



Boston Deflection as Measured with the 8000 Pound Falling Weight Deflectometer, in inches

Figure 20: Overlay Thickness Determination Chart Developed by the Asphalt Institute

SECTION 3

FINANCIAL ANALYSIS

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FINANCIAL ANALYSIS SUMMARY

A financial analysis of the impacts caused by utility cuts was required to determine an appropriate fee schedule. Public Works retained Infrastructure Management Services (IMS) to provide a financial analysis based on the findings of the Phoenix study. The Phoenix study established a deterioration factor of 1.29 for streets which are impacted by utility cuts. This results in a reduction in service life of new pavement from a design life of 20 years to a life of 15.5 years. Service life reduction rates are similar for older streets.

The replacement value of the City's street pavement is 388 million dollars, therefore, any reduction in pavement service life will have a significant financial impact. The City currently spends over four million dollars per year maintaining the street system just to keep pace with current deficiencies. A significant increase in the number of utility cuts, without additional funding for maintenance and/or reconstruction, would result in further deterioration of the City's street system.

IMS completed a financial analysis of the value of the reduced pavement life using the actual replacement value of the pavement and the deterioration factor from the Phoenix study. Separate analysis was completed for arterial street and local streets. IMS then developed tables which detail the value of the reduced life for arterial and local pavements of various ages. These tables represent the true cost to the City for the reduced life of the pavement due to utility cuts.

Based on this data, Public Works developed the proposed Street Deterioration Fee and graduated fee schedule. Proposed fees for arterial streets range from \$10.24 per foot for new streets to \$2.55 per foot for streets over ten years old. Proposed fees for local streets range from \$8.98 per foot for new streets and \$2.82 per foot for streets over ten years old. Monies collected pursuant to these fees would be restricted funds used to repair the long term damage caused by utility cuts.

Failure to address the financial impact of utility cuts will result in increased deterioration of the City's street system and cost the City millions of dollars in lost pavement life. Utility companies whose facilities damage the City's streets need to pay for that damage or the City will be expected to subsidize these companies by funding the necessary repairs. The proposed Street Deterioration Fee, since it is based on actual costs, is an equitable assessment on utility companies.



ESTIMATED PAVEMENT CUT SURCHARGE FEES
FOR THE
CITY OF ANAHEIM, CALIFORNIA
ARTERIAL HIGHWAY AND LOCAL STREETS

Robert Horn

DECEMBER 9, 1994

PREPARED BY:
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INTRODUCTION

This report discusses the results of an investigation conducted by IMS, Infrastructure Management Services, Inc., for the City of Anaheim California. The purpose of this investigation is to estimate a pavement cut surcharge fee for City of Anaheim arterial highway and local streets, dependent upon pavement age. In order to develop an estimated pavement cut surcharge fee, the following variables need to be determined:

1. An estimate of the effect a pavement cut has on pavement life;
2. The area of pavement affected by a pavement cut;
3. Average pavement design life;
4. Average construction costs for arterial highway and local streets.

To estimate the effect a pavement cut has on pavement performance, the City of Anaheim specifically requested IMS to utilize the results of a study conducted by ERES, International, Inc., for the City of Phoenix, Arizona, "The Effects of Utility Cut Patching on Pavement Performance in Phoenix, Arizona", July 18, 1990. This report, hereinafter shall be referenced as the "Phoenix Study".

In the Phoenix Study 100 pavement sample units, 50 with, and 50 without pavement cuts were established. Each sample unit with a utility cut was matched with an adjacent sample unit which did not contain a utility cut. Each sample unit was 150 feet in length and as wide as the existing pavement width. Detailed pavement condition surveys were performed on the sample units with and without utility cuts.

Based on the comparison of the pavement condition data, the Phoenix Study estimates a pavement life reduction factor of 1.29 for pavement area affected by a utility cut for the City of Phoenix, AZ (ref 1). Specifically at the request of the City of Anaheim, this pavement life reduction factor is assumed for pavement area affected by pavement cuts on both the arterial highway and local streets.

The Phoenix Study determined that a pavement cut affected the entire pavement width sampled. This is assumed to be the entire pavement width, as each sample unit selected in the Phoenix Study covered the entire pavement width (an average of 33 feet). Pavement cut surcharge fees are estimated based on an affected width of 33 feet.

An average pavement life of 20 years for newly constructed and/or rehabilitated arterial highway streets and an average pavement life of 35 years for newly constructed and/or rehabilitated local streets is assumed (ref 2).

The average replacement value for an arterial highway street designed for a 20 year period is estimated to be \$34.19 per square yard as calculated on page 3 of this report. The average replacement value for local streets, assuming an average design life of 35 years is estimated to be \$20.00 per square yard as calculated on page 7 of this report.

Based on this data a pavement cut surcharge fee is estimated for both the arterial highway and local streets, dependent upon existing age of pavement.

ESTIMATED PAVEMENT CUT SURCHARGE FEE COST ANALYSIS FOR ARTERIAL HIGHWAY STREETS

The arterial highway system in the City of Anaheim, CA, consists of 184 centerline miles (ref. 2). This equates to approximately 6.2 million square yards of pavement area (ref. 3). The structural section replacement value is estimated to be 212 million dollars (ref. 4). This equates to an average structural section replacement value of \$34.19 per square yard (SY) as calculated below:

$$\text{Value/SY} = \frac{\text{Total Value}}{\text{Total Square Yards}}$$

$$\text{Value/SY} = \frac{\$212,000,000}{6,200,000\text{SY}}$$

$$\text{Value/SY} = \$34.19/\text{SY}$$

Each arterial highway street construction project is designed for a 20 year period (ref. 2). Using a life cycle costing approach assuming no inflation, the value per square yard per year of pavement design life is calculated below:

$$\text{Value/SY/Year} = \frac{\text{Value / SY}}{\text{Average Design Life in Years}}$$

$$\text{Value/SY/Year} = \frac{\$34.19 / \text{SY}}{20 \text{ years}}$$

$$\text{Value/SY/Year} = \$1.71/\text{SY/Year}$$

Based on a pavement life reduction factor of 1.29 due to pavement cuts, a pavement with 20 years of remaining design life, if cut, would have a reduction in life of 4.5 years as calculated below:

$$\text{Life Reduction} = \text{Remaining Life} - \frac{\text{Remaining Life}}{\text{Reduction Factor}}$$

$$\text{Life Reduction} = 20 \text{ Years} - \frac{20 \text{ Years}}{1.29}$$

$$\text{Life Reduction} = 20 \text{ Years} - 15.5 \text{ Years}$$

$$\text{Life Reduction} = 4.5 \text{ Years}$$

The value of this reduced life is equal to \$7.70 per square yard of pavement area affected by the pavement cut as calculated below:

$$\text{Value of Reduced Life} = \text{Life Reduction} * \text{Value/SY/Year}$$

$$\text{Value of Reduced Life} = 4.5 \text{ Years} * \$1.71/\text{SY/Year}$$

$$\text{Value of Reduced Life} = \$7.70/\text{SY}$$

In order to estimate a pavement cut surcharge fee, an estimate of the pavement area affected by the pavement cut needs to be determined. The Phoenix Study assumed the entire street width up to a total width of 33 ft, is affected by a pavement utility cut (ref 1). Based on an affected pavement width of 33 feet an estimated pavement cut surcharge fee (EPCSF) of \$28.26 per lineal foot of pavement cut is estimated for a pavement less than one year old, as calculated below:

$$\text{EPCSF per lineal ft} = \frac{\text{Value of Reduced Life} * \text{Area Affected}}{1 \text{ Lineal Foot}}$$

and,

$$\text{Area Affected} = \text{Pavement Width Affected} * \text{Lineal Feet Cut}$$

so,

$$\text{Area Affected} = 33 \text{ ft} * 1 \text{ ft}$$

$$\begin{aligned} \text{Area Affected} &= 33 \text{ SF} \\ &= 3.67 \text{ SY} \end{aligned}$$

Therefore,

$$\text{EPCSF per lineal ft} = \frac{\$7.70 / \text{SY} * 3.67 \text{ SY}}{1 \text{ Lineal Foot}}$$

$$\text{EPCSF per lineal ft} = \$28.26$$

The following table lists estimated pavement cut surcharge fees for pavements from less than 1 year old up to less than 20 years old, in one year increments, based on the calculation methodology used above:

**ESTIMATED PAVEMENT CUT SURCHARGE FEES FOR ARTERIAL HIGHWAY
 STREETS IN THE CITY OF ANAHEIM, CALIFORNIA BASED ON AN ASSUMED
 AFFECTED PAVEMENT WIDTH OF 33 FEET**

Pavement Age (Years)	Life Reduction (Years)	Value of Reduced Life (\$/SY)	EPCSF (\$ per Lineal Foot)
<1	4.50	7.70	28.26
<2	4.27	7.30	26.79
<3	4.05	6.93	25.43
<4	3.82	6.53	23.97
<5	3.60	6.16	22.61
<6	3.37	5.76	21.14
<7	3.15	5.39	19.78
<8	2.92	4.99	18.31
<9	2.70	4.62	16.96
<10	2.47	4.22	15.49
<11	2.25	3.85	14.13
<12	2.02	3.45	12.66
<13	1.80	3.08	11.30
<14	1.57	2.68	9.84
<15	1.35	2.31	8.48
<16	1.12	1.92	7.05
<17	0.90	1.54	5.65
<18	0.67	1.15	4.22
<19	0.45	0.77	2.83
<20	0.22	0.38	1.39

ESTIMATED PAVEMENT CUT SURCHARGE FEE COST ANALYSIS FOR LOCAL STREETS

The local street system in the City of Anaheim, CA consists of approximately 416 centerline miles ^(ref. 2). This equates to approximately 8.8 million square yards ^(ref. 4). The structural section value is estimated to be 176 million dollars ^(ref. 4). This equates to an average structural section value of \$20.00 per square yard (SY) as calculated below:

$$\text{Value/SY} = \frac{\text{Total Value}}{\text{Total Square Yards}}$$

$$\text{Value/SY} = \frac{\$176,000,000}{8,800,000\text{SY}}$$

$$\text{Value/SY} = \$20.00/\text{SY}$$

Each local street construction project is designed for a 20 year period, however, the Orange County Materials Lab states that many local streets exceed this design life and may perform for up to 35 years ^(ref. 2). Using a life cycle costing approach and no inflation, the value per square yard per year of pavement design life is calculated below:

$$\text{Value/SY/Year} = \frac{\text{Value / SY}}{\text{Average Design Life in Years}}$$

$$\text{Value/SY/Year} = \frac{\$20.00 / \text{SY}}{35 \text{ years}}$$

$$\text{Value/SY/Year} = \$0.57/\text{SY/Year}$$

Based on a pavement life reduction factor of 1.29 due to pavement cuts, a pavement with 35 years of remaining design life, if cut, would have a reduction in life of 7.87 years as calculated below:

$$\text{Life Reduction} = \text{Remaining Life} - \frac{\text{Remaining Life}}{\text{Reduction Factor}}$$

$$\text{Life Reduction} = 35 \text{ Years} - \frac{35 \text{ years}}{1.29}$$

$$\text{Life Reduction} = 35 \text{ Years} - 27.13 \text{ Years}$$

$$\text{Life Reduction} = 7.87 \text{ Years}$$

The value of this reduced life is equal to \$4.49 per square yard of pavement area affected by the pavement cut as calculated below:

$$\text{Value of Reduced Life} = \text{Life Reduction} * \text{Value/SY/Year}$$

$$\text{Value of Reduced Life} = 7.87 \text{ Years} * \$0.57/\text{SY/Year}$$

$$\text{Value of Reduced Life} = \$4.49/\text{SY}$$

In order to estimate a pavement cut surcharge fee, an estimate of the pavement area affected by the pavement cut needs to be determined. The Phoenix Study assumed the entire street width, up to a total width of 33 ft is affected by a pavement utility cut (ref. 1). Based on an assumed affected pavement width of 33 feet an estimated pavement cut surcharge fee

(EPCSF) of \$16.48 per lineal foot of pavement cut is estimated for a pavement less than one year old as calculated below:

$$\text{EPCSF per lineal ft} = \frac{\text{Value of Reduced Life} * \text{Area Affected}}{1 \text{ Lineal Foot}}$$

and,

$$\text{Area Affected} = \text{Pavement Width Effected} * \text{Lineal Feet Cut}$$

so,

$$\text{Area Affected} = 33 \text{ ft} * 1 \text{ ft}$$

$$\text{Area Affected} = 33 \text{ SF}$$

$$= 3.67 \text{ SY}$$

Therefore,

$$\text{EPCSF per lineal ft} = \frac{\$4.49 / \text{SY} * 3.67 \text{ SY}}{1 \text{ Lineal Foot}}$$

$$\text{EPCSF per lineal ft} = \$16.48$$

The following table lists estimated pavement cut surcharge fees for pavements from less than 1 year old up to less than 35 years old, in one year increments, based on the calculation methodology used above:

**ESTIMATED PAVEMENT CUT SURCHARGE FEES FOR LOCAL STREETS IN
 THE CITY OF ANAHEIM, CALIFORNIA BASED ON AN ASSUMED AFFECTED
 PAVEMENT WIDTH OF 33 FEET**

Pavement Age (Years)	Life Reduction (Years)	Value of Reduced Life (\$/SY)	EPCSF (\$ per Lineal Foot)
<1	7.87	4.49	16.48
<2	7.64	4.35	15.96
<3	7.42	4.23	15.52
<4	7.20	4.10	15.05
<5	6.97	3.97	14.57
<6	6.74	3.84	14.09
<7	6.52	3.72	13.65
<8	6.29	3.59	13.18
<9	6.07	3.46	12.70
<10	5.84	3.33	12.22
<11	5.62	3.20	11.74
<12	5.40	3.08	11.30
<13	5.17	2.95	10.83
<14	4.95	2.82	10.35
<15	4.72	2.69	9.87
<16	4.50	2.57	9.43
<17	4.27	2.43	8.92
<18	4.05	2.31	8.48
<19	3.82	2.18	8.00
<20	3.60	2.05	7.52
<21	3.37	1.92	7.05

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<22	3.15	1.80	6.61
<23	2.92	1.66	6.09
<24	2.70	1.54	5.65
<25	2.47	1.41	5.17
<26	2.25	1.28	4.70
<27	2.02	1.15	4.22
<28	1.80	1.03	3.78
<29	1.57	0.89	3.27
<30	1.35	0.77	2.83
<31	1.12	0.64	2.35
<32	0.90	0.51	1.87
<33	0.67	0.38	1.39
<34	0.45	0.26	0.95
<35	0.22	0.13	0.48

REFERENCES:

1. ERES, International, Inc. "The Effects of Utility Cut Patching on Pavement Performance in Phoenix, Arizona", July 18, 1990.
2. City of Anaheim, California, Public Works-Engineering Department "FY 1992-93, Report on the Condition of Arterial Highways" April, 1993
3. City of Anaheim, California, Public Works Department "FY 1993-94, Report on the Condition of Arterial Highways", June, 1994
4. City of Anaheim, California, Public Works Department "FY 1993/94, Report on the Comparison of the Arterial Highway System Pavement Management System and the Local Street System Pavement Management System", November, 1994

ESTIMATED PAVEMENT CUT SURCHARGE FEES

FOR THE

CITY OF ANAHEIM, CALIFORNIA

ARTERIAL HIGHWAY AND LOCAL STREETS

BASED ON AN AFFECTED:

12 FOOT LANE WIDTH FOR ARTERIAL HIGHWAY STREETS
AND AN

18 FOOT HALF PAVEMENT WIDTH FOR LOCAL STREETS

DECEMBER 8, 1994

PREPARED BY:

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ESTIMATED PAVEMENT CUT SURCHARGE FEES FOR ARTERIAL HIGHWAY AND LOCAL STREETS BASED ON AN ASSUMED AFFECTED PAVEMENT WIDTH OF 12 FEET AND 18 FEET RESPECTIVELY

Specifically at the request of the City of Anaheim, an estimated pavement cut surcharge fee (EPCSF) based on an assumed affected 12 foot lane width is calculated below for arterial highway streets. The estimated fees listed are calculated based on the methodology used in the "Estimated Pavement Cut Surcharge Fee for the City of Anaheim, California, Arterial Highway and Local Streets", December 8, 1994, report. However, an affected pavement width of 12 feet is used rather than an affected width of 33 feet.

$$\text{EPCSF per lineal ft} = \frac{\text{Value of Reduced Life} * \text{Area Affected}}{1 \text{ Lineal Foot}}$$

and,

$$\text{Area Affected} = \text{Pavement Width Affected} * \text{Lineal Feet Cut}$$

so,

$$\text{Area Affected} = 12 \text{ ft} * 1 \text{ ft}$$

$$\begin{aligned} \text{Area Affected} &= 12 \text{ SF} \\ &= 1.33 \text{ SY} \end{aligned}$$

Therefore,

$$\text{EPCSF per lineal ft} = \frac{\$7.70 / \text{SY} * 1.33 \text{ SY}}{1 \text{ Lineal Foot}}$$

$$\text{EPCSF per lineal ft} = \$10.24$$

The following table lists estimated pavement cut surcharge fees for pavements from less than 1 year old up to less than 20 years old, in one year increments, based on the calculation methodology used above:

**ESTIMATED PAVEMENT CUT SURCHARGE FEES FOR ARTERIAL HIGHWAY
 STREETS IN THE CITY OF ANAHEIM, CALIFORNIA BASED ON AN ASSUMED
 AFFECTED PAVEMENT WIDTH OF 12 FEET**

Pavement Age (Years)	Life Reduction (Years)	Value of Reduced Life (\$/SY)	EPCSF (\$ per Lineal Foot)
<1	4.50	7.70	10.24
<2	4.27	7.30	9.71
<3	4.05	6.93	9.22
<4	3.82	6.53	8.68
<5	3.60	6.16	8.19
<6	3.37	5.76	7.66
<7	3.15	5.39	7.17
<8	2.92	4.99	6.64
<9	2.70	4.62	6.14
<10	2.47	4.22	5.61
<11	2.25	3.85	5.12
<12	2.02	3.45	4.59
<13	1.80	3.08	4.10
<14	1.57	2.68	3.58
<15	1.35	2.31	3.07
<16	1.12	1.92	2.55
<17	0.90	1.54	2.05
<18	0.67	1.15	1.53
<19	0.45	0.77	1.02
<20	0.22	0.38	0.51

Specifically at the request of the City of Anaheim, an estimated pavement cut surcharge fee (EPCSF) based on an assumed affected half pavement width of 18 feet is calculated below for local streets:

$$\text{EPCSF per lineal ft} = \frac{\text{Value of Reduced Life} * \text{Area Affected}}{1 \text{ Lineal Foot}}$$

and,

$$\text{Area Affected} = \text{Pavement Width Effected} * \text{Lineal Feet Cut}$$

so,

$$\text{Area Affected} = 18 \text{ ft} * 1 \text{ ft}$$

$$\begin{aligned} \text{Area Affected} &= 18 \text{ SF} \\ &= 2 \text{ SY} \end{aligned}$$

Therefore,

$$\text{EPCSF per lineal ft} = \frac{\$4.49 / \text{SY} * 2 \text{ SY}}{1 \text{ Lineal Foot}}$$

$$\text{EPCSF per lineal ft} = \$8.98$$

The following table lists estimated pavement cut surcharge fees for pavements from less than 1 year old up to less than 35 years old, in one year increments, based on the calculation methodology used above:

**ESTIMATED PAVEMENT CUT SURCHARGE FEES FOR LOCAL STREETS IN
 THE CITY OF ANAHEIM, CALIFORNIA BASED ON AN ASSUMED AFFECTED
 PAVEMENT WIDTH OF 18 FEET**

Pavement Age (Years)	Life Reduction (Years)	Value of Reduced Life (\$/SY)	EPCSF (\$ per Lineal Foot)
<1	7.87	4.49	8.98
<2	7.64	4.35	8.70
<3	7.42	4.23	8.46
<4	7.20	4.10	8.20
<5	6.97	3.97	7.94
<6	6.74	3.84	7.68
<7	6.52	3.72	7.44
<8	6.29	3.59	7.18
<9	6.07	3.46	6.92
<10	5.84	3.33	6.66
<11	5.62	3.20	6.40
<12	5.40	3.08	6.16
<13	5.17	2.95	5.90
<14	4.95	2.82	5.64
<15	4.72	2.69	5.38
<16	4.50	2.57	5.14
<17	4.27	2.43	4.86
<18	4.05	2.31	4.62
<19	3.82	2.18	4.36
<20	3.60	2.05	4.10
<21	3.37	1.92	3.84
<22	3.15	1.80	3.60
<23	2.92	1.66	3.32
<24	2.70	1.54	3.08
<25	2.47	1.41	2.82

<26	2.25	1.28	2.58
<27	2.02	1.15	2.30
<28	1.80	1.03	2.06
<29	1.57	0.89	1.78
<30	1.35	0.77	1.54
<31	1.12	0.64	1.28
<32	0.90	0.51	1.02
<33	0.67	0.38	0.76
<34	0.45	0.26	0.52
<35	0.22	0.13	0.26

ESTIMATED COSTS TO UTILITY COMPANIES

In order to assess the potential costs to utility companies due to adoption of the Street Deterioration Fee, the Right of Way Construction Permits issued to The Gas Company and Pacific Bell over the last six months of 1995 were reviewed. A preliminary assessment of the size of the excavation and the age of the street was used to estimate the applicable fee. Had the Street Deterioration Fee been in place during this period, The Gas Company would have paid approximately \$28,000 and Pacific Bell would have paid \$16,500. Charges to Southern California Edison would have been nominal.

The majority of the arterial streets being cut were older than eight years so that the applicable fees were between \$2.55 - \$6.64 per foot, and local street were older than ten years requiring a fee of \$2.82 per foot. Also, a number of permits were issued for work in streets scheduled for reconstruction or new streets where the final pavement was not completed; these excavations are exempt from the Street Deterioration Fee.

These estimates show the cost of maintaining an existing system will not be tremendously impacted. However, this review and estimate of costs did not include the excavations required for installation of new telecommunication facilities. These costs could be substantial if systems are designed which disregard the condition and age of the City's streets and fail to coordinate their efforts with the City's Five Year Capital Improvement Program. The adoption of this fee would encourage telecommunication companies to consider these items and, if installation of these facilities require excavating in new pavements, companies would pay their fair share of the damage caused by the excavation.

SOUTHERN GAS CO.

LOCATION	FEE	SIZE(FT)	COST
MANCHESTER 75' E/O HARBOR	\$2.55	3	\$7.65
MAGNOLIA 120' N/O BROADWAY	\$5.61	4	\$22.44
KATELLA 834' W/O HARBOR	\$2.55	3	\$7.65
HARBOR 230' S/O SYCAMORE	\$5.61	5	\$28.05
GLENWOOD/EAST ST. AND GLENWOOD 30' E/O ELMWOOD	\$6.66	3	\$19.98
BALL RD. 300' W/O KNOTT AVE.	\$7.17	3	\$21.51
5300 E. LA PALMA AVE.	\$2.55	3	\$7.65
CLEMENTINE ST., OAK ST. S/O LINCOLN AVE.	\$5.61	510	\$2,861.10
1617 E. LINCOLN AVE. 180' W/O EVERGREEN	\$2.55	3	\$7.65
BALL RD. ~ 500' W/O ANAHEIM BLVD.	EXEMPT	2	\$0.00
BALSAM AVE. & EAST ST.	\$2.82	3	\$8.46
SYCAMORE 249' W/O STATE COLLEGE	\$2.55	3	\$7.65
SYCAMORE 416' W/O ALMOND	\$2.82	3	\$8.46
EAST STREET - 91 FREEWAY TO LA PALMA AVE.	EXEMPT	2	\$0.00
BLUEGUM WAY 50' N/O CORONADO	\$2.55	3	\$7.65
KNOTT AVE. ~ 750' S/O SAVANNA ST.	\$6.64	3	\$19.92
1573 KATELLA AVE. ~ 350' S/O ORA. CO. FLOOD CONTROL	\$2.55	3	\$7.65
LINCOLN AVE. BETWEEN BEACH BLVD & WESTERN AVE	EXEMPT	3	\$0.00
EAST ST. AND OAK ST	\$7.66	2	\$15.32
EUCLID ST. 250' N/O BROADWAY	\$2.55	3	\$7.65
11 LINOIS ST BETWEEN LINCOLN AVE & BROADWAY	\$2.82	680	\$1,917.60
HARBOR BLVD. 300' S/O SYCAMORE	\$5.61	3	\$16.83
E. BALL RD., ~500' W/O ANAHEIM BLVD., ~400' & 800' E/O ANAHEIM BLVD	EXEMPT	3	\$0.00
LINCOLN AVE. ~ 250' E/O LARCH	\$2.55	3	\$7.65
BRIANNA BETWEEN NATALIE & KELSEY CT	\$8.70	469	\$4,080.30
LA PALMA AVE. & SANTA ANA FREEWAY	\$5.61	1	\$5.61
ANAHEIM BLVD. BETWEEN CERRITOS AND PALAIS	EXEMPT	12	\$0.00
BALL RD. 100' E/O PALM ST.	\$2.55	3	\$7.65
CRESENT AVE. BETWEEN DALE AND MAGNOLIA	EXEMPT	24	\$0.00
NIGHT STAR WAY, SHINING STAR COURT & BLUE SKY WAY	EXEMPT	1364	\$0.00
NICOLE WAY	EXEMPT	298	\$0.00
DALE ST. ~ 180' S/O BALL RD.	\$9.22	30	\$276.60
CHESNUT FROM WALNUT ST. TO WEST ST.	\$2.82	3	\$8.46
CREEKVIEW LN. FROM TOYON	EXEMPT	44	\$0.00
MATTHEW WAY WEST FROM MOONRIDGE LN	EXEMPT	424	\$0.00
LIST & PLANS	\$5.61	130	\$729.30
VARIOUS STREETS	\$6.66	203	\$1,351.98
MATTHEW WAY	EXEMPT	499	\$0.00
MATTHEW WAY	EXEMPT	307	\$0.00
ANAHEIM BLVD. ~ 200' N/O ADELE	\$9.22	3	\$27.66
KATELLA AVE. AT CLAUDINA WAY	EXEMPT	56	\$0.00
KATELLA AVE. AT BAYLESS	\$2.55	56	\$142.80

SUBTOTAL

\$11,638.88