



# Traffic Signal Maintenance Agreement

## Item Justification

Fiscal Year 2009-10

State Owned % of Total
<b>74.20%</b>

<b>W</b>	<b>WAGE COST PER HOUR</b>	
	<b>3.25 % increase for 2009-10</b>	
	<b>1792 charged hours</b>	<b>Hourly Rate</b>
	<b>Signal Technician</b>	<b>\$38.21</b>
	<b>Sign Specialist</b>	<b>\$29.41</b>

State owned signs	<b>1,832</b>
State owned signals	<b>66</b>
Total City & State owned signals	<b>89</b>

**ITEM #1 Opticom**

Checked once per year. It requires 1/2 man-hour per year per signal. Equipment is cleaned, inspected and checked for proper range and proper interface/operation with control equipment. Was checked twice per year, decreased since most equipment has been upgraded with more reliable units.

**(Tech Rate) \* .5 hr / 12 months = \$1.59 per signal/mo 66 Signals**

**ITEM #2 Conflict Monitor**

This is a preventive maintenance check that has been initiated to ensure installed conflict monitors are operational. It requires .75 man-hour per year per intersection. Shop tested unit is temporarily installed while original CMU is brought back to shop to be tested by CMU tester, then reinstalled at intersection. Performed once per year all intersections

**(Tech Rate \* .75 hr ) / 12 months / 66 / 12months= \$2.39 per signal/mo 66 Signals**

**ITEM #3 New Tools & Test Equipment (7 year life)**

IDC INDUCTIVE LOOP ANALYZER PURCHASED 2002-03 removed for 2009-10	\$0	new in 2002-03
3M Opticom Emitter-(truck mounted) PURCHASED 2002-03 removed for 2009-10	\$0	new in 2002-03
CARTEGRAPH SOFTWARE UPGRADE PURCHASED FY 03-04	\$820	new in 2003-04
CARTEGRAPH SOFTWARE UPGRADE/MAINTENANCE PURCHASED FY 04-05	\$641	new in 2004-05
CARTEGRAPH SOFTWARE UPGRADE/MAINTENANCE PURCHASED FY 05-06	\$1,400	new in 2005-06
TRAFFIC SIGNAL CONFLICT MONITOR TESTER PURCHASED IN FY 06-07	\$10,000	new in 2006-07
CARTEGRAPH SOFTWARE UPGRADE/MAINTENANCE PURCHASED FY 07-08	\$1,687	new in 2007-08
3M opticom emitter for shop testing cards & heads Purchased FY 2008-09	\$995	new in 2008-09
Reno LF310 with LP300 Loop finder, probe w/ spray wand, Purchased FY2009-10	\$519	new in 2009-10
Reno ST-300 44 Pin card slot tester purchased FY09-10	\$285	new in 2009-10
Shelf & rack detector tester Model 330 Purchased FY 2008-09	\$983	new in 2009-10
Universal Programmer (chip burner) Purchased FY 2008-09	\$404	new in 2009-10
	<b>\$17,733.70</b>	

**(((\$17733.70 / 7 yrs) \* 74.2%) / 66 units / 12 months = \$2.37 per signal/mo 66 Signals**



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<b>ITEM #4</b>	<b>Master Controllers</b>			
	This figure was derived using previous years average maintenance on the master controllers and telemetry systems. We estimate about 2.75 manhours/yr per signal working on master controllers and telemetry equipment.			
	<b>Master Controller = ((180 hrs * Tech Rate) / 12) / 66 signals =</b>	<b>\$8.68</b>	Affected signals	<b>66</b>
			per signal/mo	
<b>ITEM #5</b>	<b>Vehicle Detectors</b>			
	Loop detector replacement has been removed due to the fact that most loop detectors have been or will be upgraded to premanufactured PVC loops which have a very low failure rate. It takes about two signal tech manhours to install a microwave detector.			
	<b>MICROWAVE DETECTORS: average 2 each year</b>		Affected signals	<b>45</b>
	<b>labor:(2 hrs * Tech Rate * 2 detectors) / 45 signals / 12 mos =</b>	\$0.28		
	detector: \$638 each	\$2.36		
	<b>Total</b>	<b>\$2.64</b>	per signal/mo	
<b>ITEM #6</b>	<b>Overtime</b>			
	Overtime is tracked each year and billed accordingly. We averaged 4.75 hours/mth overtime in 2008-09.			
	<b>(C57(57 hrs * Tech Rate * 1.5) / 66 signals / 12 months =</b>	<b>\$4.12</b>	per signal/mo	<b>66 Signals</b>
<b>ITEM #7:</b>	<b>Travel</b>			
	Travel to Helena for annual signal tech meeting per man (2007-08 expenses)	\$241.31		
	<b>((((Tech Rate * 24 hrs)*2 men+(expenses 241.31) * 2 Men) / 66signals / 12</b>	<b>\$2.93</b>	per signal/mo	<b>66 Signals</b>
<b>ITEM #8</b>	<b>Material Control/ Recordkeeping</b>			
	Includes stocking of parts, recordkeeping, coordinators, 18% of work hours for 1 technician.			
	<b>(Tech Rate * Hours/Year * 74.2% * 18%) / 66 signals / 12 months =</b>	<b>\$11.55</b>	per signal/mo	<b>66 Signals</b>
<b>ITEM #9</b>	<b>Liability Insurance</b>			
	City's 2009-10 insurance costs for 2 men are \$4577	<b>\$4,577</b>	<b>Annual Insurance Cost</b>	
	<b>(((\$4577) * 74.2%) / 66 signals / 12 months =</b>	<b>\$4.29</b>	per signal/mo	<b>66 Signals</b>
<b>ITEM #10</b>	<b>Telephone</b>			
	Signal Shop Telephone per year	\$168.60		
	Long Distance Charges in 2008-09	\$122.57		
	Two Cell Phones @ \$100 per month	\$1,200.00		
	Hill 57 Line @ \$52.74per month	\$632.88		
	We figure 25% MDT use for shop, cell phones & long distance. 74.2% use for Hill 57.			
	<b>((((191.40+113.28+930.60) *0.25) + ((627.60*74.2%))) / 66signals / 12 months</b>	<b>\$1.06</b>	per signal/mo	<b>66 Signals</b>



# Traffic Signal Maintenance Agreement

## Item Justification

### ITEM #11 Pole Preventive Maintenance Materials

For this figure we attempt to take an average for the amount of materials consumed per intersection when we perform pole preventive maintenance. We realize some intersections have more light bulbs than others, and some less, these are just averages.

We perform preventive maintenance every other year on each signal. Therefore we use 33.0 intersections instead of 66 to arrive at our average costs.

5.50	GREEN TOUCHUP PAINT - 1 CANS @ \$5.50 (Econolite green)	\$5.50	per signal/yr	<b>33.0 Signals</b>
4.75	1 CAN FLAT BLACK @ \$4.75	\$4.75	per signal/yr	<b>33.0 Signals</b>
10.50	Replace one lense every five years due to deterioration (age, weather)@ \$10.50	\$2.10	per signal/yr	<b>33.0 Signals</b>
12.00	RAGS FOR CLEANING @ \$12.00/MO DIVIDED BY 33.0 UNITS	\$3.24	per signal/yr	<b>33.0 Signals</b>
55.00	GLASS CLEANER @ \$55 PER CASE, 1 CAN PER INTERSECTION	\$4.58	per signal/yr	<b>33.0 Signals</b>
	<b>SUBTOTAL</b>	\$20.17	per signal/yr	<b>33.0 Signals</b>
	State signals will consume 360 - 90 watt and 240 -135 watt bulbs for 2008-09. The 90 watt bulbs cost \$1.65 and the 135 watt bulbs cost \$2.55. This also includes changing "Walk - Don't Walk" every year.	\$36.55	per signal/yr	<b>33.0 Signals</b>

**Total**      **\$2.36**      per signal/mo      **66 Signals**

### ITEM #12 Pole Preventive Maintenance Labor

It takes 2 hours for 1 Tech and 1 Laborer to perform preventive maintenance on an intersection every other year. It takes 1 Laborer .5hrs per intersection to test & visually inspect every ped button and ped display twice a year.

Video camera lens cleaning has been added to preventative maintenance. It is performed every 4 months on 12 cameras at 8 signals.

(.25 * Tech Rate * 12 cameras / 12mth / 8 signals)	\$1.19	per signal/mo	<b>8 signals</b>
.5 hrs * Sign Specialist Rate / 12 months =	\$1.23	per signal/mo	<b>66 Signals</b>
<b>((2 hrs * Tech Rate) + ( 2 hrs * Laborer rate)) / 2 / 12 months + \$1.17 =</b>	<b>\$8.06</b>	per signal/mo	<b>66 Signals</b>

### ITEM #13 Emergency Repair Parts

These include all parts required due to damage from vandalism, unreported vehicle damage, weather related damages, etc. We use a five year average.

**Affected signals**      **66**

1 Pelco Pole Base @ \$155 ea	\$0.20		
1 - 12" Green LED's @ \$95 ea	\$0.12		
1 - 12" Red LED's @ \$55 ea	\$0.07		
1 - 8" Green LED's @ 65 ea	\$0.08		
1 - 8" Red LED's @ 50 ea	\$0.06		
200 FT, 12 conductor AWG14 signal cable @ \$1.58/FT =	\$0.40	per signal/mo	
200 FT, 4 CONDUCTOR OPTICOM LEAD-IN CABLE @ \$0.45/FT =	\$0.11	per signal/mo	
LENSES (5) @ \$12.00 =	\$0.08	per signal/mo	
REFLECTORS (5) @ \$11.00 =	\$0.07	per signal/mo	
HOUSINGS (5) @ \$70 =	\$0.44	per signal/mo	
BACKSHIELDS (10) @ \$40 =	\$0.51	per signal/mo	
VISORS (10) @ \$21.00 =	\$0.21	per signal/mo	
1 OPTICOM DETECTOR HEAD @ \$713 EA	\$0.90	per signal/mo	
<b>Total</b>	<b>\$3.25</b>	per signal/mo	

### ITEM #14 Emergency Repair Labor

The City has averaged 100 manhours per year on emergency maintenance in recent years.

**Affected signals**      **66**

<b>(100 hrs * 74.2% * Tech Rate) / 66 signals / 12 months =</b>	<b>\$3.58</b>	per signal/mo	
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# Traffic Signal Maintenance Agreement

## Item Justification

**ITEM #15: Solid State Repair Parts**

The cost of solid state parts is estimated at \$1,500 per year. All state signals are solid state.

400.00	annual shipping for solid state repairs	\$0.37	
530.00	annual conflict monitor calibration & certification	\$0.50	per signal/mo <b>66 Signals</b>
<b>1500 + 400 + 530 x 74.2% / 66/12</b>		<b>\$2.28</b>	per signal/mo <b>66 Signals</b>





# Traffic Signal Maintenance Agreement

## Item Justification

### SUMMARY

Item	Per Month	
	2008-09	2009-10
Opticom	\$ 103.62	\$ 104.94
Conflict Monitors	\$ 155.10	\$ 157.74
Tools & Test Equip.	\$ 155.10	\$ 156.42
Master Controllers	\$ 564.30	\$ 572.88
Vehicle Detectors	\$ 131.40	\$ 118.80
Overtime	\$ 199.98	\$ 271.92
Travel	\$ 189.42	\$ 193.38
Material Control	\$ 749.76	\$ 762.30
Liability Insurance	\$ 303.60	\$ 283.14
Phone	\$ 64.68	\$ 69.96
Pole PM	\$ 138.60	\$ 155.76
Pole Labor	\$ 439.15	\$ 531.93
Emergency Repair Parts	\$ 512.82	\$ 214.50
Emergency Repair Labor	\$ 232.32	\$ 236.28
Solid State Parts	\$ 151.68	\$ 150.57
Coord. & Observation	\$ 620.40	\$ 630.30
Solid State Repair	\$ 334.62	\$ 339.90
Vehicles	\$ 521.40	\$ 535.92
Large Sign Truck	\$ -	
Misc. Hardware	\$ 36.96	\$ 36.96
Pedestrian Hardware	\$ 170.28	\$ 182.82
Time Clocks	\$ -	\$ -
Underground Locates	\$ 272.58	\$ 277.20
Sign Maintenance	\$ -	\$ 375.56
<b>Sub Total</b>	<b>\$ 6,047.77</b>	<b>\$ 6,359.17</b>
Admin. (12.0% of prev.)	\$ 725.73	\$ 718.03
<b>Total</b>	<b>\$ 6,773.50</b>	<b>\$ 7,077.20</b>
<b>change from last year 4.48%</b>		<b>\$ 81,282.00</b>
		<b>\$ 84,926.45</b>

12.00%



# Exhibit A

## Itemized Cost Matrix

Fiscal Year 2009-10

Intersection Location	Complexity Factor	Signal Cabinet Type	Controller Type	Opticom	Conflict Monitor	Master Controllers	Vehicle Detectors	Tools & Equip.	Overtime	Travel	Material Control/Record Keeping	Liability Insurance	Pole M Labor	Pole Pm Material	Emerg. Repair Parts	Emerg. Labor	UG Locates	Coord. & Observation	Solid State Parts	Solid State Repairs	Signal Vehicles	Misc. Hardware	Time Clocks	Ped. Signal Maint.	Phone Charges	Admin @ 12.0%	Monthly Total	Monthly, Adjusted for Complexity	Yearly Total
10th S. @ Fox Farm	1.30	P	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.98	\$ 102.48	\$ 133.23	\$ 1,598.70
10th S. @ 2nd St.	1.30	P	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 133.23	\$ 1,598.70
10th S. @ 5th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 7th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 9th St.	1.30	P	TMP390/TMM500	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 133.23	\$ 1,598.70
10th S. @ 11th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 13th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 14th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 15th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 20th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 23rd St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 25th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 26th St.	1.30	P	TMP390/TMM500	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 133.23	\$ 1,598.70
10th S. @ 32nd St.	1.30	P	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 133.23	\$ 1,598.70
10th S. @ 38th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 39th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 43rd St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th S. @ 49th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	NA	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
10th N. @ 57th St.	1.30	P	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.98	\$ 102.48	\$ 133.23	\$ 1,598.70
2nd N. @ 3rd St.	1.00	M	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 99.52	\$ 1,194.29
2nd N. @ 4th St.	1.00	M	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 99.52	\$ 1,194.29
2nd N. @ 5th St.	1.00	M	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 99.52	\$ 1,194.29
2nd N. @ 6th St.	1.00	M	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 99.52	\$ 1,194.29
2nd N. @ 9th St.	1.00	M	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 99.52	\$ 1,194.29
2nd N. @ 14th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
2nd N. @ 15th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
2nd N. @ 25th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
2nd N. @ 26th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
2nd N. @ 38th St.	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.98	\$ 102.48	\$ 102.48	\$ 1,229.77
2nd N. @ 57th St.	1.30	P	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.98	\$ 102.48	\$ 133.23	\$ 1,598.70
1st N. @ 2nd St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ 3rd St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ 4th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ 5th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ 6th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ 7th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ 9th St.	0.78	H	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.98	\$ 102.48	\$ 80.17	\$ 962.08
1st N. @ 14th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ 15th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ 25th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ 26th St.	0.78	H	TMP 390	1.59	2.39	8.68	NA	2.37	4.12	2.93	11.55	4.29	8.06	2.36	3.25	3.58	4.20	9.55	2.28	5.15	8.12	0.56	0.00	2.77	1.06	10.66	\$ 99.52	\$ 77.86	\$ 934.32
1st N. @ Park Drive	1.00	M	TMP 390	1.59	2.39	8.68	2.64	2.37	4.12	2.93	11.55	4.29																	



## Exhibit B

Fiscal Year 2009-10

Item Description	Fiscal Year Monthly Charges		Change from FY 2008-09
	2008-09	2009-10	
Opticom	\$ 103.62	\$ 104.94	1.27%
Conflict Monitor	\$ 155.10	\$ 157.74	1.70%
Master Controllers	\$ 564.30	\$ 572.88	1.52%
Vehicle Detectors	\$ 131.40	\$ 118.80	-9.59%
Tools & Test Equipment	\$ 155.10	\$ 156.42	0.85%
Overtime	\$ 199.98	\$ 271.92	35.97%
Travel	\$ 189.42	\$ 193.38	2.09%
Material Control\ Recordkeeping	\$ 749.76	\$ 762.30	1.67%
Liability Insurance	\$ 303.60	\$ 283.14	-6.74%
Pole PM Labor	\$ 439.15	\$ 531.93	21.13%
Pole PM Material	\$ 138.60	\$ 155.76	12.38%
Emergency Repair Parts	\$ 512.82	\$ 214.50	-58.17%
Emergency Repair Labor	\$ 232.32	\$ 236.28	1.70%
Underground Locates	\$ 272.58	\$ 277.20	1.69%
Coordination & Observation	\$ 620.40	\$ 630.30	1.60%
Solid State Parts	\$ 151.68	\$ 150.57	-0.74%
Shop Work - Solid State	\$ 334.62	\$ 339.90	1.58%
Signal Vehicles	\$ 521.40	\$ 535.92	2.78%
Miscellaneous Hardware	\$ 36.96	\$ 36.96	-0.00%
Time Clocks	\$ -	\$ -	0.00%
Pedestrian parts	\$ 170.28	\$ 182.82	7.36%
Telephone	\$ 64.68	\$ 69.96	8.16%
Administration	\$ 725.73	\$ 718.03	-1.06%
Sign Maintenance	\$ -	\$ 375.56	0.00%
<b>Monthly Total</b>	<b>\$ 6,773.50</b>	<b>\$ 7,077.20</b>	<b>4.48%</b>
<b>Yearly Total</b>	<b>\$ 81,282.00</b>	<b>\$ 84,926.45</b>	<b>4.48%</b>



## Exhibit C

### Monthly Payment Schedule

Fiscal Year 2009-10

<b>Month</b>	<b>Charge</b> * <i>(rounded to nearest whole dollar)*</i>
July, 2009	\$ 7,077
August, 2009	\$ 7,077
September, 2009	\$ 7,077
October, 2009	\$ 7,077
November, 2009	\$ 7,077
December, 2009	\$ 7,077
January, 2010	\$ 7,077
February, 2010	\$ 7,077
March, 2010	\$ 7,077
April, 2010	\$ 7,077
May, 2010	\$ 7,077
June, 2010	\$ 7,077
<b>Total</b>	<b>\$ 84,924</b>

*(FY total of rounded monthly amount)*



## Exhibit D

### Maintenance Cost Summary (per intersection)

Fiscal Year 2009-10

Intersection Location	Monthly Cost	Yearly Cost	
10th S. @ Fox Farm	\$ 133.23	\$ 1,598.70	
10th S. @ 2nd St.	\$ 133.23	\$ 1,598.70	
10th S. @ 5th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 7th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 9th St.	\$ 133.23	\$ 1,598.70	
10th S. @ 11th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 13th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 14th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 15th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 20th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 23rd St.	\$ 102.48	\$ 1,229.77	
10th S. @ 25th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 26th St.	\$ 133.23	\$ 1,598.70	
10th S. @ 32nd St.	\$ 133.23	\$ 1,598.70	
10th S. @ 38th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 39th St.	\$ 102.48	\$ 1,229.77	
10th S. @ 43rd St.	\$ 102.48	\$ 1,229.77	
10th S. @ 49th St.	\$ 102.48	\$ 1,229.77	
10th N. @ 57th St.	\$ 133.23	\$ 1,598.70	
2nd N. @ 3rd St.	\$ 99.52	\$ 1,194.29	
2nd N. @ 4th St.	\$ 99.52	\$ 1,194.29	
2nd N. @ 5th St.	\$ 99.52	\$ 1,194.29	
2nd N. @ 6th St.	\$ 99.52	\$ 1,194.29	
2nd N. @ 9th St.	\$ 99.52	\$ 1,194.29	
2nd N. @ 14th St.	\$ 77.86	\$ 934.32	
2nd N. @ 15th St.	\$ 77.86	\$ 934.32	
2nd N. @ 25th St.	\$ 77.86	\$ 934.32	
2nd N. @ 26th St.	\$ 77.86	\$ 934.32	
2nd N. @ 38th St.	\$ 102.48	\$ 1,229.77	
2nd N. @ 57th St.	\$ 133.23	\$ 1,598.70	
1st N. @ 2nd St.	\$ 77.86	\$ 934.32	
1st N. @ 3rd St.	\$ 77.86	\$ 934.32	
1st N. @ 4th St.	\$ 77.86	\$ 934.32	
1st N. @ 5th St.	\$ 77.86	\$ 934.32	
1st N. @ 6th St.	\$ 77.86	\$ 934.32	
1st N. @ 7th St.	\$ 77.86	\$ 934.32	
1st N. @ 9th St.	\$ 80.17	\$ 962.08	
1st N. @ 14th St.	\$ 77.86	\$ 934.32	
1st N. @ 15th St.	\$ 77.86	\$ 934.32	
1st N. @ 25th St.	\$ 77.86	\$ 934.32	
1st N. @ 26th St.	\$ 77.86	\$ 934.32	
1st N. @ Park Drive	\$ 102.48	\$ 1,229.77	
1st N. @ River Drive	\$ 133.23	\$ 1,598.70	
NW Bypass @ 3rd St.	\$ 102.48	\$ 1,229.77	
NW Bypass @ 6th St.	\$ 102.48	\$ 1,229.77	
NW Bypass @ 9th St.	\$ 102.48	\$ 1,229.77	
3rd St. NW @ 14th Ave.	\$ 102.48	\$ 1,229.77	
Smelter @ 5th St.	\$ 102.48	\$ 1,229.77	
Smelter @ 6th St.	\$ 133.23	\$ 1,598.70	
Smelter @ 8th St.	\$ 102.48	\$ 1,229.77	
Smelter @ 10th St.	\$ 102.48	\$ 1,229.77	
15th St. Bridge N.	\$ 102.48	\$ 1,229.77	
15th St. Bridge S.	\$ 102.48	\$ 1,229.77	
6th S. @ 14th St.	\$ 102.48	\$ 1,229.77	
6th S. @ 15th St.	\$ 102.48	\$ 1,229.77	
8th N. @ 14th St.	\$ 102.48	\$ 1,229.77	
8th N. @ 15th St.	\$ 102.48	\$ 1,229.77	
Central @ 14th St.	\$ 77.86	\$ 934.32	
Central @ 15th St.	\$ 77.86	\$ 934.32	
Central W. @ 3rd St.	\$ 133.23	\$ 1,598.70	
Central W. @ 6th St.	\$ 133.23	\$ 1,598.70	
Central W. @ 9th St.	\$ 102.48	\$ 1,229.77	
River Drive @ 9th St.	\$ 102.48	\$ 1,229.77	
River Drive @ 38th St.	\$ 102.48	\$ 1,229.77	
14th SW @ I315	\$ 133.23	\$ 1,598.70	
14th SW @ 16th Ave.	\$ 102.48	\$ 1,229.77	
Sign Maintenance for MDT	\$ 375.56	\$ 4,506.72	
<b>Totals</b>	<b>\$ 7,077.20</b>	<b>\$ 84,926.45</b>	<b>% Change</b>
	<b>FY 2008-09</b>	<b>\$ 81,282.00</b>	<b>4.48%</b>