RESOLUTION NO. 7219

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS APPROVING THE CITY'S PAVEMENT ACCELERATED REPAIR IMPLEMENTATION STRATEGY ("PARIS") PROGRAM AND AUTHORIZING CERTAIN FUND TRANSFERS AND MAKING FINDINGS AND DETERMINATIONS WITH RESPECT THERETO

WHEREAS, traffic associated with the City's solid waste, water and wastewater enterprise funded vehicles (the "Utility Vehicles") places a significant burden on City streets and is a significant cause of street damage; and

WHEREAS, the City Council finds that unless certain actions are taken, pavement damage caused by Utility Vehicles will result in adverse impacts including accelerated deterioration of pavement conditions on City streets, reduced ride quality, increased vehicle repairs, increased energy consumption and disruption to traffic flow; and

WHEREAS, requiring the City's enterprise funds to pay on an annual basis the costs of damage to City streets directly attributable to the Utility Vehicles will prevent these undesirable consequences, thereby allowing the City to maintain the streets and roads in a good condition and avoid the deterioration of pavement to the point where extensive rehabilitation or reconstruction becomes necessary at a higher cost; and

WHEREAS, the City Council also finds that, in the absence of the City's enterprise funds paying the costs of damage caused to the City streets by the Utility Vehicles, existing and future sources of general fund revenue will be inadequate to fund a substantial portion of pavement repair for the City's streets necessary to avoid unacceptable pavement condition indexes in the City created by Utility Vehicle impacts; and

WHEREAS, accordingly, it is the intent of the City Council to establish by this resolution a fair and equitable method of securing a portion of the funds necessary to repair the damage caused to City streets as a result of Utility Vehicles to preserve acceptable pavement conditions throughout the City; and

WHEREAS, the City has commissioned two independent studies that determined the street repair costs attributable to damage caused by Utility Vehicles is approximately $3,739,500 annually; and

WHEREAS, the City has also commissioned an independent study that determined that the costs for existing street pavement damages attributable to past defective paving patches performed by the water and wastewater departments is approximately $6,240,000; and

WHEREAS, the City Council has considered that independent studies analyzing the cost to repair street damage caused by Utility Vehicles and past defective paving patches; and

WHEREAS, the City Council has determined that the costs incurred by the City for such street repair resulting from Utility Vehicles should be defrayed by the annual transfer of

funds from the City's enterprise funds to the general fund to pay for at least a portion of those costs; and

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Redlands as follows:

Section 1. This City Council approves the findings and determinations of the Pavement Deterioration Analysis Report, dated September 18, 2012, as prepared by TKE Engineering, Inc., a copy of which is attached hereto as Exhibit "A," and authorizes staff to implement the corresponding recommendations of such report.

Section 2. This City Council approves the findings and determinations of the Utility Repair Pavement Restoration Report, dated September 18, 2012, as prepared by TKE Engineering, Inc., a copy of which is attached hereto as Exhibit "B," and authorizes staff to implement the corresponding recommendations of such report.

Section 3. This City Council approves the findings and determinations of the Rates Analysis for Road Impacts report dated August 28, 2012, as prepared by R3 Consulting Group, Inc., a copy of which is attached hereto as Exhibit "C," and authorizes staff to implement the corresponding recommendation of such report.

Section 4. This City Council directs staff to perform a one-time transfer of water and wastewater funds totaling $6.24 million to the City-wide street pavement program to pay the costs of repair of all defective paving patches caused by the City's water and wastewater utility vehicles, as described in the Utility Repair Pavement Restoration Report.

Section 5. This City Council directs staff to transfer and utilize solid waste funds totaling $3.62 million annually, commencing in FY 2012-2013, to the City-wide street paving program to pay for the impacts and damages to City streets caused by the City's solid waste vehicles, as described in the Pavement Deterioration Analysis Report, and the Rates Analysis for Road Impacts report.

Section 6. This City Council authorizes staff to transfer and utilize water funds totaling $102,770 annually, commencing in FY 2012-2013, to the City-wide street paving program to pay for the impacts and damages to City streets caused by the City's water department vehicles, as described in the Pavement Deterioration Analysis Report.

Section 7. This City Council authorizes staff to transfer and utilize wastewater funds totaling $16,730 annually, commencing in FY 2012-2013, to the City-wide street paving program to pay for the impacts and damages to City streets caused by the City's wastewater department vehicles, as described in the Pavement Deterioration Analysis Report.

Section 8. This City Council directs the City Attorney to prepare an ordinance for the City Council's consideration to implement the recommended solid waste rate adjustments set forth in the report necessary to recover the costs associated with damages from solid waste vehicles and for the City staff to issue the required Proposition 218 notice for a public hearing.

Section 9. This City Council directs staff to commence the design of, and to implement, the City-wide repair pavement program utilizing available funds as described and outlined in this Resolution and the Attached reports.

ADOPTED, SIGNED AND APPROVED this 18th day of September, 2012.

_____
Pete Aguilar, Mayor

ATTEST:

_____
Sam Irwin, City Clerk

I, Sam Irwin, City Clerk of the City of Redlands, hereby certify that the foregoing resolution was adopted by the City Council at a regular meeting thereof held on the 18th day of September, 2012, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT: Councilmember Foster

_____
Sam Irwin, City Clerk

EXHIBIT
'A'

City of Redlands

Pavement Deterioration Analysis Report

September 18, 2012

Prepared by:

TKE Engineering, Inc.
2305 Chicago Avenue
Riverside, CA 92507

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Executive Summary

In an effort to determine the approximate pavement deterioration percentage caused by refuse and City utility vehicles, TKE is using a vehicle load factor method developed by the American Association of State Highway and Transportation Officials. Using this method, TKE has calculated typical annual vehicle loads imparted on residential, collector and arterial streets.

The vehicle loading factors for refuse vehicles were averaged between the empty and full load factors to calculate the percent impact. As shown in the tables below, refuse vehicles combine for 56.3% vehicle impact loading on residential streets, 15.5% vehicle impact loading on collector streets and 9.1% vehicle impact loading on arterial streets, while City utility vehicles contribute 1.6% vehicle impact loading on residential streets, 0.9% vehicle impact loading on collector streets and 0.5% vehicle impact loading on arterial streets.

As shown by the percentages, refuse vehicles account for the highest vehicle loading factors regularly operating on residential streets and as such, are the major contributor to residential street deterioration. Due to the higher volume of heavier vehicles on collector and arterial streets, refuse vehicles are a much lower contributor to the deterioration of those streets. The relatively low percentage rates for City utility vehicles are a direct correlation to their low relative traffic volumes and vehicle load factors.

Using the estimated 50 year construction and maintenance costs shown in the tables below for each street type, the relative annualized refuse and City utility vehicle impact cost totals per street mile are $16,500 and $480 for residential streets, $6,300 and $360 for collector streets and $7,000 and $400 for arterial streets. The City of Redlands total street lane miles are as follows, 59% residential (378 lane miles), 20% collector (129 lane miles) and 21% arterial (133 lane miles). Using this information with the vehicle load impact percentages and annualized impact totals per lane mile shown above the annual City wide impact cost is as follows:

Residential streets relative City wide yearly refuse and City utility vehicle construction cost impact total for 378 lane miles at $8,250 and $240 per lane mile is $3,118,500 and $90,720.

Collector streets relative City wide yearly refuse and City utility vehicle construction cost impact total for 129 lane miles at $2,100 and $120 per lane mile is $270,900 and $15,480.

Arterial streets relative City wide yearly refuse and City utility vehicle construction cost impact total for 133 lane miles at $1,750 and $100 per lane mile is $232,750 and $13,300.

Therefore, there is an annualized City wide total of $3,622,150 of street related damage from refuse vehicle impact loads and $119,500 from City utility vehicle impact loads. In addition to the projected road maintenance costs, it is fair to assume that a percentage of pothole repair costs equal to the impact percentages would be attributed to the corresponding vehicle type.

Introduction

In an effort to determine the approximate pavement deterioration percentage caused by refuse and City utility vehicles, the City of Redlands has consulted with TKE Engineering, Inc. to perform a pavement analysis report. The report will identify the estimated amount of yearly maintenance cost attributed to refuse and City utility vehicles traveling on City streets and will provide a means of visualizing and understanding how the heavy loads affect the streets service life.

Background

Over the past 70 years, the design of paved driving surfaces has evolved through a number of formulas derived from experimental test procedures. Today, engineers have an extensive knowledge and understanding on exactly how pavement surfaces react to the daily stresses they are subjected to. When designing asphalt pavement streets two major factors are considered; (1) the strength of the underlying soil and (2) the degree of traffic loading the street will be subjected to, also called the "Traffic Index" or "TI".

The strength of the underlying soil is tested by a Geotechnical Engineer and will determine the thickness of the overall pavement section required to support the traffic loads expected for each street. A pavement section is comprised of the asphalt concrete pavement and aggregate base subgrade that is placed beneath the asphalt concrete pavement and above the underlying soil. The weaker the underlying soil is on a specific street, the greater the overall thickness of aggregate base subgrade and asphalt concrete pavement will need to be.

Traffic loading represents the weight that a vehicle applies to the pavement surface and how often that weight is applied based on the number of axels the vehicle contains. Since the configuration and weight of vehicles traveling on the streets varies so drastically, the American Association of State Highway and Transportation Officials (AASHTO) and other research and regulatory agencies have developed a method to represent all vehicles in a similar manner called the Equivalent Single Axle Load (ESAL). The Traffic Index formula utilizes a design number of ESAL's a street is expected to handle and converts

it to a usable number for the design of the pavement section. The higher the TI value, the greater number of ESAL's the street was designed to withstand.

ESAL represents the damaging effect of an axle of any mass can be represented by a number of 18,000 pound equivalent axle loads. For example, one application of a 12,000 pound single axle was found to cause damage equal to approximately 0.23 applications of an 18,000 pound single axle load. Therefore, the 18,000 pound single axle load causes 4 times the damage as a 12,000 pound single axle load. In fact, for a load that is twice as large as an initial load, the damage to the roadway is roughly 16 times greater.

Using the ESAL method, AASHTO has developed a table identifying typical vehicle load factors (VLF's) and the relative damage the vehicle impart on a roadway. Using the table from Appendix D of the 1993 AASHTO Guide for Design of Pavement Structures we find the following values:

Vehicle	VLF	Passenger Car Equivalent
Passenger Car (Assumed Base Line)	0.0004	1
Pre-Mix 7 yd^3 Concrete Truck	1.84	4,600
Pre-Mix 10 yd^3 Concrete Truck	2.03	5,100
Standard Delivery Truck	0.50	1,250
Residential Refuse Garbage Truck (Empty)	2.01	5,000
Residential Refuse Garbage Truck (Full)	4.71	11,800
Residential Recycle Garbage Truck (Empty)	1.20	3,000
Residential Recycle Garbage Truck (Full)	2.82	7,000
Residential Green Garbage Truck (Empty)	1.70	4,200
Residential Green Garbage Truck (Full)	3.99	10,000
Utility Vehicle	0.50	1,250
City Bus	3.49	8,700
School Bus	2.98	7,500
Fire Truck	0.68	1,700

The above table depicts the relative and disproportionate amount of damage a single heavy vehicle can impart on the roadway in relation to a passenger vehicle.

Approach

Using the accepted vehicle loading factors developed by AASHTO, TKE has calculated typical annual vehicle loads imparted on residential, collector and arterial streets. It is assumed that streets will see similar vehicular traffic on a weekly basis due routine patterns within society. Therefore, weekly percentages of vehicle impact loading will also reflect accurate yearly percentages which can be used to calculate related street construction and maintenances costs. Our calculations are based on the following estimated traffic volumes.

Residential streets will have volumes of approximately 200 passenger vehicles per day, one refuse, recycle, and greenwaste trash truck each per week, one City Utility vehicle every other week and 12 standard delivery trucks per week.

Collector streets will have volumes of approximately 2,000 passenger vehicles per day, three refuse, recycle, and greenwaste trash truck each per week, 60 standard delivery trucks per week, 3 City Utility vehicles per week, 2 fire trucks per week, 14 City buses per week, 10 school buses per week and 14 commercial trucks per week.

Arterial streets will have volumes of approximately 12,000 passenger vehicles per day, ten refuse, recycle, and greenwaste trash truck each per week, 200 standard delivery trucks per week, 10 City Utility vehicles per week, 20 fire trucks per week, 50 City buses per week, 50 school buses per week and 200 commercial trucks per week.

The relative vehicle loading factors for refuse vehicles were averaged between the empty and full load factors to calculate the percent impact. As shown in the tables below, refuse vehicles combine for 56.3% vehicle impact loading on residential streets, 15.5% vehicle impact loading on collector streets and 9.1% vehicle impact loading on arterial streets, while City utility vehicles contribute 1.6% vehicle impact loading on residential streets, 0.9%

vehicle impact loading on collector streets and 0.5% vehicle impact loading on arterial streets.

As shown by the percentages, refuse vehicles account for the highest vehicle loading factors regularly operating on residential streets and as such are the major contributor to residential street deterioration. Due to the higher volume of heavier vehicles on collector and arterial streets, refuse vehicles are a much lower contributor to the deterioration of those streets. The relatively low percentage rates for City utility vehicles are a direct correlation to their low relative traffic volumes and vehicle load factors.

DRAFT

Residential Streets

Vehicle Type	Vehicle Load Factor	Weekly Vehicle Total	Total Weekly Impact	Percent Impact	Total
Passenger Vehicle	0.0004	1400	0.56	3.6%	-
Refuse	3.36	1	3.36	**21.6%**	
Recycle	2.42	1	2.42	**15.5%**	**56.3%**
Greenwaste	3.00	1	3.00	**19.2%**	
Delivery Truck	0.50	12	6.00	38.5%	-
City Utility Vehicle	0.50	0.5	0.25	**1.6%**	-
City Bus	2.98	0	0.00	0.0%	-
School Bus	3.49	0	0.00	0.0%	-
Fire Truck	0.68	0	0.00	0.0%	-
Commercial Truck	2.03	0	0.00	0.0%	-
			15.59	100.0%	-

Collector Streets

Vehicle Type	Vehicle Load Factor	Weekly Vehicle Total	Total Weekly Impact	Percent Impact	Total
Passenger Vehicle	0.0004	14000	5.60	3.3%	-
Refuse	3.36	3	10.08	**5.9%**	
Recycle	2.42	3	7.25	**4.3%**	**15.5%**
Greenwaste	3.00	3	9.00	**5.3%**	
Delivery Truck	0.50	60	30.00	17.7%	-
City Utility Vehicle	0.50	3	1.50	**0.9%**	-
City Bus	2.98	14	41.72	24.6%	-
School Bus	3.49	10	34.90	20.6%	-
Fire Truck	0.68	2	1.36	0.8%	-
Commercial Truck	2.03	14	28.42	16.7%	-
			169.83	100.0%	-

Arterial Streets

Vehicle Type	Vehicle Load Factor	Weekly Vehicle Total	Total Weekly Impact	Percent Impact	Total
Passenger Vehicle	0.0004	84000	33.60	3.5%	-
Refuse	3.36	10	33.60	**3.5%**	
Recycle	2.42	10	24.15	**2.5%**	**9.1%**
Greenwaste	3.00	10	30.00	**3.1%**	
Delivery Truck	0.50	200	100.00	10.3%	-
City Utility Vehicle	0.50	10	5.00	**0.5%**	-
City Bus	2.98	50	149.00	15.4%	-
School Bus	3.49	50	174.50	18.0%	-
Fire Truck	0.68	20	13.60	1.4%	-
Commercial Truck	2.03	200	406.00	41.9%	-
			969.45	100.0%	-

Construction and maintenance costs for each street type have considerable differences. In general, residential streets are not as wide and are designed with smaller pavement sections resulting in lower cost per paved mile of roadway, while collector and especially arterial streets result in much higher cost per paved mile. To estimate construction and maintenance costs we have assumed the following design standards for each street type.

Residential streets are 36-feet wide with a pavement section of 3-inches of asphalt concrete pavement over 4-inches of crushed aggregate base.

Collector streets are 40-feet wide with a pavement section of 4-inches of asphalt concrete pavement over 5-inches of crushed aggregate base.

Arterial streets are 64-feet wide with a pavement section of 5-inches of asphalt concrete pavement over 6-inches of crushed aggregate base.

In the tables below, we have shown typical construction and maintenance pavement costs for each street type over a typical replacement life expectancy period of 50 years. The tables include construction costs breakdowns with item descriptions, units, quantities, unit costs and totals for each street type, including street construction (year 1), street slurry maintenance (year 15), street overlay reconstruction (year 30), street slurry maintenance (year 40) and full street reconstruction (year 50). The costs are calculated using a 2012 cost baseline with no assumed inflation and are shown per linear mile of full street width.

For streets that are not properly maintained, additional street maintenance will be required in the form of pothole repair. Pothole repair costs would also be attributed at percentage rates equal to those described in the impact tables above. Therefore, 56.3% of the City's annual pothole repair costs on residential streets would be attributed to refuse vehicles.

Residential Streets 36-Foot Width

Description	Unit	Quantity	Unit Cost	Total
Construction (Year 1)				
Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
Asphalt Pavement	Tons	3369	$ 85.00	$ 286,334.40
Aggregate Base	CY	2295	$ 55.00	$ 126,198.52
Striping	LS	1	$ 10,000.00	$ 10,000.00
			Subtotal:	**$ 432,532.92**
Maintenance (Year 15)				
Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
Asphalt Pavement Slurry	SF	168960	$ 0.40	$ 67,584.00
Striping	LS	1	$ 10,000.00	$ 10,000.00
			Subtotal:	**$ 87,584.00**
Maintenance (Year 30)				
Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
Asphalt Pavement Grind	SF	168960	$ 0.50	$ 84,480.00
Asphalt Pavement Overlay	Tons	1684	$ 85.00	$ 143,167.20
Striping	LS	1	$ 10,000.00	$ 10,000.00
			Subtotal:	**$ 247,647.20**
Maintenance (Year 40)				
Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
Asphalt Pavement Slurry	SF	168960	$ 0.40	$ 67,584.00
Striping	LS	1	$ 10,000.00	$ 10,000.00
			Subtotal:	**$ 87,584.00**
Maintenance (Year 50)				
Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
Asphalt Pavement Grind	SF	168960	$ 1.00	$ 168,960.00
Asphalt Pavement	Tons	3369	$ 85.00	$ 286,334.40
Aggregate Base	CY	2295	$ 55.00	$ 126,198.52
Striping	LS	1	$ 10,000.00	$ 10,000.00
			Subtotal:	**$ 601,492.92**
			Total:	**$ 1,460,000.00**
			Refuse Impact Total (56.3%):	**$ 823,000.00**
			Annualized Refuse Impact Total:	**$ 16,500.00**
			City Utility Vehicle Impact Total (1.6%):	**$ 24,000.00**
			Annualized City Utility Vehicle Impact Total:	**$ 480.00**

Collector Streets 40-Foot Width

Description	Unit	Quantity	Unit Cost	Total
Construction (Year 1)				
Traffic Control	LS	1	$ 20,000.00	$ 20,000.00
Asphalt Pavement	Tons	5053	$ 85.00	$ 429,501.60
Aggregate Base	CY	3227	$ 55.00	$ 177,466.67
Striping	LS	1	$ 20,000.00	$ 20,000.00
			Subtotal:	**$ 646,968.27**
Maintenance (Year 15)				
Traffic Control	LS	1	$ 20,000.00	$ 20,000.00
Asphalt Pavement Slurry	SF	190080	$ 0.40	$ 76,032.00
Striping	LS	1	$ 20,000.00	$ 20,000.00
			Subtotal:	**$ 116,032.00**
Maintenance (Year 30)				
Traffic Control	LS	1	$ 20,000.00	$ 20,000.00
Asphalt Pavement Grind	SF	190080	$ 0.50	$ 95,040.00
Asphalt Pavement Overlay	Tons	1895	$ 85.00	$ 161,063.10
Striping	LS	1	$ 20,000.00	$ 20,000.00
			Subtotal:	**$ 296,103.10**
Maintenance (Year 40)				
Traffic Control	LS	1	$ 20,000.00	$ 20,000.00
Asphalt Pavement Slurry	SF	190080	$ 0.40	$ 76,032.00
Striping	LS	1	$ 20,000.00	$ 20,000.00
			Subtotal:	**$ 116,032.00**
Maintenance (Year 50)				
Traffic Control	LS	1	$ 20,000.00	$ 20,000.00
Asphalt Pavement Grind	SF	190080	$ 1.00	$ 190,080.00
Asphalt Pavement	Tons	5053	$ 85.00	$ 429,501.60
Aggregate Base	CY	3227	$ 55.00	$ 177,466.67
Striping	LS	1	$ 20,000.00	$ 20,000.00
			Subtotal:	**$ 837,048.27**
			Total:	**$ 2,020,000.00**
			Refuse Impact Total (15.5%):	**$ 314,000.00**
			Annualized Refuse Impact Total:	**$ 6,300.00**
			City Utility Vehicle Impact Total (0.9%):	**$ 18,000.00**
			Annualized City Utility Vehicle Impact Total:	**$ 360.00**

Arterial Streets 64-Foot Width

Description	Unit	Quantity	Unit Cost	Total
Construction (Year 1)				
Traffic Control	LS	1	$ 25,000.00	$ 25,000.00
Asphalt Pavement	Tons	10527	$ 85.00	$ 894,795.00
Aggregate Base	CY	6453	$ 55.00	$ 354,933.33
Striping	LS	1	$ 40,000.00	$ 40,000.00
			Subtotal:	**$ 1,314,728.33**
Maintenance (Year 15)				
Traffic Control	LS	1	$ 25,000.00	$ 25,000.00
Asphalt Pavement Slurry	SF	316800	$ 0.40	$ 126,720.00
Striping	LS	1	$ 40,000.00	$ 40,000.00
			Subtotal:	**$ 191,720.00**
Maintenance (Year 30)				
Traffic Control	LS	1	$ 25,000.00	$ 25,000.00
Asphalt Pavement Grind	SF	316800	$ 0.50	$ 158,400.00
Asphalt Pavement Overlay	Tons	3158	$ 85.00	$ 268,438.50
Striping	LS	1	$ 40,000.00	$ 40,000.00
			Subtotal:	**$ 491,838.50**
Maintenance (Year 40)				
Traffic Control	LS	1	$ 25,000.00	$ 25,000.00
Asphalt Pavement Slurry	SF	316800	$ 0.40	$ 126,720.00
Striping	LS	1	$ 40,000.00	$ 40,000.00
			Subtotal:	**$ 191,720.00**
Maintenance (Year 50)				
Traffic Control	LS	1	$ 25,000.00	$ 25,000.00
Asphalt Pavement Grind	SF	316800	$ 1.00	$ 316,800.00
Asphalt Pavement	Tons	10527	$ 85.00	$ 894,795.00
Aggregate Base	CY	6453	$ 55.00	$ 354,933.33
Striping	LS	1	$ 40,000.00	$ 40,000.00
			Subtotal:	**$ 1,631,528.33**
			Total:	**$ 3,830,000.00**
			Refuse Impact Total (9.1%):	**$ 347,000.00**
			Annualized Refuse Impact Total:	**$ 7,000.00**
			City Utility Vehicle Impact Total (0.5%):	**$ 20,000.00**
			Annualized City Utility Vehicle Impact Total:	**$ 400.00**

Conclusion

Using the estimated 50 year construction and maintenance costs shown in the tables below for each street type, the relative annualized refuse and City utility vehicle impact cost totals per street mile are $16,500 and $480 for residential streets, $6,300 and $360 for collector streets and $7,000 and $400 for arterial streets. The City of Redlands total street lane miles are as follows, 59% residential (378 lane miles), 20% collector (129 lane miles) and 21% arterial (133 lane miles). Using this information with the vehicle load impact percentages and annualized impact totals per lane mile shown above the annual City wide impact cost is as follows:

Annual City Wide Refuse Impact

Lane Type	Number of Lanes	Lane Miles	Refuse Impact Annualized	Refuse Impact per Lane Mile	Annual City Wide Impact
Residential	2[1]	378	$16,500	$8,250	$3,118,500
Collector	3[2]	129	$6,300	$2,100	$270,900
Arterial	4[3]	133	$7,000	$1,750	$232,750
				Total:	**$3,622,150**

Annual City Wide City Utility Vehicle Impact

Lane Type	Number of Lanes	Lane Miles	City Utility Impact Annualized	City Utility Impact per Lane Mile	Annual City Wide Impact
Residential	2[1]	378	$480	$240	$90,720
Collector	3[2]	129	$360	$120	$15,480
Arterial	4[3]	133	$400	$100	$13,300
				Total:	**$119,500**

Notes:

1. Per City staff, residential streets typically have two-lanes per mile with an average width of 36-feet.
2. Per City staff, collector streets typically have two-lanes or four-lanes per mile with an average width of 40-feet. An average of three-lanes per mile was used.
3. Per City staff, arterial streets typically have four-lanes or six-lanes per mile with an average width of 64-feet. An average of four-lanes per mile was used.

Therefore, there is an annualized City wide total of $3,622,150 of street related damage from refuse vehicle impact loads and $119,500 from City utility vehicle impact loads. In addition to the projected road maintenance costs, it is fair to assume that a percentage of pothole repair costs equal to the impact percentages would be attributed to the corresponding vehicle type.

EXHIBIT
"B"

City of Redlands

Utility Repair Pavement Restoration Report

September 18, 2012

Prepared by:

TKE Engineering, Inc.
2305 Chicago Avenue
Riverside, CA 92507

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Executive Summary

In an effort to determine the approximate pavement restoration required from street damage due to utility vehicles and pothole repairs, the City of Redlands has consulted with TKE Engineering, Inc. (TKE) to perform a pavement restoration report. The report assumes the City will properly repair all asphalt pavement associated with utility repair work and therefore no annual costs will be associated with future repair work.

The City's water and sewer utility operations divisions are responsible for repairing existing damaged or faulty utility infrastructure. Over the past 15 years, the City utility crews have been providing temporary asphalt pavement repairs only. With the City utility crews making hundreds of estimated utility repairs annually, extremely large areas of temporary pavement patches require permanent repair throughout the City.

Also, as part of the City's efforts to keep city streets in good operating condition, City crews from the Quality of Life (QOL) department are dispatched to repair and maintain potholes. The QOL street repair work is currently funded through the City's general fund.

Based on the eRoad data and field verified inspections, 593,880 square feet of temporary patches are associated with the City water and sewer utility departments. The eRoad data also identified that the average patch size is 59 square feet. Given these figures it is estimated that approximately 10,066 temporary pavement patches associated to City water and sewer utility repairs exist.

Using recent bids costs received for a patch of this size, the cost per patch is estimated at $620, resulting in a cost per square foot of $10.50. At a cost of $10.50 per square foot for 593,880 square feet of temporary patch, a total cost of $6.24 million dollars would be required to repair the existing, City responsible, temporary pavement patches.

As the utility department has not fulfilled its obligation of making permanent asphalt pavement repairs over the past years, it is acceptable for the utility department to fund the pavement program to an equivalent level of the pavement repair costs. One approach to funding this obligation could be to allocate funds allually over a set term until the obligation is fulfilled.

Based on a 10 year repayment period scenario and the assumption that the City utility crews begin permanent asphalt pavement repairs on all future utility repairs, the water utilities should fund $508,000 and sewer utilities should fund $116,000, each year for the next 10 years, totaling $624,000 annually.

In order to appropriately allocate the cost of the pothole work done by QOL, a link must be formed with departmental vehicle use and overall street damage. By utilizing the figures derived in TKE's "Pavement Deterioration Analysis Report" we obtain the weighted average for all damage throughout the City attributable to solid waste and utilities is 38.3 percent and 1.2 percent, respectively.

In City fiscal year 2012, QOL is budgeted to spend approximately $195,000 to repair potholes throughout the City. Given these expenses, the general fund should be reimbursed in the amount of $74,700 (38.3%) from the solid waste department, $1,950 (1.0%) from the water utility department, and $390 (0.2%) from the sewer utility department. To ensure the appropriate funds are collected and the general fund is properly reimbursed for pothole repair work, it is recommended that a budget be established each year and reconciled at the year end.

Introduction

In an effort to determine the approximate pavement restoration required from street damage due to utility vehicles and pothole repairs, the City of Redlands has consulted with TKE Engineering, Inc. (TKE) to perform a pavement restoration report. All data for the report was researched and collected by City staff. The report will identify the estimated amount of pavement that was improperly repaired and the pavement repair cost attributed to utility repair work. The report assumes the City will properly repair all asphalt pavement associated with utility repair work and therefore no annual costs will be associated with future repair work.

The report will identify overall City costs spent on pothole repair and will link overall street damage to determine each department's attributable percentage.

Background

The City's water and sewer utility operations divisions are responsible for repairing existing damaged or faulty utility infrastructure. The infrastructure repairs require the City crews to sawcut and remove the existing asphalt concrete pavement in order to perform the utility repairs. Upon completion of a utility repair, there are two types of typical pavement repair. The first is the utility crew can provide a permanent repair by creating a clean sawcut removal area, compacting the subgrade to 95% relative compaction and placing hot mix asphalt concrete pavement to a section 1" thicker than the existing pavement section. The second method would be the utility crew provides a temporary asphalt concrete pavement patch (typically cold mix) then hires a paving contractor to provide the same permanent repairs once enough temporary patches exist to be cost effective.

Over the past 15 years, the City utility crews have been providing temporary asphalt pavement repairs only. With the City utility crews making hundreds of estimated utility repairs annually, extremely large areas of temporary pavement patches require permanent repair throughout the City. With the assistance of City staff, TKE has investigated various methods to estimate the required area of permanent pavement repair and an associated cost.

Also as part of the City's efforts to keep city streets in good operating condition, City crews from the Quality of Life (QOL) department are

dispatched to repair and maintain potholes. The QOL street repair work is currently funded through the City's general fund.

Approach

To determine the existing area of temporary patches still requiring permanent repair, City staff made several attempts to identify an accurate method of estimating the existing temporary patch areas. First, data was collected from past utility repairs made by City crews. Unfortunately this approach did not yield tangible results as all available sources of data were severely incomplete.

City staff also researched the Underground Service Alerts (USA) tickets. When a utility repair is required on any underground facility, USA must be called to allow all utility companies the opportunity to delineate their facilities. USA requires an exact area be defined for each call to ensure other utility companies mark their facilities in the area to be excavated. Unfortunately, USA does not retain records as far back as required for the purposes of this report.

Finally, the pavement condition assessment performed by eRoad was examined. The eRoad database maintained by the City's GIS department contains information related to patches of all street segments throughout the City. The eRoad database lists streets that contain patches and the percentage of each street segment that is a patched section. However, the data does not detail which agency is responsible for each patch. To determine ownership of each patch in the eRoad database, field inspections were conducted. City staff inspected 24 streets at random and determinations were made as to the ownership of each patch. These inspections revealed 30.3 percent of the existing patches in the City are a result of the City's water and sewer operations. Of those, 81.4 percent are attributable to water utility repairs and 18.6 percent are attributable to sewer utility repairs.

Based on the eRoad data there are 1.96 million square feet of existing temporary pavement patches in the City. Using the percentages above, 593,880 square feet of temporary patches are associated with the City water and sewer utility departments. The eRoad data also identified that the average patch size is 59 square feet. Given these figures it is estimated that approximately 10,066 temporary pavement patches associated to City water

and sewer utility repairs exist. These results appear to be reasonable given the City utility crews makes approximately 700 repairs annually.

Using recent bids costs received for a patch of this size, the cost per patch is estimated at $620, resulting in a cost per square foot of $10.50. At a cost of $10.50 per square foot for 593,880 square feet of temporary patch, a total cost of $6.24 million dollars would be required to repair the existing, City responsible, temporary pavement patches.

In order to appropriately allocate the cost of the pothole work done by QOL, a link must be formed with departmental vehicle use and overall street damage. To accomplish this, we reviewed the findings in an analysis performed by TKE titled "Pavement Deterioration Analysis Report" (Report). The Report consists of allocating the damage to City streets by City vehicles. In particular, solid waste and utility vehicles were identified as their impact has a detrimental and cumulative effect, specifically due to their weight.

The Report identifies the following damage allocations caused by City vehicles to the three different types of streets.

Solid Waste Vehicles
- 56.3% of the damage to residential streets (378 lane miles)
- 15.5% of the damage to collector streets (129 lane miles)
- 9.1% of the damage to arterial streets (133 lane miles)

Utility Vehicles
- 1.6% of the damage to residential streets (378 lane miles)
- 0.9% of the damage to collector streets (129 lane miles)
- 0.5% of the damage to arterial streets (133 lane miles)

Based on the number of lane miles of each street type, the weighted average for all damage throughout the City attributable to solid waste and utilities is 38.3 percent and 1.2 percent, respectively. Furthermore, the individual water and wastewater utilities damage can be determined based on the assumption that there is at any one time 7 utility vehicles in operation, 6 of them are in the water utility and one in the sewer utility. Therefore, the water utility is responsible for 1 percent of street damage and the sewer utility is responsible for 0.2 percent. Although this report's focus is on street damage, the Report recognizes and states "In addition to the projected road maintenance costs, it is fare to assume that a percentage of

pothole repairs costs equal to the impact percentage would be attributed to the corresponding vehicle type."

Conclusion

There are two options for making the necessary street repairs. The first is to have the City utility crews make the repairs to each patch. The second option is to fund the paving program at an equivalent amount of the current unrepaired temporary patches. This option allows funding to be utilized in a systematic and the most effective way using the city's Pavement Management Program.

In order for the City utility departments to contribute funds to the paving program a nexus between utility activities and the payment being made to the pavement program must exist. This is required as utility funds can only be used to support utility work and the utility department can only charge for the cost of the services provided to its customers. As the utility department has not fulfilled its obligation of making permanent asphalt pavement repairs over the past years, it is acceptable for the utility department to fund the pavement program to an equivalent level of the pavement repair costs.

Since the City's utilities may not have the resources to completely fund its obligation in a single year. It is recommended funds be allocated annually in multiple years consistent with the avaliablility of funds.

Annualized Allocation from
Utility Departments to Pavement Program
(Assuming costs are amortized over a 10 year term)

Utility Department	Responsible Percentage	Pavement Repair Area (SF)	Repair Cost* (per SF)	Total Repair Cost	Annual Allocation (10 Yr)
Water	81.4%	483418	$ 10.50	$ 5,075,892	**$ 507,589**
Sewer	18.6%	110462	$ 10.50	$ 1,159,847	**$ 115,984**
Total:	**100%**	**593880**	**$ 10.50**	**$ 6,235,740**	**$ 623,574**

* Includes soft costs

As shown in the above table, based on a 10 year repayment period and the assumption that the City utility crews begin permanent asphalt pavement repairs on all future utility repairs, the water utilities should fund $508,000

and sewer utilities should fund $116,000, each year for the next 10 years, totaling $624,000 annually.

In City fiscal year 2012, QOL is budgeted to spend approximately $195,000 to repair potholes throughout the City. Given these expenses, the general fund should be reimbursed in the amount of $74,700 (38.3%) from the solid waste department, $1,950 (1.0%) from the water utility department, and $390 (0.2%) from the sewer utility department. To ensure the appropriate funds are collected and the general fund is properly reimbursed for pothole repair work, it is recommended that a budget be established each year and reconciled at the year end.

EXHIBIT "C"

R3 Consulting Group, Inc.
Resources Respect Responsibility

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August 28, 2012

Mr. Chris Diggs
Assistant Utilities Director
35 Cajon Street, Suite 15A
Redlands, CA 92373

Subject: Rates Analysis for Road Impacts

Dear Mr. Diggs:

R3 Consulting Group, Inc. (R3) was engaged by the City of Redlands (City) to conduct a high-level analysis to determine the solid waste rate adjustment necessary to cover the cost of the increased annual interfund transfer for road impact being assessed on the City's Solid Waste Department (Department). As part of this engagement, R3 also conducted a targeted rate survey to compare the City's current and potential rates to the current solid waste rates of neighboring jurisdictions.

Summary Findings

Using documents provided by the City, R3 calculated the rate adjustment required to generate revenue to cover the cost for increasing the annual interfund transfer for road impact to $4,511,150[1] from its current amount of $105,000 (i.e., increase of $4,406,150). Both of the rate adjustment options summarized below provide sufficient additional revenues to allow the City to borrow $21.5 million and meet a minimum of 1.5 level of debt service coverage.

Option 1: Implement one rate adjustment to cover the cost of the increased interfund transfer for road impact in one year (i.e., increase the Road Impact Fee by $4,406,150 starting in FY 2012/13).

- Required Rate Increase: 38.11% for FY 2012/13.
- Rate Impact: The City's residential rates would be greater than the average of surveyed jurisdictions, and the City's commercial rates would be higher in most cases than the average of surveyed jurisdictions.

Option 2: Implement phased rate adjustments over the next three years to cover the increased interfund transfer for road impacts (i.e., increase the interfund transfer by $4,406,150 over the next three fiscal years).

- Required Rate Increases: 11.01% for FY 2012/13, 11.49% for FY 2013/14, and 11.59% for FY 2014/15.
- Rate Impact: With the first year's rate adjustment (11.01% for FY 2012/13), the City's residential rates would remain comparable to those of

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[1] This amount represents the Solid Waste Department's annual contribution to pavement related costs as reported in the City's Road Impact Nexus Report ($3,611,150). Additionally, $900,000 is added to this amount to account for costs associated with engineering, inspection, and administrative costs.

surveyed jurisdictions, and the City's commercial rates would remain lower in most cases than the average of surveyed jurisdictions. However, after both years of phased rate increases, the City's residential and commercial rates would be equal to the rates as increased by ***Option 1*** (i.e., rates would be greater in most cases than the average of surveyed jurisdictions).

Methodology

To determine the solid waste rate increase required to compensate for the City's proposed increased annual interfund transfer for road impact, R3 reviewed the following documents provided by the City:

- The "City of Redlands City Manager's FY 2012-13 Proposed Budget," dated June 7, 2012; and
- The City's current solid waste rate sheet.

In calculating the required rate adjustments, R3 made the following assumptions:

- Projected Department revenues for FY 2012/13, as shown by the Budget's 2012-13 City Manager Recommendations, are equal to:
  - $9,800,000 in rate revenues; and
  - $525,000 in other (i.e., non-rate) revenues;
- Projected Department expenses for FY 2012/13, as shown by the Budget's 2012-13 City Manager Recommendations, are equal to $9,654,198; and
- The proposed change to the interfund transfer for road impact will increase the fee to $4,511,150 from its current value of $105,000. This is equal to an effective net interfund transfer increase of $4,406,150;

For purposes of this analysis, R3 did not account for any changes to Department revenues and expenses over the next two fiscal years, with the exception of any increases to Department rate revenues incurred by the calculated rate increases.

R3 also assumed that the projected Department surplus of $671,002 (as projected by the City Manager's Recommended Budget) would be available to partially offset any increases to the interfund transfer. If, however, this projected surplus is used to fund the Department's reserve account, and is not used to help offset the increased interfund transfer, R3's projected rate adjustment options for FY 2012/13 would increase by approximately 6.85%.

Additionally, R3 assumed that the City would not begin debt service payments until one year after the time of the first rate adjustment. This would allow the additional rate revenues received in the first year of the rate increase to be set aside to help fund the 1.5 debt service coverage requirement in following years.[2]

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[2] R3 assumed annual debt service payments of $2,659,664, per email correspondence with Chris Diggs, 8/27/2012. This would require additional available revenue of $3,989,496 to meet the 1.5 debt service coverage requirement.

Rate Adjustments

Given the assumptions noted above, Table 1 (below) shows the options for potential rate adjustments. The two options are based on our understanding that the City may choose to phase in the interfund transfer increase over more than one year.

As shown in Table 1, before any increases to the interfund transfer for road impact, the Department is projected to collect total revenues of $10,325,200 and incur total expenses of $9,654,198 for FY 2012/13. This is equal to a revenue surplus of $671,002.

Option 1 increases the interfund transfer from $105,000 to $4,511,150 in one year, requiring a rate increase of 38.11% for FY 2012/13.

Option 2 increases the interfund transfer from $105,000 to $4,511,150 over three years, requiring rate increases as follows:

- A rate increase of 11.01% to increase the interfund transfer by $1,750,000 to $1,855,000 in FY 2012/13;
- A rate increase of 11.49% to further increase the interfund transfer to $3,105,000 in FY 2013/14; and
- A rate increase of 11.59% to further increase the interfund transfer to $4,511,150 in FY 2014/15.

It should be noted that the solid waste collection rates resulting from the ***Option 1*** rate adjustment would be equal to the collection rates resulting from two years of phased rate adjustments as outlined by ***Option 2***.

TABLE 1
Rate Adjustment Options

	OPTION 1	OPTION 2		
REVENUE	Year 1	Year 1	Year 2	Year 3
Temp/Roll-off Debris Box Rate Revenue [1]	$ 1,000,000	$ 1,000,000	$ 1,110,102	$ 1,237,653
Residential Rate Revenue [1]	$ 4,500,000	$ 4,500,000	$ 4,995,458	$ 5,569,438
Commercial Rate Revenue [1]	$ 4,300,000	$ 4,300,000	$ 4,773,438	$ 5,321,907
Other Solid Waste Department Revenue [1]	$ 525,200	$ 525,200	$ 525,200	$ 525,200
REVENUE TOTAL	**$ 10,325,200**	**$ 10,325,200**	**$ 11,404,198**	**$ 12,654,198**
EXPENSES	Year 1	Year 1	Year 2	Year 3
Solid Waste Department Expenses [2]	$ 9,654,198	$ 9,654,198	$ 9,654,198	$ 9,654,198
Interfund Transfer for Road Impacts Increase for Debt Service Pmt. [3]	$ 4,406,150	$ 1,750,000	$ 3,000,000	$ 4,406,150
EXPENSE TOTAL	**$ 14,060,348**	**$ 11,404,198**	**$ 12,654,198**	**$ 14,060,348**
Revenue Surplus (Shortfall) before Interfund Transfer Increase	$ 671,002	$ 671,002	$ 1,750,000	$ 3,000,000
Revenue Surplus (Shortfall) after Interfund Transfer Increase	$ (3,735,148)	$ (1,078,998)	$ (1,250,000)	$ (1,406,150)
Current Rate Revenue	$ 9,800,000	$ 9,800,000	$ 10,878,998	$ 12,128,998
Rate Revenue Requirement	$ 13,535,148	$ 10,878,998	$ 12,128,998	$ 13,535,148
Required Rate Adjustment	**38.11%**	**11.01%**	**11.49%**	**11.59%**
	For 2012/13	For 2012/13	For 2013/14	For 2014/15

[1] Initial revenue values are taken from the *City of Redlands City Manager's FY 2012-13 Proposed Budget*, pg. 17.
[2] Initial expense values are taken from the *City of Redlands City Manager's FY 2012-13 Proposed Budget*, pg. 140-143.
[3] Interfund transfer increased values assume that the City's current interfund transfer of $105,000 is included in the Solid Waste Department's projected expenses.

Table 2 (below) demonstrates how both of the rate adjustment options outlined above will allow the City to meet its 1.5 debt coverage requirement in the years following the initial rate adjustment year. For purposes of illustration, the first five years of debt coverage requirements are shown. Any remaining revenue that is not being used to satisfy the 1.5 debt coverage requirement in future years may be used to fund future solid waste capital projects, including rate stabilization funding, vehicle and container replacement, landfill cell expansion, etc.

TABLE 2
Debt Coverage Requirements

	Year 1	Year 2	Year 3	Year 4	Year 5
Option 1					
Additional Revenue Generated	$ 4,406,150	$ 4,406,150	$ 4,406,150	$ 4,406,150	$ 4,406,150
Cumulative Revenue Generated [1]	$ 4,406,150	$ 8,812,300	$ 10,558,786	$ 12,305,272	$ 14,051,758
1.5 Debt Coverage Requirement [2]	N/A	✓	✓	✓	✓
Debt Service Payment	N/A	$ 2,659,664	$ 2,659,664	$ 2,659,664	$ 2,659,664
Remaining Revenue	$ 4,406,150	$ 6,152,636	$ 7,899,122	$ 9,645,608	$ 11,392,095
Option 2					
Additional Revenue Generated	$ 1,750,000	$ 3,000,000	$ 4,406,150	$ 4,406,150	$ 4,406,150
Cumulative Revenue Generated [1]	$ 1,750,000	$ 4,750,000	$ 6,496,486	$ 8,242,972	$ 9,989,458
1.5 Debt Coverage Requirement [2]	N/A	✓	✓	✓	✓
Debt Service Payment	N/A	$ 2,659,664	$ 2,659,664	$ 2,659,664	$ 2,659,664
Remaining Revenue	$ 1,750,000	$ 2,090,336	$ 3,836,822	$ 5,583,308	$ 7,329,795

[1] Cumulative Revenue Generated is equal to Additional Revenue Generated plus the prior year's Remaining Revenue.

[2] The 1.5 Debt Coverage Requirement is considered to be met if the Cumulative Revenue Generated is greater than or equal to $3,989,496 (i.e., 1.5 times the annual Debt Service Payment of $2,659,664).

Rate Survey

In addition to rate adjustment calculations, R3 conducted a rate survey to compare the City's collection rates to those of other neighboring jurisdictions. For purposes of illustration, R3 also included the City's rates as adjusted by ***Option 1*** and ***Option 2*** rate increases in the rate comparisons.

List of Cities Surveyed

San Bernardino County jurisdictions surveyed:

- Chino Hills
- Colton
- Fontana
- Hesperia
- Loma Linda
- Ontario
- San Bernardino

Residential Rate Comparison

R3 found the City's current residential solid waste collection rates to be lower on average than the rates of surveyed jurisdictions.[3] Specifically:

- The current 60-gallon container rate is 17% lower than the current average of surveyed jurisdictions; and
- The current 90-gallon container rate is 7% lower than the current average of surveyed jurisdictions.

After an ***Option 1*** rate increase of 38.11% for FY 2012/13 (or three years of phased adjustments as outlined by ***Option 2***), the City's residential rates would be slightly higher than the current average of rates in surveyed jurisdictions. Specifically:

- The 60-gallon container rate would be 15% higher than the current average of surveyed jurisdictions; and
- The 90-gallon container rate would be 29% higher than the current average of surveyed jurisdictions.

Table 2, below, provides a comparison of the City's current residential rates, as well as ***Option 1*** and ***Option 2*** increased rates, to the current rates in surveyed neighboring jurisdictions.

TABLE 2
Residential Rate Comparison

Jurisdiction	Effective Date	Cart Size (gallons)	
		60-80	90-110
Chino Hills	7/1/2012	N/A	$ 18.93
Colton	7/1/2008	$ 22.63	N/A
Fontana	7/1/2011	N/A	$ 24.14
Hesperia	2/21/2012	N/A	$ 23.65
Loma Linda	7/1/2012	N/A	$ 17.33
Ontario	1/6/2012	$ 25.63	$ 29.48
San Bernardino	1/1/2009	N/A	$ 22.84
Redlands (Current)	1/1/2011	$ 20.03	$ 20.69
Redlands (*Option 1:* FY 2012/13 increase of 38.11%)	2012	$ 27.66	$ 28.58
Redlands (*Option 2:* FY 2012/13 increase of 11.01%)	2012	$ 22.24	$ 22.97
Redlands (*Option 2:* FY 2013/14 increase of 11.49%)	2013	$ 24.79	$ 25.61
Redlands (*Option 2:* FY 2014/15 increase of 11.59%)	2014	$ 27.66	$ 28.58
Average (without Redlands)		$ 24.13	$ 22.19

[3] R3 found that the surveyed jurisdictions generally include the cost of residential green waste collection in their standard residential rates. As such, R3 used the City's residential collection rates for 60- and 90-gallon containers which include 60-gallon green waste collection in all residential rate comparisons.

Commercial Rate Comparison

R3 found the City's current commercial solid waste collection rates to be lower on average than the rates of surveyed jurisdictions. For example:

- The City's current monthly 1-cubic yard bin rate (one pickup per week) is 40% lower than the current average of surveyed jurisdictions;
- The City's current monthly 2-cubic yard bin rate (one pickup per week) is 18% lower than the current average of surveyed jurisdictions; and
- The City's current monthly 3-cubic yard bin rate (one pickup per week) is 4% lower than the current average of surveyed jurisdictions.

After an ***Option 1*** rate adjustment of 38.11% for FY 2012/13 (or three years of phased adjustments as outlined by ***Option 2***), the City's commercial rates would be higher, in most cases, than the current average of rates in surveyed jurisdictions. For example:

- The City's current monthly 1-cubic yard bin rate (one pickup per week) would be 18% lower than the current average of surveyed jurisdictions;
- The City's current monthly 2-cubic yard bin rate (one pickup per week) would be 13% higher than the current average of surveyed jurisdictions; and
- The City's current monthly 3-cubic yard bin rate (one pickup per week) would be 33% higher than the current average of surveyed jurisdictions.

Table 3, below, provides a comparison of the City's current commercial rates, as well as ***Option 1*** and ***Option 2*** increased rates, to the current rates in surveyed neighboring jurisdictions.

TABLE 3
Commercial Rate Comparison

Jurisdiction	Bin Size and Collection Frequency								
	1-Cubic Yard Bin			2-Cubic Yard Bin			3-Cubic Yard Bin		
	1x/week	2x/week	3x/week	1x/week	2x/week	3x/week	1x/week	2x/week	3x/week
Chino Hills	N/A	N/A	N/A	$ 65.07	$ 113.22	$ 161.36	$ 94.76	$ 149.50	$ 204.33
Colton	$ 86.40	N/A	N/A	$ 114.26	$ 160.11	$ 236.63	$ 128.14	$ 201.82	$ 289.46
Fontana	$ 76.37	$ 119.94	$ 155.49	$ 110.49	$ 191.51	$ 263.03	$ 135.76	$ 248.08	$ 346.51
Hesperia	N/A	N/A	N/A	$ 101.95	$ 199.45	$ 294.23	$ 150.09	$ 290.26	$ 421.80
Loma Linda	N/A	N/A	N/A	N/A	N/A	N/A	$ 100.03	$ 184.73	$ 269.43
Ontario	N/A	N/A	N/A	N/A	N/A	N/A	$ 119.00	$ 224.00	$ 329.00
San Bernardino	N/A	N/A	N/A	$ 112.10	$ 205.32	$ 304.44	$ 119.18	$ 225.56	$ 335.12
Redlands (Current)	$ 48.59	$ 82.65	$ 116.71	$ 82.65	$ 150.83	$ 219.01	$ 116.71	$ 219.01	$ 321.32
Redlands (*Option 1*: FY 2012/13 increase of 38.11%)	$ 67.11	$ 114.15	$ 161.19	$ 114.15	$ 208.32	$ 302.48	$ 161.19	$ 302.48	$ 443.79
Redlands (*Option 2*: FY 2012/13 increase of 11.01%)	$ 53.94	$ 91.75	$ 129.56	$ 91.75	$ 167.44	$ 243.12	$ 129.56	$ 243.12	$ 356.70
Redlands (*Option 2*: FY 2013/14 increase of 11.49%)	$ 60.14	$ 102.29	$ 144.45	$ 102.29	$ 186.68	$ 271.06	$ 144.45	$ 271.06	$ 397.68
Redlands (*Option 2*: FY 2014/15 increase of 11.59%)	$ 67.11	$ 114.15	$ 161.19	$ 114.15	$ 208.32	$ 302.48	$ 161.19	$ 302.48	$ 443.79
Average (without Redlands)	$ 81.39	$ 119.94	$ 155.49	$ 100.77	$ 173.92	$ 251.94	$ 120.99	$ 217.71	$ 313.66

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We appreciate the opportunity to assist to the City. Please feel free to contact me by phone at (916) 782-7821, or by e-mail at rterwin@r3cgi.com, if you have any questions or comments regarding this submittal.

Sincerely,

R3 CONSULTING GROUP

Richard Tagore-Erwin
Principal