, the City also pays Recology Davis for Street Sweeping Services. Expenses for street sweeping services are set by the agreement between the City and Recology Davis, and expenses increase based on the indexed rate adjustment methodology described above. These expenses are assumed to increase

¹ Yolo County has confirmed an assumed increase in landfill and green waste tipping fees of 3% per year which corresponds to an approximate 0.5% increase in Recology Davis's annual expenses.

at the same 3% indexed rate adjustment as used for Solid Waste and Recycling Services, which is consistent with past indexed rate adjustments.

▪ **Expenses: Other Operating Expenses**

During the development of the Draft 10-Year Plan, the City provided direction to R3 to include expenses for the following items as baseline expenses in FY 18/19 and all future years:

- Increase to Environmental Mitigation Assessment: Recology Davis currently pays the City a \$100,000 annual assessment to cover the impacts of Solid Waste and Recycling Services on City streets. R3 conducted a prior study at the direction of the City that indicated that the actual impacts from Recology Davis operations are approximately \$220,000 more than are funded by the current assessment (see Attachment 2). The City anticipates increasing the Assessment from the current \$100,000 to \$320,000 annually, which would be recovered by Recology Davis through an increase its compensation and thus collected by the City via solid waste service charges.
- Bike Path Street Sweeping: The City has the option to ask Recology Davis to sweep the City's bike paths. R3 has estimated that this additional expense will be approximately \$140,000 per year and will escalate at 3% as with other Recology Davis expenses. This figure is a placeholder and will need to be updated once a firm cost estimate is obtained from Recology Davis.
- Closed Landfill Mitigation Funding: The City intends to fund post-closure and other improvements at the City-owned and closed landfill. The \$150,000 annual figure is an estimate of the necessary expenses for these activities as provided by the City.
- Artists in Residency program: The City intends to fund this program with Recology Davis. The estimated cost of \$30,000 per year is based on the annual program costs a similar program operated by Recology Davis in San Francisco. This estimate does not include any start-up costs and is related to stipends and materials only.
- Interest and Principal on Interfund Loan: The Solid Waste Fund owes the Wastewater Fund a principal amount of \$3,000,000 due over the next 10 years, as well as interest on that principal. The amounts shown in the Draft 10-Year Plan are based on amortization of \$3,000,000 with principal and interest payable over 10 years in annual payments and an assumed interest rate of 2%. Actual interest payments will vary as the promissory note for the interfund loan is based on a variable interest rate.
- In addition to the above expenses anticipated in FY 18/19, the City also anticipates the possible need for new capital investment in solid waste facilities (either with Recology Davis or by the City) tentatively starting in FY 23/24. Though specifics are not known at this time, the Draft 10-Year Plan shows debt service on a \$4,000,000 facility investment payable over 20 years at 3% interest, starting outside of the 5-year rate horizon in FY 23/24.

▪ **Ending Fund Balance and Reserve Target**

Prior drafts of the 10-Year Plan showed specific contributions to reserve which, based on feedback from City and the Utility Rate Advisory Commission, have been simplified to achieve a minimum fund balance meeting 15% of operating expenses by the end of the 10-year planning horizon. The City does not need to maintain a large fund balance in reserve for solid waste and recycling service contingencies because those are the responsibility of Recology Davis. Moreover, Recology Davis

maintains a performance bond which may be drawn upon in case of breach of contract. This bond may be considered a funding source for solid waste and recycling service contingencies.

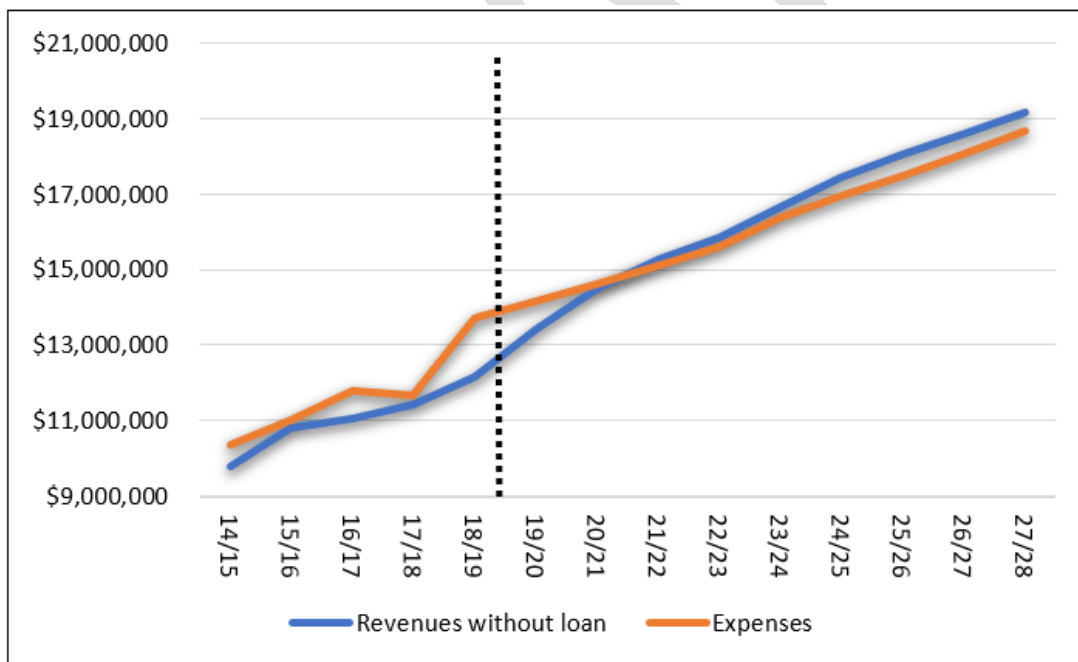
However, the City should seek to maintain some reserves in the event of unanticipated cost increases, emergencies or disasters that could impact revenues and/or expenses in the Solid Waste Fund, including but not limited to:

- Potential increases in compensation due to Recology Davis as a result of a “detailed rate review” or a greater than anticipated increase in Yolo County tipping fees;
- Potential increases in City diversion program expenses in response to new State regulations (such as State Bill 1383) which are currently being developed and could result in additional City regulatory obligations, required programs, and State reporting;
- Potential increased disposal expenses resulting from a natural disaster such as storm event, flood, earthquake or fire; and
- Potential decreased revenues resulting from increase migration and/or economic recession, which generally results in less waste generation and thus revenues from service charges.

The City should note that the Draft 10-Year Plan and recommended service charge adjustments result in an initial draw-down of the fund balance to 1% of operating revenues, and slowly builds up fund balance reserves to 15% of operating expenses by the end of the 10-year planning horizon. As a result, the City will have limited reserves (below 5% of operating expenses) in the first five years of the 10-Year Plan, with reserves growing steadily leading up to FY 27/28.

Figure 2 demonstrates the difference between historical and projected revenues and expenses, with revenues lower than expenses from FY 14/15 through FY 19/20, becoming balanced in FY 20/21, and a slow growth of reserves via surplus revenues in the out years.

Figure 2: Historical and Projected Revenues and Expenses



▪ **Breakdown of Service Charge Adjustments**

Attachment 1 shows draft recommended annual service charge adjustments from FY 18/19 through FY 22/23 in the amounts of 13.5%, 10%, 8%, 5% and 5%. These charge adjustments are also shown in Table 1, below. Table 1 shows the annual year-over-year projected increases for service charges, revenues, and expenses by main cost category.

Table 1 demonstrates that forecasted revenues are less than the recommended rate adjustments, which is due to two factors. First, because the service charge adjustments are made mid-way through each year, FY revenues will not be the same as the service charge increase amounts. Additionally, loss of revenues from migration also result in less revenue collection that would be expected based on service charge increases alone. This difference is shown graphically as Figure 3.

Table 1 further demonstrates that forecasted expenses for Recology Davis are anticipated to grow by 3.5% per year, City Solid Waste and Diversion Programs as approximately 3.3%-4.0% per year, City Administration at 3.1% per year, Street Sweeping at approximately 3% per year, and other operating expenses at approximately 0.5% per year (with the exception of FY 23/24 when anticipated capital expenses are shown in the 10-Year Plan).

Table 1: Annual Year-to-Year Forecasted Increase in Service Charges, Revenues and Expenses

	18/19	19/20	20/21	21/22	22/23
Recommended Annual Service Charge Adjustments	13.5%	10.0%	8.0%	5.0%	5.0%
Total Forecast Revenues	6.8%	10.5%	7.8%	5.4%	3.9%
Total Forecast Expenses	9.8%	3.3%	3.3%	3.3%	3.3%
Solid Waste and Recycling Services (Recology Davis)	3.3%	3.5%	3.5%	3.5%	3.5%
Solid Waste and Diversion Programs	-7.1%	3.3%	3.4%	3.4%	3.5%
City Administration	6.5%	3.1%	3.1%	3.1%	3.1%
Street Sweeping Services (Recology Davis)	11.2%	3.1%	3.0%	2.9%	3.0%
Other Operating Expenses	N/A	0.5%	0.4%	0.5%	0.6%

	23/24	24/25	25/26	26/27	27/28
Recommended Annual Service Charge Adjustments	7.0%	5.0%	4.0%	4.0%	4.0%
Total Forecast Revenues	4.9%	4.9%	3.4%	3.0%	3.0%
Total Forecast Expenses	5.0%	3.3%	3.3%	3.3%	3.3%
Solid Waste and Recycling Services (Recology Davis)	3.5%	3.5%	3.5%	3.5%	3.5%
Solid Waste and Diversion Programs	3.5%	3.6%	3.7%	3.8%	4.0%
City Administration	3.1%	3.1%	3.1%	3.1%	3.1%
Street Sweeping Services (Recology Davis)	2.9%	3.1%	3.0%	3.1%	3.0%
Other Operating Expenses	30.9%	0.4%	0.4%	0.4%	0.4%

Figure 3: Recommended Annual Service Charge Adjustments Against Total Forecast Revenues

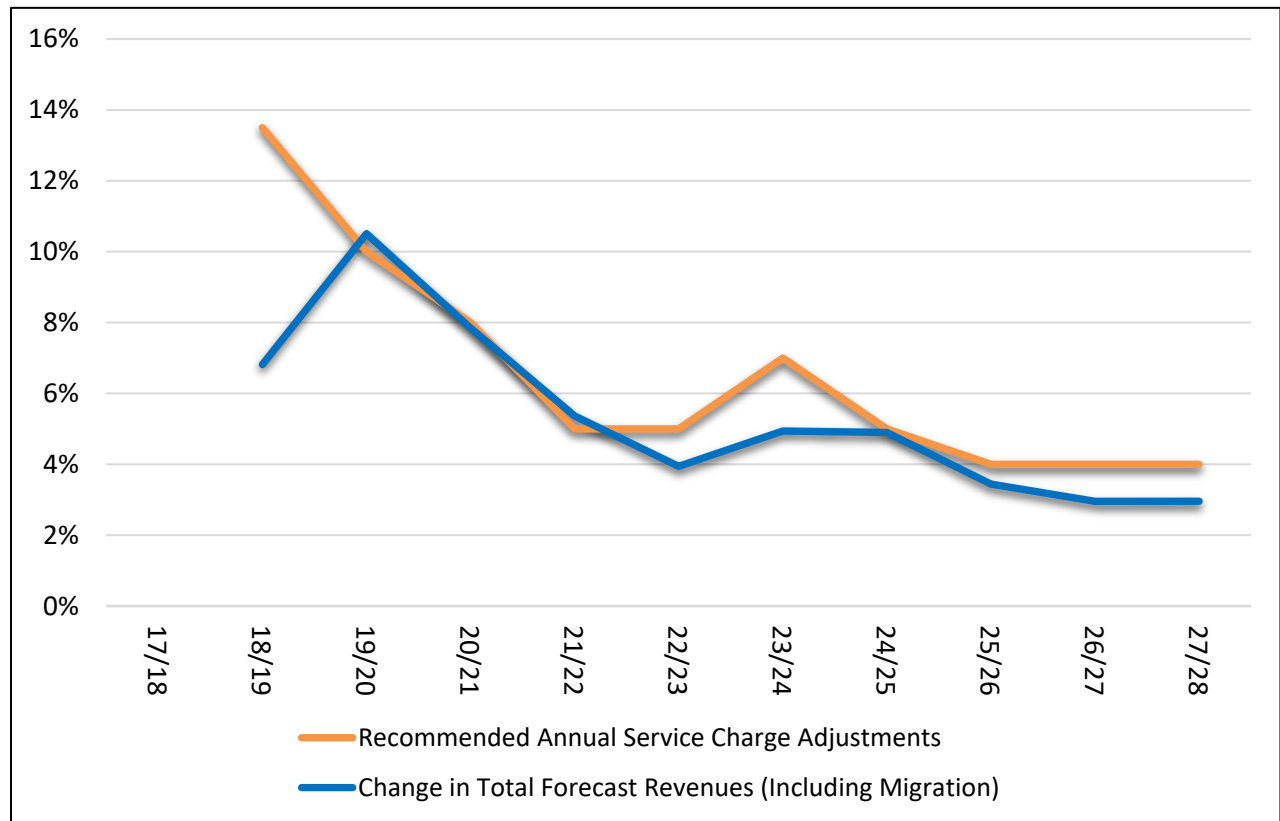


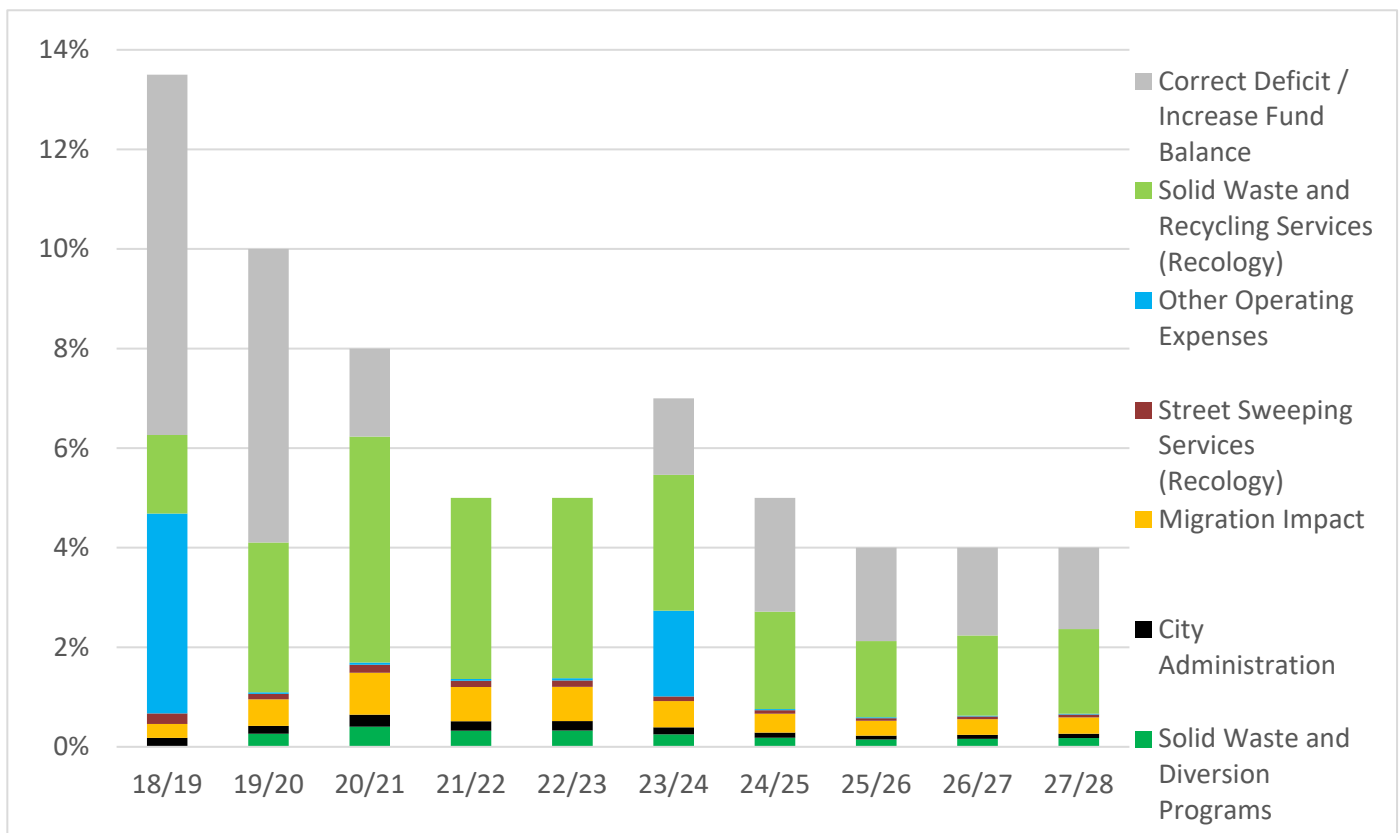
Table 2 shows the primary components contributing to the recommended service charge adjustments. As shown in Table 2, the impacts of migration and increases in costs of Solid Waste and Recycling Services are two of the primary drivers of the annual rate adjustments. Growth in the Solid Waste Fund balance is also a primary contributor, with two primary elements. The first is the need to recover from a structural budget deficit, wherein Fund expenses have outpaced revenues for the last several fiscal years. The second is the growth in the fund balance to serve as reserves, as discussed above.

Figure 4 demonstrates graphically how the service charge components in Table 2 stack up to the total annual recommended service charge adjustments.

Table 2: Components Driving the Adjustments to Annual Service Charges

Service Charge Components	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28
Solid Waste and Recycling Services	1.58%	3.01%	4.54%	3.64%	3.62%	2.73%	1.96%	1.53%	1.61%	1.70%
Correct Deficit / Increase Fund Balance	7.24%	5.90%	1.77%	0.00%	0.00%	1.54%	2.28%	1.88%	1.76%	1.64%
Migration Impact	0.28%	0.53%	0.84%	0.69%	0.69%	0.53%	0.38%	0.30%	0.31%	0.33%
Solid Waste and Diversion Programs	0.00%	0.26%	0.41%	0.33%	0.33%	0.25%	0.18%	0.15%	0.16%	0.18%
City Administration	0.18%	0.16%	0.24%	0.19%	0.19%	0.14%	0.10%	0.08%	0.08%	0.09%
Street Sweeping Services	0.21%	0.11%	0.16%	0.13%	0.13%	0.09%	0.07%	0.05%	0.06%	0.06%
Other Operating Expenses	4.02%	0.03%	0.05%	0.04%	0.04%	1.72%	0.02%	0.02%	0.02%	0.02%
Total Service Charge Adjustment	13.50%	10.00%	8.00%	5.00%	5.00%	7.00%	5.00%	4.00%	4.00%	4.00%

Figure 4: Service Charge Components and Total Annual Adjustments



5-Year Service Charges Based on 10-Year Financial Plan

R3 has prepared draft proposed rate tables of the City’s solid waste service charges for the next five years (2019 - 2023) showing the monthly service charges for single family dwellings, commercial and multi-family, drop-box and food scrap carts.

These proposed rate tables are based on the City’s current solid waste service charges, with all service charges being escalated by the adjustments shown in the 10-Year Plan. Please see Attachment 3 for the complete set of draft City solid waste service charges for the five-year period. Table 3, below, shows the current 2018 and draft proposed 2019 – 2023 single-family residential solid waste service charges.

Table 3: Current and Draft Proposed Solid Waste Service Monthly Service Charges by Year

Single Family Garbage Cart Size	Current 2018	Proposed 2019	Proposed 2020	Proposed 2021	Proposed 2022	Proposed 2023
35-Gallon	\$ 31.00	\$ 35.19	\$ 38.70	\$ 41.80	\$ 43.89	\$ 46.08
65-Gallon	\$ 34.32	\$ 38.95	\$ 42.85	\$ 46.28	\$ 48.59	\$ 51.02
95-Gallon	\$ 40.94	\$ 46.47	\$ 51.11	\$ 55.20	\$ 57.96	\$ 60.86

**City of Davis
Solid Waste Fund 10-Year Financial Plan and Service Charge Projections**

Annual Service Charge Adjustments	Historical Service Charge Adjustments				Recommended Service Charge Adjustments									
	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	2024 - 2025	2025 - 2026	2026 - 2027	2027 - 2028
	1.6%	2.6%	2.9%	3.0%	13.5%	10.0%	8.0%	5.0%	5.0%	7.0%	5.0%	4.0%	4.0%	4.0%

Income and Expense Summary	Actual				Budgeted	Forecast									
	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	2024 - 2025	2025 - 2026	2026 - 2027	2027 - 2028	
Beginning Fund Balance	\$1,265,286	\$714,215	\$527,537	-\$243,583	\$ 2,498,000	\$922,800	\$178,500	\$25,200	\$169,200	\$415,900	\$661,100	\$1,187,500	\$1,759,800	\$2,289,800	
Income															
Charges for Service (January - June)	\$ 4,521,195	\$ 5,411,362	\$ 5,481,996	\$ 5,687,030	\$ 5,739,000	\$ 6,449,000	\$ 7,024,000	\$ 7,510,000	\$ 7,807,000	\$ 8,115,000	\$ 8,596,000	\$ 8,936,000	\$ 9,201,000	\$ 9,473,000	
Estimated Migration Losses	\$ (28,395)	\$ (42,562)	\$ (48,096)	\$ (25,330)	\$ (29,000)	\$ (32,000)	\$ (35,000)	\$ (38,000)	\$ (39,000)	\$ (41,000)	\$ (43,000)	\$ (45,000)	\$ (46,000)	\$ (47,000)	
Charges for Service (July - December)	\$ 5,312,495	\$ 5,462,862	\$ 5,624,496	\$ 5,763,930	\$ 6,481,000	\$ 7,059,000	\$ 7,548,000	\$ 7,846,000	\$ 8,156,000	\$ 8,639,000	\$ 8,981,000	\$ 9,247,000	\$ 9,521,000	\$ 9,803,000	
Estimated Migration Losses	\$ (28,395)	\$ (42,562)	\$ (48,096)	\$ (25,330)	\$ (32,000)	\$ (35,000)	\$ (38,000)	\$ (39,000)	\$ (41,000)	\$ (43,000)	\$ (45,000)	\$ (46,000)	\$ (48,000)	\$ (49,000)	
Subtotal Service Charge Revenues	\$ 9,776,900	\$ 10,789,100	\$ 11,010,300	\$ 11,400,300	\$ 12,159,000	\$ 13,441,000	\$ 14,499,000	\$ 15,279,000	\$ 15,883,000	\$ 16,670,000	\$ 17,489,000	\$ 18,092,000	\$ 18,628,000	\$ 19,180,000	
Other Revenues	\$ 31,400	\$ 23,000	\$ 31,000	\$ 20,400	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	
One-Time Loan from Waste Water	\$ -	\$ -	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Income	\$ 9,808,300	\$ 10,812,100	\$ 11,041,300	\$ 14,420,700	\$ 12,199,000	\$ 13,481,000	\$ 14,539,000	\$ 15,319,000	\$ 15,923,000	\$ 16,710,000	\$ 17,529,000	\$ 18,132,000	\$ 18,668,000	\$ 19,220,000	
Expenses															
Standard Operating Expenses															
Solid Waste and Recycling Services (Recology)	\$ 8,408,862	\$ 8,934,780	\$ 10,136,598	\$ 10,459,470	\$ 10,802,500	\$ 11,182,300	\$ 11,575,500	\$ 11,982,500	\$ 12,403,700	\$ 12,839,600	\$ 13,290,900	\$ 13,758,100	\$ 14,241,700	\$ 14,742,400	
Solid Waste and Diversion Programs	\$ 644,877	\$ 741,566	\$ 706,634	\$ 1,074,142	\$ 997,900	\$ 1,031,300	\$ 1,066,400	\$ 1,102,800	\$ 1,140,900	\$ 1,180,800	\$ 1,223,100	\$ 1,267,800	\$ 1,315,700	\$ 1,367,800	
City Administration	\$ 547,419	\$ 541,951	\$ 541,954	\$ 608,471	\$ 647,800	\$ 667,700	\$ 688,500	\$ 709,800	\$ 731,700	\$ 754,400	\$ 777,700	\$ 801,800	\$ 826,600	\$ 852,200	
Street Sweeping Services (Recology)	\$ 758,213	\$ 780,480	\$ 427,234	\$ 406,348	\$ 452,000	\$ 466,000	\$ 480,000	\$ 494,000	\$ 509,000	\$ 524,000	\$ 540,000	\$ 556,000	\$ 573,000	\$ 590,000	
Subtotal Standard Operating Expenses	\$ 10,359,371	\$ 10,998,778	\$ 11,812,420	\$ 12,548,431	\$ 12,900,200	\$ 13,347,300	\$ 13,810,400	\$ 14,289,100	\$ 14,785,300	\$ 15,298,800	\$ 15,831,700	\$ 16,383,700	\$ 16,957,000	\$ 17,552,400	
Other Operating Expenses															
Increase to Environmental Mitigation Assessment	\$ -	\$ -	\$ -	\$ -	\$ 220,000	\$ 220,000	\$ 220,000	\$ 220,000	\$ 220,000	\$ 220,000	\$ 220,000	\$ 220,000	\$ 220,000	\$ 220,000	
Bike Path Sweeping (Estimated)	\$ -	\$ -	\$ -	\$ -	\$ 140,000	\$ 144,000	\$ 148,000	\$ 152,000	\$ 157,000	\$ 162,000	\$ 167,000	\$ 172,000	\$ 177,000	\$ 182,000	
Closed Landfill Mitigation Funding	\$ -	\$ -	\$ -	\$ -	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	
Artists in Residency Program	\$ -	\$ -	\$ -	\$ -	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	
Interest on Interfund Loan	\$ -	\$ -	\$ -	\$ -	\$ 60,000	\$ 54,500	\$ 48,900	\$ 43,200	\$ 37,400	\$ 31,500	\$ 25,400	\$ 19,300	\$ 13,000	\$ 6,500	
Principal on Interfund Loan	\$ -	\$ -	\$ -	\$ -	\$ 274,000	\$ 279,500	\$ 285,000	\$ 290,700	\$ 296,600	\$ 302,500	\$ 308,500	\$ 314,700	\$ 321,000	\$ 327,400	
Future Capital Debt Service PI Payment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 270,000	\$ 270,000	\$ 270,000	\$ 270,000	\$ 270,000	
Subtotal Other Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ 874,000	\$ 878,000	\$ 881,900	\$ 885,900	\$ 891,000	\$ 1,166,000	\$ 1,170,900	\$ 1,176,000	\$ 1,181,000	\$ 1,185,900	
Grand Total Operating Expenses	\$ 10,359,371	\$ 10,998,778	\$ 11,812,420	\$ 11,679,117	\$ 13,774,200	\$ 14,225,300	\$ 14,692,300	\$ 15,175,000	\$ 15,676,300	\$ 16,464,800	\$ 17,002,600	\$ 17,559,700	\$ 18,138,000	\$ 18,738,300	
Income less Operating Expenses	\$ (551,071)	\$ (186,678)	\$ (771,120)	\$ 2,741,583	\$ (1,575,200)	\$ (744,300)	\$ (153,300)	\$ 144,000	\$ 246,700	\$ 245,200	\$ 526,400	\$ 572,300	\$ 530,000	\$ 481,700	
Ending Fund Balance	\$ 714,215	\$ 527,537	\$ (243,583)	\$ 2,498,000	\$ 922,800	\$ 178,500	\$ 25,200	\$ 169,200	\$ 415,900	\$ 661,100	\$ 1,187,500	\$ 1,759,800	\$ 2,289,800	\$ 2,771,500	
Ending Fund Balance as % of Operating Expenses (Target 15%)	7%	5%	-2%	21%	7%	1%	0%	1%	3%	4%	7%	10%	13%	15%	



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2600 Tenth Street, Suite 411, Berkeley, CA 94710
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627 S. Highland Avenue, Suite 300, Los Angeles, CA 90036
Tel: 323-559-7470

October 23, 2017

Mr. Richard Tsai
Environmental Resources Manager
City of Davis
Public Works Department
1717 Fifth Street
Davis, CA 95616

**Subject: Environmental Mitigation Fee Assessment - Refuse Vehicle Street
Maintenance Cost Impact Fee Study**

Dear Mr. Tsai:

R3 Consulting Group, Inc. (R3) was engaged by the City of Davis (City) to quantify the impact of the City's franchised solid waste, recycling and green waste collection vehicles (Refuse Vehicles) on the City's street maintenance costs, in support of the City's assessment of the reasonableness of its current Environmental Impact Fee. This Letter Report provides the results of our analysis.

Project Objective

To estimate the annual impact of Davis Waste Removal's franchised Refuse Vehicles on the City's street maintenance costs, for purposes of assessing the reasonableness of the City's current Environmental Impact Fee.

Background

Environmental Mitigation Fee

Section 3.b. (Annual Environmental Mitigation Fee Payment) of the City's Franchise Agreement (Agreement) with Davis Waste Removal states that:

Contractor agrees to pay the City One Hundred Thousand Dollars (\$100,000) each Contract Year with the first annual payment due March 1, 2015 and each annual payment due January 10th thereafter. Contractor acknowledges that that Environmental Mitigation Fee is to compensate the City for infrastructure wear-and-tear associated with Contractor providing Solid Waste Collection Services throughout the City. The Environmental Fee payment shall be deposited in the City's Solid Waste Fund

and applied to solid waste, sustainability, and/or transportation activities consistent with Applicable Laws.

Status of Refuse Vehicle Impact Fees

Refuse vehicle impact fees, designed to support street repair activities, have been applied in California for more than 15 years. While they have been more common in Northern California, jurisdictions throughout the State have implemented them, including Alameda, Belmont, Beverly Hills, Hemet, Lafayette, La Verne, Livermore, Menlo Park, Mill Valley, Modesto, Napa, Petaluma, Pittsburg, Redlands, Rolling Hills Estates, Ross, San Rafael, Tiburon, Union City and Walnut Creek. In many cases, those fees are based on studies that used the same methodology that was used for this analysis and the City's previous analysis.

Summary Findings | Recommendations

Current Budget¹

At the City's current annual street maintenance budget of \$1.8 million, it is projected that over the period from 2017 through 2025, the City's deferred maintenance (unfunded backlog) will increase from \$29.0 million to \$51.5 million, an average annual increase of approximately \$5.7 million. Assuming 50%² of this total backlog is attributed to residential streets, and that residential refuse vehicles account for 15% of the total axle loadings (wear and tear) on a typical residential street, \$430,000 of this average annual unfunded backlog can be attributed to residential refuse vehicles. This total is \$330,000 more than the current Environmental Mitigation Fee (**Attachment 1**). Under this scenario the overall pavement condition index would decrease to 35.

Budget Required to Maintain 63 PCI³

For the City to maintain the condition of its overall street network at a PCI of 63 through 2025, the average annual street maintenance funding will need to increase from the current \$1.8 million to \$4.7 million, an annual increase of \$2.9 million. At this increased annual funding level, the City's deferred maintenance (unfunded backlog) will increase from \$29.6 million to \$41.1 million, an average annual increase of approximately \$1.3 million. This represents an average annual net increase of \$4.2 million in budgeted expenses (\$2.9 million) and deferred backlog (\$1.3 million).

As with the Current Budget scenario above, assuming 50% of this average net annual increased budget and deferred maintenance cost of \$4.2 is attributed to residential streets, and that residential refuse vehicles account for 15% of the total axle loadings (wear and tear) on a typical residential street, \$312,000 of that total cost can be attributed to residential refuse vehicles. That total is \$212,000 more than the current Environmental Mitigation Fee (**Attachment 1**). Under this scenario the overall pavement condition would be maintained at 63.

¹ Source: City of Davis; Pavement Management Program Update Report, NCE, April 2016.

² A specific accounting of the percentage of this total backlog associated with the City's residential streets was requested from the City but is not available at this time. This 50% estimate is considered to be reasonable given that the City's residential streets account for 50% of the overall pavement area of the City's streets, and that, on average, the overall condition of the City's residential streets is less than that of the City's arterial and collector streets (See Table 3).

³ Source: City of Davis; Pavement Management Program Update Report, NCE, April 2016.

Background

Collection System

Davis Waste Removal provides residential, commercial and industrial collection services for garbage, recycling and organics for the City of Davis. Residential service is provided weekly with fully automated side loading vehicles that make two passes down every residential street to provide solid waste, recycling and organic cart collection services. Commercial services are provided largely with front loading vehicles. Loose-in-the-Street yard waste piles are also collected monthly, except during peak leaf season (the third Monday in October through mid-December), when they are collected one time per week.

Street Network⁴

The percentage of the City's street by functional class based on pavement area is as follows:

- **Arterials** – 25.3%
- **Collector s**– 23.8%
- **Residential** – 50.6%
- **Other** - 0.3%

The pavement condition breakdown by street type (functional class), and the percentage of each functional class by condition category (PCI range) are shown in **Table 1** and **Table 2** below, respectively.

As shown, in **Table 2**, Residential | Local streets have a lower percentage of their total pavement area rated Good or Fair than either the Arterials and Collectors, and a higher percentage rated Poor or Very Poor. Streets rated Poor or Very Poor are significantly more-costly to improve that streets rated Good or Fair.

Table 1
Pavement Condition by Street Type (Functional Class)

Condition Category	PCI Range	Functional Class				Entire Street Network
		Arterial	Collector	Residential Local	Other (Alleys)	
Good	70-100	13.3%	10.2%	15.9%	0.1%	39.5%
Fair	50-69	10.4%	9.0%	16.0%	0.0%	35.4%
Poor	25-49	1.6%	4.5%	16.2%	0.0%	22.3%
Very Poor Failed	<25	0.0%	0.1%	2.5%	0.2%	2.8%
Total		25.3%	23.8%	50.6%	0.2%	100.0%

⁴ Source: City of Davis; Pavement Management Program Update Report, NCE, April 2016.

Table 2
Pavement Condition Percentage by Street Type (Functional Class)

Condition Category	PCI Range	Functional Class				Entire Street Network
		Arterial	Collector	Residential Local	Other (Alleys)	
Good	70-100	53%	43%	31%	50%	40%
Fair	50-69	41%	38%	32%	0%	35%
Poor	25-49	6%	19%	32%	0%	22%
Very Poor Failed	<25	0%	0%	5%	100%	3%
Total		100.0%	100.0%	100.0%	0.2%	100.0%

Projected Refuse Vehicle Impacts

Table 3 below provides a projection of the impact of franchised refuse vehicles on the City's residential streets. These projections are considered to be somewhat conservative as they do not include the impact of the current loose-in-the street yard material pile collection, or the impact of commercial and roll-off vehicles on the City's street maintenance expenses.⁵

Table 3
Residential Refuse Vehicles Percentage of Total Vehicle Impacts

Vehicle Type	Average ESAL / Vehicle	Passes / Week / Vehicle Type	Percent of Total Vehicle Impacts
Solid Waste Vehicles	1.035	2	5.7%
Recycling Vehicles	0.784	2	4.3%
Organic Material Vehicles	1.035	2	5.7%
Other Trucks	0.189	134	69.3%
Automobiles	0.001	6,860	15.0%
Total		7,000	100%

Refuse Vehicles = **15.6%**

⁵ The impact of commercial refuse vehicles on street maintenance costs are significantly less than that of residential refuse vehicles (typically on the order of 10% or less of the impact of residential refuse vehicles) since they operate on commercial streets that are designed to handle heavier vehicles, and represent a smaller percentage of overall vehicle trips, and trips associated with trucks, which have a significantly greater impact than cars.

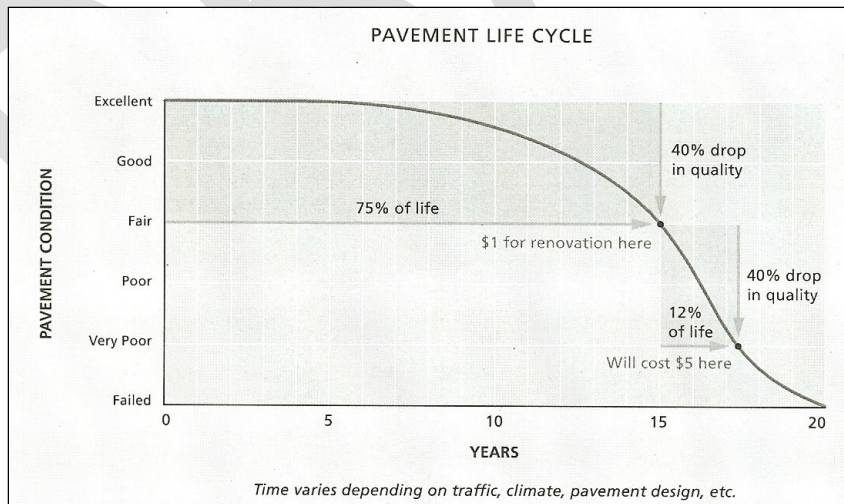
Overview

Road maintenance is based on deterioration. While roads will deteriorate if simply left unused, most deterioration is associated with use, and the damage caused by vehicles increases exponentially with size and weight. Therefore, costs associated with maintenance are greater for trips made by heavy vehicles. A single large truck can cause as much damage as thousands of automobiles, and the configuration of the truck can affect the amount of damage as well. If the load is spread over more axles, there is less weight on each wheel, and damage is reduced.⁶

Refuse Vehicles are typically the heaviest vehicles regularly operating on residential streets and are a significant contributor to the wear-and-tear experienced by those streets. While Refuse Vehicles also contribute to the wear-and-tear on other street types (including arterials and collectors), those streets are designed to a higher standard and experience significantly more vehicle trips and large truck trips than residential streets. As such, the relative impact of a Refuse Vehicle on collector and arterial streets is significantly less than that on residential streets.

The Pavement Condition Index (PCI) is a common unit of measure used to rate the condition of pavements. The PCI rates pavements on a scale of 0 to 100, with a higher value indicating better pavement condition. Rapid deterioration of pavement typically occurs after roadways drop to a PCI of 60 or lower, and studies have shown that every dollar spent performing preventative maintenance on a roadway with a PCI of 70 or higher saves \$4 down the road – it would otherwise cost about \$5 to rehabilitate the same roadway once rapid deterioration occurs⁷ (as shown in Figure 1). Assuring adequate funding for an effective pavement management system is therefore critical to achieving a cost-effective pavement management system.

Figure 1



Source: Metropolitan Transportation Commission

The goal of a pavement management program is to bring all roads up to “good” or “excellent” condition where they can be maintained most cost-effectively. The strategy often recommended is referred to as

⁶ A. Rufolo, *Cost-Based Road Taxation*, Cascade Policy Institute, November 1995.

⁷ J. Gerbracht, *Bay Area Roads Close to “Tipping Point”*, Metropolitan Transportation Commission, Street Talk, March 2006.

the “best first approach”, which concentrates spending initially on routine and preventative maintenance on those roads that are currently in fair to good condition. This extends the useful life of those roads, preventing rapid deterioration. Spending money on routine maintenance now prevents additional spending in the future on more expensive repairs.

Approach

Our approach to projecting Refuse Vehicle street maintenance impacts is based on common principals of pavement design and vehicle loadings. The basic premise is that all vehicles, including Refuse Vehicles, exert an impact on streets that can be quantified. That impact or “vehicle loading” can be 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. By projecting the number and type of vehicles (i.e., cars, trucks, Refuse Vehicles) that travel on a street over its design life, and the average ESAL associated with each vehicle type, the total ESALs that street will experience can be calculated. The relative impact associated with a specific type of vehicle (e.g., Refuse Vehicle) can then be determined based on the percentage of total ESALs attributed to that vehicle type.

Methodology

The methodology used to project street maintenance costs associated with Refuse Vehicles can be summarized as follows:

- The City’s projected changes in its average annual street maintenance budget and the associated average annual changes in the associated deferred maintenance (unfunded backlog) for the two (2) scenarios that were considered were calculated for the period 2017 through 2025 based on the information presented in the City’s April 2016 Pavement Management Program Update Report;
- Fifty percent (50%) of the average annual changes in the street maintenance budget and associated deferred maintenance costs were allocated to residential streets; and
- Fifteen percent (15%) of that portion of those expenses allocated to residential streets was assigned to residential refuse vehicles based on the projected percentage of the total axle loadings a typical residential street experiences that are attributed to residential refuse vehicles.

Major Assumptions

- There is an average of **1,000** vehicle trips per day on a typical residential street, with **2%** of those trips made by trucks, including Refuse Vehicles.⁸
- Residential Refuse Vehicles make **two (2) passes** down a typical residential Street each week to provide service.
- Residential solid waste vehicles were assumed to carry approximately **8.0 tons** fully loaded.
- Residential recycling vehicles were assumed to carry approximately **4.0 tons** fully loaded.
- ESAL loadings for Refuse Vehicles are based on an axle weight analysis using manufactured loaded and unloaded axle weight distributions for representative vehicle types. ESAL values for Other

⁸ If we assumed 4% for trucks the calculated impact would be reduced from \$163,000 to \$96,000.

Trucks and Automobiles are based on data from the American Association of State Highway and Transportation Officials (AASHTO).

Limitations

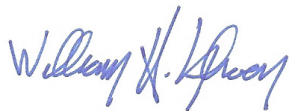
Our analysis is based on a number of underlying assumptions for which reasonable ranges exist (e.g., the average number of vehicle trips and the percentage of those trips made by various vehicle types). Changes to those assumptions may have a material impact on the resulting findings.

* * * * *

We appreciate the opportunity to be of service to the City. Should you have any questions regarding our proposal or need any additional information, please contact me by phone at (916) 782-7821 or by email at wschoen@r3cgi.com.

Sincerely,

R3 CONSULTING GROUP



William Schoen | Principal

Attachment

- 1 Funding Scenarios: Current Budget and Budget Required to Maintain 63 PCI

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Scenario 1A	Current City's Budget (\$1.8 million/year) ⁽¹⁾											Deferred Maintenance Only	Portion of Expenses attributed to Residential Streets	Refuse Vehicle Impact as Percent of Total Vehicle Impacts				
2		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Annual Average							
3	PCI	64	62	61	60	58	57	55	54	52	50								
4	Budget	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ -						
5	Deferred Maintenance	\$ 29,000,000	\$ 31,500,000	\$ 35,600,000	\$ 40,500,000	\$ 46,300,000	\$ 51,400,000	\$ 57,600,000	\$ 64,800,000	\$ 71,400,000	\$ 80,600,000								
6	Annual Change	\$ 2,500,000	\$ 4,100,000	\$ 4,900,000	\$ 5,800,000	\$ 5,100,000	\$ 6,200,000	\$ 7,200,000	\$ 6,600,000	\$ 9,200,000	\$ 5,733,333	\$ 5,733,333							
7	Cumulative Change	\$ 2,500,000	\$ 6,600,000	\$ 11,500,000	\$ 17,300,000	\$ 22,400,000	\$ 28,600,000	\$ 35,800,000	\$ 42,400,000	\$ 51,600,000									
8												Average Annual Total	\$ 7,533,333	\$ 5,733,333	50%	15%			COS Fee
9																			\$ 430,000
10																			Current Environmental Mitigation Fee
11																			\$ 100,000
12	Scenario 2	Maintain PCI at 63 ⁽¹⁾											Deferred Maintenance + Increased Budget						
13		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025								
14	PCI	63	63	63	63	63	63	63	63	63	63								
15	Budget	\$ 1,100,000	\$ 3,000,000	\$ 6,000,000	\$ 5,500,000	\$ 6,000,000	\$ 4,700,000	\$ 5,000,000	\$ 4,500,000	\$ 5,000,000	\$ 6,000,000	\$ 4,680,000	\$ 2,880,000						
16	Deferred Maintenance	\$ 29,600,000	\$ 31,000,000	\$ 30,800,000	\$ 31,900,000	\$ 33,000,000	\$ 34,600,000	\$ 36,300,000	\$ 39,200,000	\$ 39,600,000	\$ 41,100,000								
17	Annual Change	\$ 1,400,000	\$ (200,000)	\$ 1,100,000	\$ 1,100,000	\$ 1,600,000	\$ 1,700,000	\$ 2,900,000	\$ 400,000	\$ 1,500,000	\$ 1,277,778	\$ 1,277,778							
18	Cumulative Change	\$ 1,400,000	\$ 1,200,000	\$ 2,300,000	\$ 3,400,000	\$ 5,000,000	\$ 6,700,000	\$ 9,600,000	\$ 10,000,000	\$ 11,500,000									
19												Average Annual Total	\$ 5,957,778	\$ 4,157,778	50%	15%			COS Fee
20																			\$ 311,833
21																			Current Environmental Mitigation Fee
22																			\$ 100,000
																			COS Fee vs. Current Fee
																			\$ 211,833

⁽¹⁾ Source: City of Davis; Pavement Management Program Update Report, NCE, April 2016

City of Davis Proposed Monthly Rates for Solid Waste Collection Effective January 1, 2019

Commercial and Multi-Family Collection Services

Level of Service	1x per week		2x per week		3x per week		4x per week		5x per week		6x per week
	Mid-Week	Sat	All Mid-Week	1X/Wk + Sat	All Mid-Week	2X/Wk + Sat	All Mid-Week	3X/Wk + Sat	All Mid-Week	4X/Wk + Sat	
Cart											
1	\$75.63	\$80.72	\$136.85	\$144.53	\$205.68	\$213.40	\$277.16	\$287.34	\$348.62	\$366.73	\$393.30
2	\$134.29	\$141.98	\$256.71	\$266.92	\$386.85	\$397.06	\$522.63	\$532.30	\$644.49	\$659.82	\$792.50
3	\$185.28	\$200.60	\$358.75	\$386.86	\$544.96	\$567.93	\$728.62	\$751.62	\$909.75	\$935.26	\$1,106.14
Each Add'l Toter	\$50.72	\$58.38	\$101.79	\$119.67	\$157.87	\$170.65	\$205.71	\$219.09	\$264.97	\$275.18	\$313.43
Yards											
1	\$118.43	\$136.38	\$225.07	\$242.96	\$339.41	\$357.29	\$455.43	\$474.37	\$575.67	\$590.95	\$705.30
1.5	\$161.58	\$182.47	\$301.10	\$318.96	\$468.72	\$489.14	\$628.67	\$646.54	\$780.93	\$798.79	\$966.42
2	\$196.98	\$227.66	\$384.75	\$412.80	\$575.03	\$605.68	\$770.37	\$798.48	\$965.78	\$996.45	\$1,186.85
2.5	\$245.23	\$273.30	\$468.40	\$499.09	\$711.99	\$742.63	\$953.00	\$983.66	\$1,196.78	\$1,227.39	\$1,465.92
3	\$293.42	\$324.09	\$557.16	\$587.78	\$846.43	\$882.11	\$1,140.92	\$1,171.58	\$1,427.59	\$1,460.81	\$1,750.05
4	\$384.75	\$425.60	\$732.12	\$778.09	\$1,112.77	\$1,158.79	\$1,488.28	\$1,531.63	\$1,863.74	\$1,909.66	\$2,371.99
5	\$470.92	\$527.13	\$912.17	\$965.78	\$1,381.64	\$1,437.81	\$1,848.35	\$1,904.59	\$2,310.02	\$2,363.69	\$2,914.75
6	\$562.23	\$628.67	\$1,089.80	\$1,148.57	\$1,650.46	\$1,711.74	\$2,203.44	\$2,267.25	\$2,756.13	\$2,820.24	\$3,460.18
Each Add'l Yard	\$84.56	\$92.21	\$167.42	\$175.31	\$255.51	\$263.14	\$338.40	\$351.18	\$418.77	\$434.09	\$517.03
Each Compacted Yard	\$90.64	\$98.31	\$179.74	\$189.93	\$269.55	\$279.02	\$362.93	\$373.20	\$452.01	\$464.75	\$551.73

Single-Family Collection Services

Level of Service (Garbage Cart)	Standard Weekly
35-gallon	\$35.19
65-gallon	\$38.95
95-gallon	\$46.47
Add'l Garbage Cart	\$5.98

Dropbox

Level of Service	Per Pickup
10 Yards	\$202.51
20 Yards	\$202.51
30 Yards	\$246.81
40 Yards	\$323.06
50 Yards	\$427.70
Customer-owned compactor	\$278.04

Additional Food Scrap Carts (Commercial)

Level of Service	1x per Week	2x per week	3x Per Week	4x Per Week	5x Per Week
1 Cart	\$0.00	\$0.00	\$67.69	\$117.82	\$175.53
Add'l Cart	\$30.50	\$61.01	\$91.50	\$122.00	\$152.50

No Service Per Month

None	\$24.50
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City of Davis Proposed Monthly Rates for Solid Waste Collection Effective January 1, 2020

Commercial and Multi-Family Collection Services

Level of Service	1x per week		2x per week		3x per week		4x per week		5x per week		6x per week
	Mid-Week	Sat	All Mid-Week	1X/Wk + Sat	All Mid-Week	2X/Wk + Sat	All Mid-Week	3X/Wk + Sat	All Mid-Week	4X/Wk + Sat	
Cart											
1	\$83.19	\$88.79	\$150.53	\$158.98	\$226.25	\$234.74	\$304.87	\$316.07	\$383.48	\$403.40	\$432.63
2	\$147.72	\$156.17	\$282.39	\$293.61	\$425.54	\$436.76	\$574.90	\$585.53	\$708.94	\$725.80	\$871.75
3	\$203.81	\$220.66	\$394.63	\$425.55	\$599.45	\$624.72	\$801.49	\$826.78	\$1,000.72	\$1,028.79	\$1,216.75
Each Add'l Toter	\$55.80	\$64.22	\$111.97	\$131.64	\$173.65	\$187.71	\$226.28	\$241.00	\$291.46	\$302.70	\$344.77
Yards											
1	\$130.27	\$150.02	\$247.58	\$267.25	\$373.35	\$393.02	\$500.97	\$521.81	\$633.24	\$650.04	\$775.83
1.5	\$177.74	\$200.72	\$331.21	\$350.85	\$515.59	\$538.05	\$691.53	\$711.20	\$859.02	\$878.67	\$1,063.06
2	\$216.68	\$250.42	\$423.23	\$454.08	\$632.53	\$666.25	\$847.41	\$878.33	\$1,062.36	\$1,096.10	\$1,305.53
2.5	\$269.75	\$300.63	\$515.24	\$549.00	\$783.18	\$816.89	\$1,048.30	\$1,082.03	\$1,316.46	\$1,350.13	\$1,612.51
3	\$322.76	\$356.50	\$612.88	\$646.56	\$931.07	\$970.32	\$1,255.02	\$1,288.74	\$1,570.35	\$1,606.89	\$1,925.05
4	\$423.23	\$468.16	\$805.33	\$855.90	\$1,224.04	\$1,274.67	\$1,637.11	\$1,684.79	\$2,050.11	\$2,100.63	\$2,609.19
5	\$518.02	\$579.84	\$1,003.38	\$1,062.36	\$1,519.80	\$1,581.59	\$2,033.18	\$2,095.05	\$2,541.02	\$2,600.06	\$3,206.22
6	\$618.46	\$691.53	\$1,198.78	\$1,263.43	\$1,815.51	\$1,882.91	\$2,423.79	\$2,493.98	\$3,031.75	\$3,102.26	\$3,806.20
Each Add'l Yard	\$93.01	\$101.43	\$184.17	\$192.84	\$281.06	\$289.45	\$372.24	\$386.30	\$460.65	\$477.50	\$568.73
Each Compacted Yard	\$99.71	\$108.15	\$197.71	\$208.92	\$296.51	\$306.92	\$399.22	\$410.52	\$497.22	\$511.22	\$606.91

Single-Family Collection Services

Level of Service (Garbage Cart)	Standard Weekly
35-gallon	\$38.70
65-gallon	\$42.85
95-gallon	\$51.11
Add'l Garbage Cart	\$6.58

Dropbox

Level of Service	Per Pickup
10 Yards	\$222.76
20 Yards	\$222.76
30 Yards	\$271.49
40 Yards	\$355.36
50 Yards	\$470.47
Customer-owned compactor	\$305.85

Additional Food Scrap Carts (Commercial)

Level of Service	1x per Week	2x per week	3x Per Week	4x Per Week	5x Per Week
1 Cart	\$0.00	\$0.00	\$74.46	\$129.61	\$193.08
Add'l Cart	\$33.55	\$67.11	\$100.65	\$134.20	\$167.75

No Service Per Month

None	\$26.96
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City of Davis Proposed Monthly Rates for Solid Waste Collection Effective January 1, 2021

Commercial and Multi-Family Collection Services

Level of Service	1x per week		2x per week		3x per week		4x per week		5x per week		6x per week
	Mid-Week	Sat	All Mid-Week	1X/Wk + Sat	All Mid-Week	2X/Wk + Sat	All Mid-Week	3X/Wk + Sat	All Mid-Week	4X/Wk + Sat	
Cart											
1	\$89.84	\$95.90	\$162.57	\$171.70	\$244.35	\$253.52	\$329.26	\$341.36	\$414.15	\$435.68	\$467.24
2	\$159.54	\$168.67	\$304.98	\$317.10	\$459.58	\$471.70	\$620.89	\$632.38	\$765.65	\$783.87	\$941.49
3	\$220.11	\$238.31	\$426.20	\$459.60	\$647.41	\$674.70	\$865.61	\$892.92	\$1,080.78	\$1,111.09	\$1,314.09
Each Add'l Toter	\$60.26	\$69.36	\$120.92	\$142.17	\$187.55	\$202.73	\$244.38	\$260.28	\$314.78	\$326.91	\$372.36
Yards											
1	\$140.69	\$162.02	\$267.38	\$288.63	\$403.22	\$424.46	\$541.05	\$563.56	\$683.90	\$702.05	\$837.90
1.5	\$191.96	\$216.78	\$357.71	\$378.92	\$556.84	\$581.10	\$746.85	\$768.09	\$927.74	\$948.96	\$1,148.11
2	\$234.01	\$270.46	\$457.09	\$490.41	\$683.13	\$719.55	\$915.20	\$948.60	\$1,147.35	\$1,183.78	\$1,409.97
2.5	\$291.33	\$324.68	\$556.46	\$592.92	\$845.84	\$882.25	\$1,132.17	\$1,168.59	\$1,421.77	\$1,458.14	\$1,741.51
3	\$348.58	\$385.02	\$661.91	\$698.29	\$1,005.55	\$1,047.95	\$1,355.42	\$1,391.84	\$1,695.98	\$1,735.45	\$2,079.05
4	\$457.09	\$505.62	\$869.76	\$924.37	\$1,321.97	\$1,376.64	\$1,768.08	\$1,819.57	\$2,214.12	\$2,268.68	\$2,817.93
5	\$559.46	\$626.23	\$1,083.65	\$1,147.35	\$1,641.38	\$1,708.11	\$2,195.84	\$2,262.65	\$2,744.30	\$2,808.07	\$3,462.72
6	\$667.93	\$746.85	\$1,294.69	\$1,364.51	\$1,960.75	\$2,033.55	\$2,617.69	\$2,693.50	\$3,274.28	\$3,350.44	\$4,110.70
Each Add'l Yard	\$100.45	\$109.54	\$198.90	\$208.27	\$303.55	\$312.61	\$402.02	\$417.20	\$497.50	\$515.70	\$614.23
Each Compacted Yard	\$107.68	\$116.80	\$213.53	\$225.64	\$320.23	\$331.47	\$431.16	\$443.36	\$536.99	\$552.12	\$655.46

Single-Family Collection Services

Level of Service (Garbage Cart)	Standard Weekly
35-gallon	\$41.80
65-gallon	\$46.28
95-gallon	\$55.20
Add'l Garbage Cart	\$7.11

Dropbox

Level of Service	Per Pickup
10 Yards	\$240.58
20 Yards	\$240.58
30 Yards	\$293.21
40 Yards	\$383.79
50 Yards	\$508.11
Customer-owned compactor	\$330.31

Additional Food Scrap Carts (Commercial)

Level of Service	1x per Week	2x per week	3x Per Week	4x Per Week	5x Per Week
1 Cart	\$0.00	\$0.00	\$80.42	\$139.98	\$208.53
Add'l Cart	\$36.23	\$72.48	\$108.71	\$144.94	\$181.17

No Service Per Month

None	\$29.11
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**City of Davis
Proposed Monthly Rates for Solid Waste Collection
Effective January 1, 2022**

Commercial and Multi-Family Collection Services

Level of Service	1x per week		2x per week		3x per week		4x per week		5x per week		6x per week
	Mid-Week	Sat	All Mid-Week	1X/Wk + Sat	All Mid-Week	2X/Wk + Sat	All Mid-Week	3X/Wk + Sat	All Mid-Week	4X/Wk + Sat	
Cart											
1	\$94.33	\$100.69	\$170.70	\$180.29	\$256.57	\$266.20	\$345.72	\$358.42	\$434.86	\$457.46	\$490.60
2	\$167.52	\$177.10	\$320.23	\$332.95	\$482.56	\$495.29	\$651.93	\$664.00	\$803.93	\$823.06	\$988.57
3	\$231.12	\$250.23	\$447.51	\$482.58	\$679.78	\$708.44	\$908.89	\$937.57	\$1,134.82	\$1,166.65	\$1,379.80
Each Add'l Toter	\$63.27	\$72.83	\$126.97	\$149.28	\$196.92	\$212.87	\$256.60	\$273.29	\$330.52	\$343.26	\$390.97
Yards											
1	\$147.72	\$170.12	\$280.75	\$303.07	\$423.38	\$445.68	\$568.10	\$591.73	\$718.09	\$737.15	\$879.79
1.5	\$201.55	\$227.62	\$375.60	\$397.87	\$584.68	\$610.15	\$784.20	\$806.50	\$974.13	\$996.41	\$1,205.51
2	\$245.71	\$283.98	\$479.94	\$514.93	\$717.29	\$755.53	\$960.96	\$996.03	\$1,204.72	\$1,242.97	\$1,480.47
2.5	\$305.90	\$340.91	\$584.29	\$622.57	\$888.13	\$926.36	\$1,188.78	\$1,227.02	\$1,492.86	\$1,531.05	\$1,828.59
3	\$366.01	\$404.27	\$695.00	\$733.20	\$1,055.83	\$1,100.34	\$1,423.19	\$1,461.43	\$1,780.78	\$1,822.22	\$2,183.01
4	\$479.94	\$530.90	\$913.25	\$970.59	\$1,388.06	\$1,445.47	\$1,856.48	\$1,910.55	\$2,324.83	\$2,382.11	\$2,958.82
5	\$587.43	\$657.54	\$1,137.84	\$1,204.72	\$1,723.45	\$1,793.52	\$2,305.63	\$2,375.78	\$2,881.52	\$2,948.47	\$3,635.86
6	\$701.33	\$784.20	\$1,359.42	\$1,432.73	\$2,058.78	\$2,135.22	\$2,748.58	\$2,828.17	\$3,438.00	\$3,517.96	\$4,316.23
Each Add'l Yard	\$105.48	\$115.02	\$208.84	\$218.68	\$318.72	\$328.24	\$422.12	\$438.06	\$522.37	\$541.49	\$644.94
Each Compacted Yard	\$113.07	\$122.64	\$224.21	\$236.92	\$336.24	\$348.05	\$452.72	\$465.53	\$563.84	\$579.73	\$688.23

Single-Family Collection Services

Level of Service (Garbage Cart)	Standard Weekly
35-gallon	\$43.89
65-gallon	\$48.59
95-gallon	\$57.96
Add'l Garbage Cart	\$7.46

Dropbox

Level of Service	Per Pickup
10 Yards	\$252.61
20 Yards	\$252.61
30 Yards	\$307.87
40 Yards	\$402.98
50 Yards	\$533.52
Customer-owned compactor	\$346.83

Additional Food Scrap Carts (Commercial)

Level of Service	1x per Week	2x per week	3x Per Week	4x Per Week	5x Per Week
1 Cart	\$0.00	\$0.00	\$84.44	\$146.97	\$218.95
Add'l Cart	\$38.04	\$76.10	\$114.14	\$152.18	\$190.23

No Service Per Month

None	\$30.57
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City of Davis Proposed Monthly Rates for Solid Waste Collection Effective January 1, 2023

Commercial and Multi-Family Collection Services

Level of Service	1x per week		2x per week		3x per week		4x per week		5x per week		6x per week
	Mid-Week	Sat	All Mid-Week	1X/Wk + Sat	All Mid-Week	2X/Wk + Sat	All Mid-Week	3X/Wk + Sat	All Mid-Week	4X/Wk + Sat	
Cart											
1	\$99.05	\$105.73	\$179.24	\$189.30	\$269.40	\$279.51	\$363.01	\$376.34	\$456.61	\$480.33	\$515.13
2	\$175.89	\$185.96	\$336.24	\$349.60	\$506.69	\$520.05	\$684.53	\$697.20	\$844.13	\$864.21	\$1,038.00
3	\$242.67	\$262.74	\$469.88	\$506.70	\$713.77	\$743.86	\$954.33	\$984.45	\$1,191.56	\$1,224.98	\$1,448.78
Each Add'l Toter	\$66.44	\$76.47	\$133.32	\$156.75	\$206.77	\$223.51	\$269.43	\$286.96	\$347.04	\$360.42	\$410.52
Yards											
1	\$155.11	\$178.63	\$294.79	\$318.22	\$444.55	\$467.96	\$596.51	\$621.32	\$754.00	\$774.01	\$923.78
1.5	\$211.63	\$239.00	\$394.38	\$417.76	\$613.92	\$640.66	\$823.41	\$846.82	\$1,022.83	\$1,046.23	\$1,265.79
2	\$258.00	\$298.18	\$503.94	\$540.67	\$753.15	\$793.30	\$1,009.01	\$1,045.83	\$1,264.95	\$1,305.12	\$1,554.50
2.5	\$321.19	\$357.96	\$613.50	\$653.70	\$932.54	\$972.68	\$1,248.21	\$1,288.37	\$1,567.50	\$1,607.60	\$1,920.02
3	\$384.31	\$424.48	\$729.75	\$769.86	\$1,108.62	\$1,155.36	\$1,494.35	\$1,534.50	\$1,869.82	\$1,913.33	\$2,292.16
4	\$503.94	\$557.44	\$958.91	\$1,019.12	\$1,457.47	\$1,517.75	\$1,949.30	\$2,006.08	\$2,441.07	\$2,501.22	\$3,106.76
5	\$616.80	\$690.42	\$1,194.73	\$1,264.95	\$1,809.62	\$1,883.20	\$2,420.91	\$2,494.57	\$3,025.60	\$3,095.90	\$3,817.65
6	\$736.40	\$823.41	\$1,427.39	\$1,504.37	\$2,161.72	\$2,241.98	\$2,886.00	\$2,969.58	\$3,609.90	\$3,693.86	\$4,532.04
Each Add'l Yard	\$110.75	\$120.77	\$219.29	\$229.62	\$334.66	\$344.65	\$443.23	\$459.97	\$548.49	\$568.56	\$677.19
Each Compacted Yard	\$118.72	\$128.77	\$235.42	\$248.77	\$353.05	\$365.45	\$475.35	\$488.81	\$592.03	\$608.71	\$722.65

Single-Family Collection Services

Level of Service (Garbage Cart)	Standard Weekly
35-gallon	\$46.08
65-gallon	\$51.02
95-gallon	\$60.86
Add'l Garbage Cart	\$7.83

Dropbox

Level of Service	Per Pickup
10 Yards	\$265.24
20 Yards	\$265.24
30 Yards	\$323.26
40 Yards	\$423.13
50 Yards	\$560.19
Customer-owned compactor	\$364.17

Additional Food Scrap Carts (Commercial)

Level of Service	1x per Week	2x per week	3x Per Week	4x Per Week	5x Per Week
1 Cart	\$0.00	\$0.00	\$88.66	\$154.32	\$229.90
Add'l Cart	\$39.94	\$79.90	\$119.85	\$159.79	\$199.74

No Service Per Month

None	\$32.10
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