

FAC 8541 Traffic Control Signals

FY25 SUC: \$1,380.11 / EA
Source: Inflated from previous FY using ENR labor and material cost indices to measure actual inflation
Original Source: Competitive Contract Awards

ANN ARBOR'S LED STREETLIGHT PROGRAM

SUMMARY

The City of Ann Arbor is installing LED streetlights in order to reduce lighting costs and greenhouse gas emissions. After successfully piloting an LED replacement for our downtown "globe" lights, the City received a \$630,000 grant from the Ann Arbor Downtown Development Authority to fund retrofits for over 1,000 downtown lights. This initial installation will save the City over \$100,000 per year, reducing annual greenhouse gas emissions by 267 tonnes CO₂e. In addition, testing will continue on LED replacements for neighborhood streetlights, with the eventual goal of replacing all of our public lighting with LEDs. Full implementation of LEDs would cut Ann Arbor's public lighting energy use in half and reduce greenhouse gas emissions by 2,200 tonnes CO₂e annually.

PROJECT HISTORY

Funding for public lighting is increasingly difficult as electric costs rise and available municipal funds get tighter. In its 2005-2006 budget, the City of Ann Arbor established a moratorium on new street lighting to help keep costs under control. City staff were tasked with finding ways to reduce public lighting costs. Like other cities, Ann Arbor had already replaced all its incandescent traffic signals with LEDs (light-emitting diodes). As with the traffic signals, LED streetlights, if the technology was sufficiently developed, could create significant energy and maintenance savings since LEDs reduce lighting energy requirements by one-half or more and last five times longer than conventional outdoor lighting technologies. In 2005, Ann Arbor committed to investigate LEDs for outdoor public lighting purposes as part of the ICLEI Great Lakes Climate Policy Project.

Initial research into past efforts with LED outdoor lighting in other municipalities like Honolulu and San Diego revealed failed efforts. These tests found that LED products had high costs and poor light output. To assess the current LED technologies, the city invited numerous LED manufacturers to provide test lights, which the City then installed at its own expense to evaluate the performance. Early lighting tests in 2006 were performed in the City Hall parking lot and showed improvement over the older LED technologies. Over the next two years, more successful technologies were demonstrated on city streets in the downtown area and in neighborhoods. Over the last two years of testing, city staff has seen a tremendous improvement in light output and color rendition from LED lighting manufacturers. While lighting distribution and uniformity remain a problem for the highly directional LEDs, we have found applications where the LED technology is ready to replace existing public lighting today.

Tests on LED replacements for our downtown pedestrian "globe" lights have been very successful. This retrofit globe from Lumecon houses LEDs on four panels that face down and out, directing the light toward the street and away from the sky. Each fixture draws 56 watts and is expected to last ten years, replacing fixtures that use 120 watts and only last two years. These globe lights are mounted on ten-foot poles. As a test, 25 of these LED globes, purchased

with help from our Downtown Development Authority (DDA), were installed to light one complete block in the Ann Arbor downtown.

With five times the lifetime and less than half the energy use, the lights have a 4.4 year payback. We are now planning to retrofit all of these downtown lights over the next two years. Funding for the downtown light conversions is being provided by a \$630,000 grant from the DDA. The downtown LED project will reduce annual greenhouse gas emissions by 267 tonnes CO₂e and save the city over \$100,000 annually. The DDA grant will be administered through the Ann Arbor Municipal Energy Fund, which ensures that a portion of the savings from the retrofits is paid back to the fund to pay for future retrofits.

Meanwhile, Ann Arbor will continue to test possible LED replacements for the remainder of our streetlights. If the project succeeds in retrofitting all of the streetlights in Ann Arbor, the annual greenhouse gas emissions reduction is expected to be around 2,200 tonnes CO₂e annually. All of the test installations have signs requesting public input, and the response from the community has been overwhelmingly positive. There seems to be agreement that Ann Arbor's LED streetlight future will indeed be bright.

MORE INFORMATION: BENEFITS OF LEDS

The primary benefits of LEDs are their reduced energy consumption, longer lifetime, directionality and controllability. The energy savings are 50% or more and the lifetime is estimated at 5 times longer which yields the excellent payback time of 4.4 years. The "instant-on" and dimming ability of LEDs will offer additional energy savings through control strategies that can brighten and dim based on time of day, ambient light, or any other control parameters desired. Motion sensors can turn LEDs on or off instantly, allowing lighting to be used only when needed. Typical outdoor lighting (MH or HPS) has a re-strike time of a few minutes before they can turn on and therefore cannot be used with motion sensors. The City of Ann Arbor is partnering with lighting control companies to explore these new possibilities with LED lights. Finally, because LEDs emit directional light, we have more control over what we light (streets and sidewalks) and what we don't (the night sky). This makes for easier compliance with the Dark Skies Initiative, which aims to reduce light pollution and its associated wildlife impacts.

Our test globe LED fixtures use half the energy of the bulbs they replace and cobrahead fixtures use 50 to 80 percent less energy than our current cobraheads. This reduces emissions of mercury from coal power plants which leads directly to reduced CO₂ emissions. Full implementation of LED streetlights could cut Ann Arbor's greenhouse gas emissions by over 2,200 tonnes CO₂-equivalent emissions.

One of the greatest advantages of LED fixtures is their lifetime, which reduces maintenance costs. At a ten-year lifetime (compared to two years for a metal halide bulb), city staff will need

to change far fewer bulbs, ballasts, and igniters. In fact, maintenance savings alone are sufficient to make LED fixtures cheaper on a lifecycle basis than conventional fixtures.

MORE INFORMATION: LIFE-CYCLE COST ANALYSIS

Continue with existing bulbs (2 year life)

	<u>Number</u>	<u>Cost</u>	
Bulb replacements	5	\$37	\$186
Bulb labor & equip	5	\$211	\$1,056
Ballast (10 yr life)	1	\$59	\$59
Igniter (10 yr life)	1	\$35	\$35
Energy cost (4,380 kWh)			\$325
			\$1,661

Change to LED bulb (10 year life)

	<u>Number</u>	<u>Cost</u>	
Bulb replacements	1	\$460	\$460
Bulb labor & equip	1	\$56	\$56
Energy cost (2,100 kWh)			\$182
			\$698

10-year Maintenance saving	\$819
10-year Energy saving	\$143
Total	\$962

Each LED replacement bulb saves \$962 in energy and maintenance costs over its ten-year lifetime. At this savings rate, the new bulb pays for itself in 4.4 years (\$423 / \$96). This analysis is based on our downtown globe lights, but initial inquiries into cobrahead fixtures suggest that the results will be even better.

MORE INFORMATION: TEST INSTALLATIONS

The first test fixtures that the City received and installed in our City Hall parking lot in the summer of 2005 were unimpressive. We got the sense that LED lighting manufacturers were not quite ready to meet our public lighting needs. Over the following year, however, the test fixtures we received from manufacturers increased markedly in quality and today Ann Arbor is seriously considering moving to LEDs for public lighting.



The second test installation consists of a series of overhead streetlights (called "cobraheads" because of their shape) in a residential neighborhood. These fixtures have not been purchased yet as the block of downtown globes have,



Holophane cobrahead

but are instead on loan from the manufacturers. Wattages vary from 50 to 80 watts for fixtures that replace 250-watt fixtures. Manufacturers of cobrahead replacements currently installed for testing include **Holophane, IntenCity, Leotek, Lumecon, and Millenia Technologies.**



Lumecon globes

To evaluate these fixtures, Ann Arbor is employing a four-part test process, with lights being assessed on light output, heat management (which affects lifetime), and general public input.

Light Output: The cobrahead replacements are installed on a residential street where the spacing allows for each fixture's light output to be judged independent of adjacent fixtures but where different fixtures can be easily compared. City staff is measuring light output and plans are in the works for a more involved public input process to evaluate the fixtures' aesthetics.

Heat Management: One of the most attractive characteristics of LEDs is their long lifetime, but this lifetime depends directly on the fixture's operating temperature. As a result, heat management testing is vital to identifying fixtures that achieve our goal of a ten-year life. City staff is measuring the operating temperature of fixtures to project the useful life of different test fixtures.

Energy Consumption: Each light is tested for electricity use in watts to verify energy savings.

Public Input: All the test installations have signs requesting public input, and the response from the community has been overwhelmingly positive (81 of 83 responses). The 81 positive responses emphasized the lack of light spilling out onto yards and house faces ("light trespass"). One negative response commented that the light was too harsh. The other negative comment reflects a minority opinion about the purpose of public lighting, objecting that the LED cobrahead no longer lit up their garage and yard and that the globe LEDs were creating a "dark cavern" through the downtown.



Test light public input sign

CONTACT INFORMATION

City of Ann Arbor

(734) 794-6000

Energy Office: Andrew Brix (energy@a2gov.org)

Holophane

www.holophane.com

IntenCity Lighting, Inc.

(479) 229-0013

www.intencitylighting.com

LEDTronics

(800) 579-4875

Leotek

(888) 806-1188

www.leotek.com

Lumecon LLC

(877) 564-3133

www.lumecon.com

Municipal: bobhahn@lumecon.com

Millenia Technologies

www.milleniotechnologies.com

Roger Lang: (217) 887-2770

MoonCell Inc.

(540) 429-6155

www.mooncell.com

Relume Technologies

(248) 969-3800

www.relume.com

Commercial Signage: Bill Langhorst
(wlanghorst@relume.com)

City of La Palma

Agenda Item No. 6



MEETING DATE: May 20, 2014

TO: CITY COUNCIL

FROM: CITY MANAGER

SUBMITTED BY: Mike Belknap, Community Services Director

AGENDA TITLE: First Amendment to the Agreement with Computer Service Company (CSC) for Traffic Signal Maintenance Services

PURPOSE:

The purpose of this report is to seek City Council approval for an amendment to the Agreement with Computer Service Company of Corona, California, for the Citywide Traffic Signal Maintenance Services, extending the term of the agreement through June 5, 2016.

BACKGROUND:

On June 5, 2011, the City entered into a three-year contract with Computer Service Company (CSC) of Corona, California for Citywide traffic signal maintenance with an optional two-year extension. CSC performs monthly signal maintenance services in addition to the extraordinary maintenance on as as-needed basis.

SUMMARY:

Computer Service Company has expressed their willingness to extend the contract for an additional two (2) year term, extending their agreement through June 5, 2016, and has requested a rate increase for the extension period. Following a cost analysis staff has determined the increase is justified and, according to the current agreement, would like to exercise our option for a two (2) year extension. The table below is a comparison of the current rates and the proposed rates:

ROUTINE MAINTENANCE RATES

	Current Unit Price	Current Monthly Total	Proposed Unit Price	Proposed Monthly Total
Full Traffic Signal Maintenance per intersection (21) per month	\$53	\$1113	\$60	\$1260

**Samples of Extraordinary Maintenance Costs
Labor and Equipment Rates**

Labor Position / Equipment	Current Rate	Proposed Rate
Bench Technician	\$72	\$90
Transportation Maintainer Level 1	\$65	\$76
Transportation Maintainer Level 2	\$55	\$68
Boom Truck/Crane	\$220	\$240
Bucket Truck	\$30	\$32
Service Truck	\$15	\$17
Compressor	\$25	\$27
Arrow Board	\$10	\$12
Replace 8" LED Red Indication	\$65	\$70
Replace 8" LED Green Indication	\$90	\$95
Replace 12" LED Red Indication	\$85	\$100
Replace 12" LED Green Indication	\$117	\$121
Replace LED Pedestrian Head Nodule	\$215	\$225

The cost for routine maintenance would increase by \$147 monthly for a total annual increase of \$1,764. Extraordinary maintenance costs are undetermined as repairs are performed on an emergency basis. It should be noted that CSC has not requested a rate increase since the commencement of the Agreement.

Computer Service Company has been performing the City's traffic signal maintenance since June 2006. They currently perform traffic signal maintenance for several cities in Southern California and their performance and response time has been excellent.

ALTERNATIVE:

The alternative to this Agreement Amendment would be to issue a Request for Proposals for the Citywide Traffic Signal Maintenance.

FISCAL IMPACT:

Sufficient funds for the Traffic Signal Maintenance contract are budgeted accordingly each Fiscal Year in account numbers 011-324-600 and 011-324-709.

RECOMMENDED ACTION:

It is recommended that the City Council amend the Agreement with Computer Service Company of Corona, California, for the Citywide Traffic Signal Maintenance Services, increasing the monthly routine maintenance costs and extraordinary maintenance costs, and extending the term of the agreement through June 5, 2016.

APPROVED:



Department Director



Administrative Services
Director



City Manager

Attachment: 1. Proposed Agreement and Attachments

FIRST AMENDMENT
AGREEMENT FOR MAINTENANCE OF TRAFFIC SIGNALS

COMPUTER SERVICE COMPANY

THIS FIRST AMENDMENT TO THE AGREEMENT FOR MAINTENANCE SERVICES (hereinafter, the "Agreement"), entered into as of **June 5, 2014**, by and between the CITY OF LA PALMA, a municipal corporation (hereinafter, the "City"), and **Computer Service Company**, a corporation (hereinafter, the "Consultant"). The Consultants and the City are hereafter together referred to as the "Parties" and each individually as a "Party."

RECITALS

- A. The parties hereto have previously entered into an Agreement for Maintenance of Traffic Signals, dated June 5, 2011, for services providing routine monthly maintenance and extraordinary maintenance of the traffic signals. A true and correct copy of this Agreement is attached hereto, marked "Exhibit B" and incorporated herein by this reference.
- B. The City desires to extend the Agreement with the Contractor for a period of two (2) years through June 5, 2016 for the Maintenance of Traffic Signals.

WHEREFORE, the parties desire to amend said Agreement as follows:

- 1. **Period Covered by Agreement.** Said service of Maintenance of Traffic Signals shall continue through June 5, 2016.
- 2. **Consideration.** For services rendered, the following amount of \$1260 for monthly routine maintenance costs, and fees or extraordinary maintenance shall apply as specified in "Exhibit A".
- 2. **Status of Agreement.** Except as noted in Section 1 above, all other terms of the Agreement dated June 5, 2011, shall remain in full force and effect.

IN WITNESS WHEREOF, this Agreement has been executed as of the date first written above.

CITY OF LA PALMA

By _____
Steve Shanahan
Mayor

ATTEST:

Laurie A. Murray, CMC
City Clerk

COMPUTER SERVICE COMPANY

By _____

[Title]

By _____

[Title]



COMPUTER SERVICE COMPANY
12907 E. GARVEY AVENUE, BALDWIN PARK, CA 91706
PH: (951) 738-1444 FAX: (626) 962-2521
STATE LICENSE NO. 171920

February 6, 2014

City of La Palma
Attn: Larry Baldwin
7822 Walker Street
La Palma, CA 90623-1771

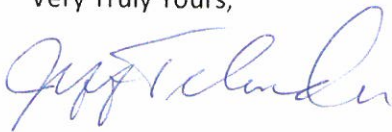
RE: Extension of the Traffic Signal Maintenance Agreement

Dear Mr. Baldwin,

Pursuant to the terms of our current agreement, Computer Service Company would like to express its willingness to extend your contract for an additional two year period for traffic signal maintenance from June 6, 2014 through June 5, 2016.

At this time, we would also like to request an across the board modest rate increase that will be in effect for the remainder of the contract extension period. If you should have any questions regarding this matter, please feel free to contact our office. We look forward to another two years of service with the City of La Palma.

Very Truly Yours,



Jeff Telander
Business Development Manager
Customer Service Company

Cc Justin Cataldo, Operations Manager
Tim Roberts, Senior Estimator

EXHIBIT "B"

COMPENSATION RATES

ROUTINE MAINTENANCE RATES

Item No.	Quant.	Item of Work	Unit Price	Total
1.	21	Full Traffic Signal Maintenance each intersection per month	\$ 60.00	\$ 1,260.00
Total of Item 1				\$ 1,260.00
X 12 months				\$ 15,120.00

LABOR AND EQUIPMENT RATES (for extraordinary maintenance)

Item No.	Labor Position	Straight Time Rate	Overtime Rate
1.	Bench Technician	\$ 90.00 per hr.	\$ 128.00 per hr.
2.	Transportation Maintenance Technician II	\$ 76.00 per hr.	\$ 114.00 per hr.
3.	Transportation Maintenance Technician I	\$ 68.00 per hr.	\$ 108.00 per hr.

Item No.	Equipment	Rate
1.	Boom Truck/Crane	\$ 240.00 per hr.
2.	Bucket Truck	\$ 32.00 per hr.
3.	Service Truck	\$ 17.00 per hr.
4.	Compressor	\$ 27.00 per hr.
5.	Arrow Board	\$ 12.00 per hr.

LUMP SUM COMPENSATION RATES

Item No.	Item	Rate
1.	Detector Loop Replacement (6' Round Loop, Type E, Including Sawcut Lead-in)	\$ <u>415.00</u> each
2.	Safety Light Bulb Replacement	\$ <u>85.00</u> each
3.	Internally Illuminated Street Name Sign Bulb Replacement	\$ <u>85.00</u> each
4.	Replace 8" LED Red Indication	\$ <u>70.00</u> each
5.	Replace 8" LED Yellow Indication	\$ <u>70.00</u> each
6.	Replace 8" LED Green Indication	\$ <u>95.00</u> each
7.	Replace 12" LED Red Indication	\$ <u>100.00</u> each
8.	Replace 12" LED Yellow Indication	\$ <u>95.00</u> each
9.	Replace 12" LED Green Indication	\$ <u>125.00</u> each
10.	Replace 12" LED Red Arrow Indication	\$ <u>95.00</u> each
11.	Replace 12" LED Yellow Arrow Indication	\$ <u>95.00</u> each
12.	Replace 12" LED Green Arrow Indication	\$ <u>121.00</u> each
13.	Replace LED Pedestrian Head Module (Hand/Man)	\$ <u>225.00</u> each
14.	Replace LED Pedestrian Head Module (Countdown)	\$ <u>325.00</u> each

AGREEMENT FOR MAINTENANCE OF TRAFFIC SIGNALS

THIS AGREEMENT, made and entered into this 5th day of June, 2011, by and between the CITY OF LA PALMA ("City"), and Computer Service Company ("Contractor").

WITNESSETH:

The parties hereto do agree as follows:

1. RECITALS: This AGREEMENT is made and entered into with respect to the following facts:

(a) That CITY, pursuant to Section 37103 of the Government Code of the State of California, desires to obtain certain services available through Contractor, specifically special engineering and maintenance skills relative to traffic signaling devices.

(b) That the principals of Contractor are well qualified to perform such services by reason of their special training and experience relating to the repair and maintenance of traffic signaling devices.

(c) That the public interest, convenience and necessity requires that City obtain such services upon the terms and conditions hereinafter set forth.

2. DEFINITIONS:

(a) "City Engineer" shall mean and refer to the City Engineer of the City of La Palma, acting personally or through his/her duly authorized agents, each agent acting only within the scope of authority delegated to him/her.

(b) "Police Chief" shall mean and refer to the Senior Management employee of the Police Department of the City of La Palma, acting personally or through his/her duly authorized agents, each agent acting only within the scope of authority delegated to him/her.

(c) The word "Contractor" shall mean and refer to Computer Service Company.

3. AUTHORITY OF THE CITY ENGINEER:

(a) The City Engineer shall decide any and all questions which may arise as to the quality or acceptability of materials furnished and work performed, and as to the manner of performance and rate of progress of the work. The City Engineer shall further decide all questions which arise as to the acceptable fulfillment of the agreement on the part of the Contractor; and all questions as to claims and compensations.

(b) The City Engineer's decision shall be final and he shall have authority to enforce and make effective such decisions and orders that the Contractor shall carry out promptly.

(c) At no time will any changes in timing or progression of the signals be made except with the approval and under the direct supervision of the City Engineer.

4. SERVICES:

(a) Traffic Signals: Contractor shall, during the term of this Agreement, service, maintain and overhaul, as set forth in detail below, traffic signal devices (i.e. time, semi-actuated and fully actuated traffic signals) at the locations set forth on EXHIBIT "A," attached hereto and incorporated herein by this reference, and at such other locations where such devices may from time to time be installed within the City. It is understood and agreed that all said labor, services, materials and equipment shall be furnished and said work performed and completed by the Contractor as an independent Contractor, subject to the inspection and approval of the City, the City Engineer's office, or inspectors or their representatives. When City desires to add traffic signal devices, to be served and maintained pursuant to this Agreement, it shall notify Contractor of such added signal devices at least ten (10) days in advance of the time such service shall commence. In the event any signals are installed, which are a more complicated type than those shown on Exhibit "A," these signals may be added to the maintenance contract at a price mutually satisfactory to the Contractor and the City.

The services to be performed by Contractor hereinunder shall consist of a maintenance program including, but not limited to the following:

i) The inspection, cleaning and adjustment of each controller unit, and the repair and replacement of any and all defective parts; such inspection, cleaning and adjustment shall take place as to each unit at least once per calendar month.

ii) The Contractor shall relamp on a group relamping basis. The relamping period shall be based on an 80% depletion curve, not to exceed twelve (12) months. Lamps shall be General Electric, Sylvania, Westinghouse, or City-approved equal.

iii) The replacement and/or repair of any and all defective parts of the controller mechanisms of any unit, or any part thereof, as may be necessary for the operation thereof.

iv) The cleaning, polishing, and inspection of all lenses and reflectors in each unit at the time the signal is relamped. All broken or deteriorated parts will be replaced or changed as necessary.

v) The maintenance of a patrol to insure the prompt replacement of burned out lamps and repair of controller malfunctions, and to ensure the traffic signal progression of all units according to timing relationships determined by the City Engineer.

vi) The servicing of the signal systems on an emergency basis in the event of malfunction of the controller or signal systems.

vii) Painting of Equipment. At the request of the City, the Contractor shall furnish a written estimate for the painting of the equipment. The painting of the equipment shall commence thirty (30) days after approval and be completed within sixty (60) days of commencement. Equipment that shall be painted shall include signal heads, pedestrian heads, back plates, service cabinets, pedestrian buttons, and controller cabinets.

5. ANSWERING SERVICE CALLS: The Contractor shall maintain a 24-hour emergency service so that it may be contacted at any hour of the day or night and will be required to answer different types calls, as specified below, within certain time limits. The Contractor shall supply the City Engineer and the Police Chief with a telephone number from which its radio operator may be contacted at all hours.

(a) Light out calls. Two separate signal head indications will be required for each direction of traffic at all times. When this number falls below two, the Contractor shall answer the light out call as soon as possible, not to exceed two hours, day or night. In the event a light out call is received with the report that two indications are still remaining, the Contractor shall answer the call within 24 hours. It shall be the responsibility of the Contractor to determine the number of indications in operation.

(b) Emergency calls. Except as set forth in Paragraph (a) above, if the signal is malfunctioning in any manner, the Contractor shall answer the call immediately, regardless of the fact that the controller may have been switched to flashing operation by the Police Department. The word "immediately" is construed to mean with all possible haste, and shall not exceed one hour.

(c) Equipment required. The Contractor shall be equipped with spare parts sufficient to place the signal back in operation for ordinary trouble calls. In those cases where a complex controller or component has to be repaired, the Contractor shall be required to furnish and install a substitute controller or component until the defective controller or component is repaired or replaced to its original condition as originally installed.

6. EXTRAORDINARY MAINTENANCE: Whenever during the course of this Agreement any part of the signal system is damaged by collision, Acts of God or malicious mischief, excepting damage resulting from the negligence of the Contractor, the repair of such damage will be paid for as extraordinary maintenance according to the terms set forth in EXHIBIT "A," attached hereto and incorporated herein by this reference. In addition to this, the replacement of vehicle detectors, pedestrian signal neon tubes and transformers, fluorescent street name signs, or any revision work the City may request the Contractor to perform will be paid for as extraordinary maintenance. All non-emergency extraordinary maintenance will be subject to prior approval of the Director of Public Works/City Engineer. Emergency extraordinary maintenance shall be considered as damage resulting from collision, Acts of God or malicious mischief. Under an extraordinary emergency situation, the Contractor shall use reasonable judgment as to the extent of the hazard present and perform whatever work is necessary to put the signal system back into service. If permanent repairs are not immediately possible, Contractor shall put the signal in temporary operating condition. If service cannot be reestablished, temporary four-way Stop signs (36" size minimum) and advance warning signs ("Stop Ahead") shall be placed to control the traffic. On arterial streets, a minimum of two (2) Stop signs shall be required for each direction of traffic.

7. COMPENSATION: City shall pay to Contractor the sum in accordance with the proposals in EXHIBIT "B" per month for each intersection as listed in EXHIBIT "C", for the traffic signal maintenance program set forth in Section 4 (a) of this Agreement.

Contractor shall be entitled to additional compensation for extraordinary maintenance. Billing for extraordinary maintenance shall include only the following:

- (a) Labor and equipment as listed in EXHIBITS "B" and "C".
- (b) Cost of materials plus 15 percent.

On a monthly basis, the Contractor and the City Engineer or his representative will meet for approximately one hour at a mutually agreed upon time and place. The Contractor shall deliver to the City Engineer or his representative at this meeting, not to be held later than the 10th of the month, a complete written record of all work that was performed on the City's traffic signal equipment during the previous month. Such record shall include the location of each separate service, the day and approximate time, and the reason for the service, whether routine, emergency, or extraordinary, and the number of hours spent.

Upon receipt of each monthly invoice and certification by the City Engineer, the City will, within thirty (30) days after receipt of such invoice, pay to the Contractor all certified sums.

8. EXTENSION OF AGREEMENT: Sixty (60) days prior to the end of the agreement period, the City Engineer will contact the Contractor and determine if Contractor desires the City to extend the Agreement. In the event the Contractor is willing to extend the agreement the City will determine if justification exists for increase or decrease in the monthly service cost per intersection and whether extraordinary maintenance charges for labor and equipment (service type) is applicable. Following this cost analysis, the City Engineer will present the cost increase and/or decrease to the City Council for approval, and ask the Council to extend the basic contract for an additional two-year period. The provisions of the balance of the Agreement will remain applicable. To the extent that they are modified, the monthly maintenance per intersection costs and EXHIBITS "B" and "C" shall be attached as applicable to this Agreement, and signed by the City and the Contractor.

9. LICENSE: The Contractor shall take out and maintain during the life of this Agreement a City Business License.

10. INSURANCE AND LIABILITY: The Contractor shall not commence work under this Agreement until it has secured all types and amounts of insurance required under this section, nor shall it allow any Subcontractor to commence work on any subcontract until all similar insurance required of the Subcontractor has been obtained. Without limiting Contractor's indemnification obligations, Contractor shall procure and maintain, at its sole cost and for the duration of this Agreement, insurance coverage as provided below, against all claims for injuries against persons or damages to property which may arise from or in connection with the performance of the work hereunder by Contractor, its agents, representatives, employees, and/or subcontractors. In the event that Contractor subcontracts any portion of the work, the contract between the Contractor and such subcontractor shall require the subcontractor to maintain the same policies of insurance that the contractor is required to maintain pursuant to this Section 10.

(a) Insurance Coverage Required. The policies and amounts of insurance required hereunder shall be as follows:

i) General Liability (including premises and operations, contractual liability, personal injury, independent contractor's liability): Three Million Dollars (\$3,000,000.00) per occurrence.

ii) Automobile Liability (including owned, non-owned, leased, and hired autos): One Million Dollars (\$1,000,000.00), single limit, per occurrence for bodily injury and property damage.

iii) Workers Compensation and Employer's Liability Workers Compensation Insurance (if Contractor is required to have) in an amount required by the laws of the State of California and Employer's Liability Insurance in the amount of One Million Dollars (\$1,000,000.00) per occurrence for injuries incurred in providing services under this Agreement.

iv) Professional Liability (covering errors and omissions): One Million Dollars (\$1,000,000.00) per claims made.

(b) General Requirements. Contractor's insurance:

i) Shall be issued by an insurance company which is an admitted carrier in the State of California and maintains a Secure Best's Ratings of "-A" or higher; unless otherwise approved by City;

ii) General Liability, Automobile Liability and Employer's Liability shall name the City, and its officers, officials, employees, agents, representatives and volunteers (collectively hereinafter "City and City Personnel") as additional insureds and contain no special limitations on the scope of protection afforded to City and City Personnel. All insurance provided hereunder shall include the appropriate endorsements.

iii) Shall be primary insurance and any insurance or self-insurance maintained by City or City Personnel shall be in excess of Contractor's insurance and shall not contribute with it;

iv) Shall be "occurrence" rather than "claims made" insurance, excluding Professional Liability;

v) Shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability;

vi) Shall be endorsed to state that the insurer shall waive all rights of subrogation against City and City Personnel, excluding Professional Liability;

vii) Shall be written by good and solvent insurer(s) admitted to do business in the State of California and approved in writing by City; and

viii) Shall be endorsed to state that coverage shall not be suspended, voided, cancelled, reduced in coverage or in limits, non-renewed, or materially changed for any reason, without thirty (30) days prior written notice thereof given by the insurer to City by U.S. mail, or

by personal delivery, except for nonpayment of premiums, in which case ten (10) days prior notice shall be provided.

(c) Deductibles. Any deductibles or self-insured retentions must be declared to and approved by City prior to the execution of this Agreement by City.

(d) Evidence of Coverage. Contractor shall furnish City with certificates of insurance demonstrating the coverage required by this Agreement which shall be received and approved by City not less than five (5) working days before work commences.

(e) Workers Compensation Insurance. If Contractor is required to provide Workers' Compensation Insurance, Contractor shall file with City the following signed certification:

"I am aware of, and will comply with, Divisions 4 and 5 of the California Labor Code by securing, paying for, and maintaining in full force and effect for the duration of the contract, complete Workers' Compensation Insurance, and shall furnish a Certificate of Insurance to City before execution of the Agreement."

In the event Contractor has no employees requiring Contractor to provide Workers' Compensation Insurance, Contractor shall so certify to City in writing prior to City's execution of this Agreement. City and City Personnel shall not be responsible for any claims in law or equity occasioned by failure of the Contractor to comply with this section or with the provisions of law relating to Workers' Compensation.

11. INDEMNIFICATION: Contractor shall indemnify, defend, and hold the City and City Personnel harmless from and against any and all actions, suits, claims, demands, judgments, attorney's fees, costs, damages to persons or property, losses, penalties, obligations, expenses or liabilities (herein "claims" or "liabilities") that may be asserted or claimed by any person or entity arising out of the willful or negligent acts, errors or omissions of Contractor, its employees, agents, representatives or subcontractors in the performance of any tasks or services for or on behalf of City, whether or not there is concurrent active or passive negligence on the part of City and/or City Personnel, but excluding such claims or liabilities arising from the sole active negligence or willful misconduct of the City or City Personnel. In connection therewith:

(a) Contractor shall defend any action or actions filed in connection with any such claims or liabilities, and shall pay all costs and expenses, including attorney's fees incurred in connection therewith.

(b) Contractor shall promptly pay any judgment rendered against City or any City Personnel for any such claims or liabilities.

(c) In the event City and/or any City Personnel is made a party to any action or proceeding filed or prosecuted for any such damages or other claims arising out of or in connection with the negligent performance or a failure to perform the work or activities of Contractor, Contractor shall pay to City any and all costs and expenses incurred by City or City Personnel in such action or proceeding, together with reasonable attorney's fees and expert witness fees.

12. OBSERVING LAWS AND ORDINANCES: The Contractor shall keep itself fully informed of all existing and future state and federal laws and all county and city ordinances and regulations which in any manner affect the conduct of the work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over same. If any discrepancy or inconsistency is discovered in the Contract Documents in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to the City Engineer in writing. The Contractor shall at all times observe and comply with and shall cause all its agents and employees to observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees, and shall protect, indemnify and defend the City, the City Engineer, and all of their respective officers, employees, and representatives against any claim or assertion of liability, or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by the Contractor or its employees.

(a) Labor Code of California. The Contractor's attention is directed to Division 2, Part 7, Chapter 1 of the Labor Code of the State of California and especially to Article 2 (Wages), and Article 3 (Working Hours), thereof.

i) In accordance with Section 1773 of the Labor Code, the City Council of the City of La Palma has found and determined the general prevailing rates of wages in the locality in which the public work is to be performed are those contained in that certain document entitled PREVAILING WAGE SCALE, copies of which are maintained at City Hall, and are available to any interested party on request. Contractor shall post a copy of said document at each job site.

ii) In accordance with Section 1773.1 of the Labor Code the Contractor shall pay travel and subsistence payments to each worker needed to execute the Work, as such travel and subsistence payments are defined in the applicable collective bargaining assurances filed with the Department of Industrial Relations.

iii) The Contractor is aware of and will comply with the provisions of Labor Code Section 1776, including the keeping of payroll records and furnishing certified copies thereof in accordance with said section. The Contractor shall submit certified payrolls to the City Engineer, including certified payrolls for all Subcontractors, at any tier, performing work on the site, regardless of the dollar amount or type of subcontract, on a weekly basis. If by the 15th of the month, the Contractor has not submitted satisfactory payrolls for all work performed during the monthly period ending on or before the 1st of that month, the City will retain an amount equal to ten (10%) percent of the estimated value of the work performed during the month from the next monthly estimate. Retention for failure to submit satisfactory payrolls shall be additional to all other retention provided for in the Contract.

iv) Pursuant to Labor Code Section 1810 it is stipulated hereby that eight (8) hours labor constitutes a legal day's work hereunder.

v) Pursuant to Labor Code Section 1813, it is stipulated hereby that the Contractor shall, as a penalty to the City, forfeit \$25 for each worker employed in the execution of this Contract by the Contractor or by any subcontractor hereunder for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one

calendar day and forty (40) hours in any one (1) calendar week in violation of the provisions of Article 3 (commencing with Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code.

vi) The Contractor is aware of and will comply with the provisions of Labor Code Sections 1777.5 and 1777.6 with respect to the employment of apprentices. Pursuant to Section 1777.5 it is hereby stipulated that the Contractor will be responsible for obtaining compliance therewith on the part of any and all subcontractors employed by him or her in connection with this Contract.

vii) Pursuant to Labor Code Section 1775, it is hereby stipulated that the Contractor shall, as a penalty to City, forfeit not more than \$50 for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the Director of the Department of Industrial Relations for the work or craft in which the worker is employed for the Work under the contract by Contractor or by any subcontractor under the Contractor.

13. ASSIGNMENT: The Contractor shall not assign this Agreement or any portion hereof, without first obtaining the written consent of City. If such assignment is made or attempted by Contractor, City, at its sole option, may terminate this Agreement upon the giving of a 24-hour written notice to Contractor of such termination.

14. TERM OF CONTRACT: This Agreement shall be in full force and effect for a period of three years through June 5, 2014. However, either, party, at its discretion, shall have the right to terminate this Agreement at anytime by giving sixty (60) days advance written notice.

15. PERFORMANCE: If the Contractor should neglect to prosecute the work properly, or fail to perform any provisions of this Agreement, the City, after five (5) days written notice to the Contractor, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor, provided, however, that the Director of Public Works/City Engineer shall approve such action and certify the amount thereof to be charged to the Contractor.

16. NOT AN AGENT OF CITY: It is expressly understood and agreed that the Contractor herein named in the furnishing of all labor, services, materials and equipment, and performing the work as provided in this contract, is acting as an independent contractor and not as an agent, servant or employee of the City.

17. WARRANTIES: Except for the manufacturer's factory warranty, the Contractor disclaims all warranties with respect to materials supplied hereunder, and further disclaims any and all liability for failure to perform or delay in performance hereunder where the same is due in whole or in part to any cause beyond Contractor's reasonable control, such as, but not limited to, fire, flood, earthquake, lightning strike, or other labor difficulty.

18. ENTIRE AGREEMENT; CONSTRUCTION; AMENDMENT: This Agreement full, complete and final agreement between the parties relating to the subject matter hereof, and no prior oral or written agreement or understanding shall have any force or effect. This Agreement shall be construed in accordance with the laws of the State of California. This Agreement may not be modified or amended except by a written instrument signed by authorized representatives of the City and Contractor.

not be modified or amended except by a written instrument signed by authorized representatives of the City and Contractor.

IN WITNESS WHEREOF, the City Council of the City of La Palma caused the Agreement to be subscribed by its Mayor and City Clerk and said Contractor has executed or caused this Agreement to be executed by its duly authorized officer(s).

Dated: May 17, 2011

CITY OF LA PALMA

Ralph D. Rodriguez
Ralph D. Rodriguez
Mayor

Dated: May 17, 2011

ATTEST:

Laurie A. Murray
Laurie A. Murray, CMC
City Clerk

CONTRACTOR

By: [Signature]

Name Vincent P. Mauch

Title CFO for Computer Service Co

By: [Signature]

Name Gayle C. Kappelman

Title Secretary for Computer Service Co

APPROVED AS TO FORM:

[Signature]
City Attorney

EXHIBIT "A"

SCOPE OF SERVICES

SCOPE OF SERVICES:

1. General

During the term of this Agreement, the Contractor shall furnish all tools, equipment, apparatus, facilities, labor, services and material to perform all work necessary to maintain in good and workmanlike manner the traffic signal facilities and City owned street lighting, in accordance with this defined scope of work.

The Contractor shall be equipped with spare parts sufficient to return a defective traffic signal to operation following ordinary trouble calls. Since the primary traffic signal controllers/equipment used in the City of La Palma is manufactured by Econolite Products, the Contractor shall have on hand at least two spare Econolite ASC/2-2000 controllers and one ASC/2M-1000 Master for use in the City of La Palma. In addition, other spare equipment shall include bus interface units (BIU's), power supply units, and malfunction management units (MMU's).

The Contractor shall provide a Maintenance Transportation Technician with a minimum certification from the International Municipal Signal Association (IMSA) Level II Technician. Transportation Maintainers, Levels 1 and 2, may also be used to perform the scope of work as allowed by the Department of Industrial Relations. The City reserves the right at all times to concur with the Contractor's assignment of personnel to the City. If necessary, the Contractor shall replace any personnel assigned to the City whose performance is considered unacceptable by the City, or the standards established per this scope of services.

2. Specifications

All signal work shall be performed in accordance with the current Standard Plans and Section 86 of the Standard Specifications for the State of California, Department of Transportation, and the current City of La Palma Standard Plans. All work performed or equipment/parts supplied by the Contractor shall be subject to the inspection and approval of the City. Failure to pass inspection on any maintenance, repair, or service item will result in non-payment for that item until such time as the Contractor can upgrade the item to an acceptable condition.

3. Additions to System

The Contractor shall maintain, at the same unit price, additional traffic signals as they are added to the list of locations to be maintained. In the event notification is made at other than the beginning of the month, payment for that month shall be prorated from the day the Contractor is notified.

4. Maintenance Records

The Contractor shall maintain a record of all service calls and work performed upon the traffic signal facilities listing dates, hour of day, and description of the work performed. A copy of this record shall be maintained at all times within the traffic signal controller cabinet at each traffic signal location.

A summary log sheet giving a brief description of all routine and extraordinary maintenance activities shall be attached to each associated monthly invoice. Invoices will not be paid until the summary has been received.

5. Notification

The Contractor shall notify one of the City's designated representatives by telephone within twenty-four hours or the next business day regarding alterations to the operation of any traffic signal or the installation/removal of any substitute controller or component.

6. Types of Traffic Signal Equipment

The bid prices for both the routine and extraordinary maintenance shall apply to the types of traffic signal controllers, accessories, and systems as may exist in the City now or that may be installed during the life of the contract.

7. Public Convenience and Safety

The Contractor shall so conduct his operation as to cause the least possible obstruction and inconvenience to the public.

The Contractor shall furnish, erect, and maintain such fences, barriers, lights, warning devices, and signs in compliance with the current Work Area Traffic Control Handbook (WATCH), or as may deemed necessary by the Director of Public Works or his designated representative to give adequate warning to the public at all times.

8. Routine Maintenance

A. Traffic Signals

The Contractor shall provide a continuing, comprehensive, routine maintenance program designed to eliminate or reduce the incidents of malfunctions, operations complaints, and extend the useful life of the traffic signal equipment at the locations noted on Exhibit "C".

The services to be performed on the traffic signals/flashing beacons by the Contractor shall consist of a preventative maintenance program, including but not limited to the following:

- To inspect, clean, and adjust each controller unit and controller cabinet and make a routine inspection once per calendar month. All controller settings shall

be checked using the cabinet timing sheets to ensure that all settings are correct. Any discrepancies shall be reported to the designated City representative. The Contractor agrees to maintain a record in each controller cabinet showing the date and time checked. Controllers which are replaced for repair must be reported to the City within 24 hours of the replacement.

- The replacement or repair of any and all defective parts of the traffic signal system which may cause a signal malfunction or failure, as the occasion arises per routine maintenance, such as the signal controller, flashers, vehicle detectors, etc.
- The Contractor shall replace the air filter elements in all traffic signal cabinets every six months. The replacement date shall be noted on the maintenance log kept in the cabinet.

B. Safety Lighting/Internally Illuminated Street Name Signs

The routine maintenance bid price for traffic signals shall include one night-time inspection each calendar month to check the safety lighting and internally illuminated street name signs (IISNS) at each signalized intersection noted on Exhibit "C". The price for this monthly night-time inspection shall be included as part of the routine maintenance of the intersection. Replacements of burned-out lamps shall be at the rates noted on Exhibit "B" compensation rates. All other repairs to the safety lighting and IISNS shall be billed under extraordinary maintenance.

C. Conflict Monitors/MMU's

The Contractor shall test the conflict monitors or MMU's using the MT-180 conflict monitor tester or other approved tester on an annual basis. The Contractor shall supply a report for each test conducted. The testing of conflict monitors shall be included in the lump sum bid for routine maintenance of the intersection. Any conflict monitor that does not pass the required test shall be repaired or replaced and billed as extraordinary maintenance.

E. Traffic Signal Master/Interconnect

The Contractor shall provide trained technicians/personnel qualified in the field testing of an Econolite ASC/2M-1000 traffic signal master and the related closed-loop traffic signal interconnect system. Technicians assigned to the installation or repair of the City's traffic signal interconnect system shall have training or be directly supervised by a technician with experience in the installation and handling of twisted pair hardwire interconnect cable. The repair or replacement of traffic signal interconnect system shall be billed as extraordinary maintenance.

F. Payment for Routine Maintenance

The Contractor shall submit monthly billings for routine maintenance at the lump sum price per traffic signal location and for the monthly safety light survey. Said compensations shall include all labor, materials, equipment, overhead and profits for routine services in the price bid per intersection or location as detailed in the scope of services and no extra compensation will be allowed.

9. Emergency Service

The Contractor shall maintain a 24-hour emergency service for contact at any hour of the day or night and will be required to answer different types of calls, as specified below, within certain time limits.

A. Light Out Calls

Two separate indications, one of which must be the mast arm indication, will be required for each direction of traffic at all times. When this number falls below two, or the mast arm indication is out, the Contractor shall answer the light out call as soon as possible, not to exceed two hours, day or night. If a light out call is received with the report that two indications are remaining, one of which must be the mast arm indication, the Contractor shall answer the call within 24 hours. Light out calls for safety lighting will be answered within 24 hours.

B. Emergency Calls

Whenever a traffic signal is malfunctioning in any manner, the Contractor shall answer the call immediately, regardless of the fact that the controller may have been switched to flashing operation by the Police Department. The word "immediately" is construed to mean "with all possible haste", and shall not exceed one hour under normal circumstances.

The Contractor shall be equipped with spare parts sufficient to place the traffic signal back in ordinary operation. In those cases where a complex component has to be repaired, the Contractor shall be required to furnish and install a substitute component until the defective component is repaired. In the case of a controller, the substitute controller must be capable of operating with the City's Econolite closed loop traffic signal interconnect system, if the existing controller had that same capability.

The Contractor shall make the required repairs to restore or maintain the traffic signal in good working condition. The Contractor shall supply the Director of Public Works and the Police Department with a telephone number from which his radio operator may be contacted at all hours.

10. Extraordinary Maintenance

Extraordinary maintenance shall be defined as:

- Repair/services of damages resulting from collisions which have caused dislocation of poles or equipment, vandalism, street rehab/construction related projects, or natural or civil disasters.
- Additional extraordinary maintenance will include modifications to traffic signal equipment such as, but not limited to, upgrades of controller cabinets and controller components, LED signal indication replacements, LED pedestrian indication replacements, painting of traffic signal cabinets and signal heads, installation of new signal indications, lenses or framework, installation of signal loop detectors, installation of traffic signal interconnect cable or components or replacement of obsolete equipment.
- The Contractor may be required to assist in the final inspection of new installation of traffic signals, traffic signal interconnect, loop detectors or other traffic related type projects.

A. Notifications

The Contractor shall report to the Director of Public Works or his authorized representative the said conditions and provide satisfactory evidence that replacement is necessary per terms of extraordinary work. The Contractor shall provide cost estimates, including labor, equipment, and all incidentals to perform said work. No work shall proceed without the Director of Public Works or his authorized representative's authorization except in emergencies where injury or property damage may result without prompt response.

B. Payment for Extraordinary Maintenance

Upon the receipt of an itemized invoice within thirty days of completion of the work, the City shall compensate the Contractor for such repairs required beyond the scope of routine maintenance as follows:

Materials

The City shall pay the Contractor for materials used in extraordinary maintenance the Contractor's cost from the supplier plus the percentage mark-up, which shall in no case be greater than 15%. All materials and parts shall be new or have the approval of the Director of Public Works or his designated representative if otherwise. The City has the right to inspect the Contractor's records to verify any material costs used in extraordinary maintenance.

Direct Labor

The Contractor shall present with his monthly invoice a record of hours spent in extraordinary maintenance of traffic signals and appurtenances per intersection or location. The City shall pay the Contractor for such hours of extraordinary maintenance at the hourly rates specified in Exhibit "B". Said hourly rates shall be the total cost to the City. The rates shall include all compensation for wages, profit, overhead, and any fringe benefits.

Equipment

The City shall pay the Contractor for equipment used in extraordinary maintenance on a per hour basis as specified in Exhibit "B" and per the appropriate required equipment to complete the work.

The Contractor's listing of per-hour equipment rates shall constitute total rates to be paid by the City when specified equipment is used. No additional payment of any kind shall be paid for equipment except as specified on Exhibit "B" for per hour rates.

Any other equipment that may be needed to be rented in order to perform the extraordinary maintenance that is not listed shall be billed at the local rental rate plus the percentage mark-up, which in no case shall be greater than 15%. Documentation of the rented equipment with the applicable rental rates must be submitted with any invoices.

No additional compensation shall be paid for transporting the equipment to or from the job site.

EXHIBIT "B"

COMPENSATION RATES

ROUTINE MAINTENANCE RATES

Item No.	Quant.	Item of Work	Unit Price	Total
1.	21	Full Traffic Signal Maintenance each intersection per month	\$ <u>53.00</u>	\$ <u>1,113.00</u>
Total of Item 1				\$ <u>1,113.00</u>
X 12 months				\$ <u>13,356.00</u>

LABOR AND EQUIPMENT RATES (for extraordinary maintenance)

Item No.	Labor Position	Straight Time Rate	Overtime Rate
1.	Maintenance Transportation Technician	\$ <u>72</u> per hr.	\$ <u>108</u> per hr.
2.	Transportation Maintainer Level 2	\$ <u>65</u> per hr.	\$ <u>97.50</u> per hr.
3.	Transportation Maintainer Level 1	\$ <u>55</u> per hr.	\$ <u>82.50</u> per hr.

** Holiday and Double Time Rates will Apply **

Item No.	Equipment	Rate
1.	Boom Truck/Crane w/operator	\$ <u>220</u> per hr. 4 hr. Min.
2.	Bucket Truck	\$ <u>30</u> per hr.
3.	Service Truck	\$ <u>15</u> per hr.
4.	Compressor	\$ <u>25</u> per hr.
5.	Arrow Board	\$ <u>10</u> per hr.

LUMP SUM COMPENSATION RATES

Item No.	Item	Rate
1.	Detector Loop Replacement (6' Round Loop, Type E, Including Sawcut Lead-In)	\$ <u>390</u> each
2.	Safety Light Bulb Replacement	\$ <u>80</u> each
3.	Internally Illuminated Street Name Sign Bulb Replacement	\$ <u>80</u> each
4.	Replace 8" LED Red Indication	\$ <u>65</u> each
5.	Replace 8" LED Yellow Indication	\$ <u>65</u> each
6.	Replace 8" LED Green Indication	\$ <u>90</u> each
7.	Replace 12" LED Red Indication	\$ <u>85</u> each
8.	Replace 12" LED Yellow Indication	\$ <u>85</u> each
9.	Replace 12" LED Green Indication	\$ <u>136³⁰</u> each
10.	Replace 12" LED Red Arrow Indication	\$ <u>80</u> each
11.	Replace 12" LED Yellow Arrow Indication	\$ <u>80</u> each
12.	Replace 12" LED Green Arrow Indication	\$ <u>117</u> each
13.	Replace LED Pedestrian Head Module	\$ <u>215</u> each
14.	Replace LED Pedestrian Count Down Type Head Module	\$ <u>315</u> Each

EXHIBIT "C"

LOCATION OF TRAFFIC SIGNALS TO BE MAINTAINED

1. La Palma & Denni
2. La Palma & Redford
3. La Palma & Bravo
4. Moody & Crescent
5. Moody & La Luna
6. Moody & Windsong
7. Moody & La Palma
8. Moody & Sharon
9. Moody & Houston
10. Walker & JFK
11. Walker & La Luna
12. Walker & La Palma
13. Walker & LP Hospital
14. Walker & Civic Center
15. Walker & ROW
16. Walker & Marview
17. Walker & Houston
18. Walker & Orangethorpe
19. Walker & 183rd
20. Orangethorpe & Centerpointe
21. Valley View & Centerpointe

The previous SUC of \$2940.62 was based upon competitive contracts awarded by cities during 2001 through 2007 for city wide maintenance.

Since that time the Energy Independence and Security Act of 2007 has impacted the manufacture of light bulbs by requiring energy efficiency, phasing out traditional incandescent bulbs and ushering in LEDs for many uses, including traffic signals. This switch and the increased reliability of signal mechanisms have resulted in significant decreases in the cost of operating and maintaining traffic signals. For example, cost reductions in maintenance of 75% and 61% have been reported by the cities of Portland, Oregon and Ann Arbor, Michigan.

A competitive award for signal maintenance of 21 intersections utilizing LED based signals for the City of La Palma CA was for \$60/month/intersection (\$720/yr/intersection). (2014)

A competitive award for signal maintenance by the Morris County (NJ) Cooperative Pricing Council was for \$440 per year per intersection. (July 2016)

A competitive award by Glendale, CA to Siemens was for \$89.14/mo/intersection (\$1069.70/yr/intersection). (2013)

This table lists the annual cost per intersection, provides an area adjustment and inflation adjustment, and averages the three competitive prices:

Entity	Year Awarded	Award Price	Area Cost Factor	Inflation Adjustment	FY18v19 Price
La Palma CA	2014	\$ 720.00	1.20	1.0708	\$ 925.19
Morris County NJ	2016	\$ 440.00	1.30	1.0257	\$ 586.72
Glendale CA	2013	\$ 1,070.00	1.20	1.0947	\$ 1,405.64
Average Cost per Intersection					\$ 972.51



**CITY OF GLENDALE, CALIFORNIA
REPORT TO THE:**

Joint ☐ City Council ☒ Housing Authority ☐ Successor Agency ☐ Oversight Board ☐

June 4, 2013

AGENDA ITEM

Report: Maintenance of Traffic Signals and Other Traffic-Related Electrical Devices

- 1) Motion authorizing the City Manager, or his designee, to execute an agreement with Siemens Industry, Inc. for the maintenance services of traffic signals and other traffic-related electrical devices.

COUNCIL ACTION

Public Hearing ☐ Ordinance ☐ Consent Calendar ☒ Action Item ☐ Report Only ☐

Approved for _____ calendar

ADMINISTRATIVE ACTION

Submitted by:
Stephen M. Zurn, Director of Public Works

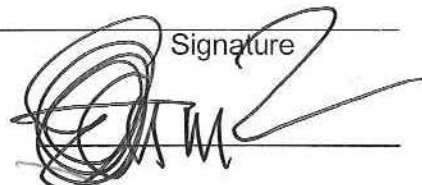

Prepared by:
Wayne C. Ko, P.E., Principal Traffic Engineer

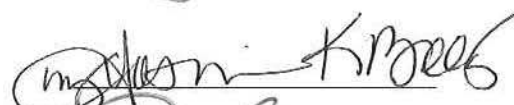

Approved by:
Scott Ochoa, City Manager



Reviewed by:
Roubik Golanian, P.E., Deputy Director of Public Works/City Engineer

Yasmin K. Beers, Assistant City Manager

Michael J. Garcia, City Attorney

Signature



RECOMMENDATION

Staff respectfully recommends City Council's approval of the attached motion authorizing the City Manager, or his designee, to execute a five-year agreement with Siemens Industry, Inc. to provide maintenance services for the City's traffic signals and other traffic-related electrical devices.

BACKGROUND/ANALYSIS

In Glendale, traffic signals are maintained by a private contractor because staff believes it is more economical than for the City to employ its own signal maintenance crew. Since July of 2008, Siemens Industry Inc. (formerly Republic ITS) has been maintaining the City's traffic signals and other traffic-related electrical devices. These devices currently consist of 232 traffic signals, 15 hard-wired flashing beacon systems, 23 solar-powered wireless flashing beacon systems, 13 in-roadway warning light (IRWL) systems, and other miscellaneous electrical devices.

The current contract with Siemens will expire on June 30, 2013. In March 2013, staff issued a request for proposals (RFP) for the maintenance of traffic signals and other traffic-related electrical devices. Proposals were received from three contractors: Siemens Industry Inc., Wescorp, and Aegis ITS. An evaluation committee consisting of Glendale's Public Works Engineering Division staff and a representative from the City of Pasadena reviewed all the proposals and conducted an interview with each contractor on April 17, 2013. The contractors were evaluated based on the following criteria:

1. Overall understanding of the project and quality of the proposal;
2. Firm's qualifications and similar project experience;
3. Key project personnel's qualifications, experiences and time commitment; and
4. Information obtained from references.

Siemens Industry was ranked number one by the evaluation committee. A summary of the ranking of the three contractors is listed below.

<u>Contractor</u>	<u>Average Points(100 max)</u>	<u>Ranking</u>
Siemens Industry, Inc.	92	1
Aegis ITS	86	2
Wescorp	75	3

Siemens was ranked the highest for its high quality maintenance program, key personnel to be assigned to Glendale, financial stability of the firm, and availability of additional resources to be assigned to Glendale in case of emergencies. Siemens has the largest team of traffic signal maintenance technicians in the nation and maintains traffic signals in over 200 communities in California. Due to the presence of Siemens personnel in many other cities in Los Angeles County, such as Alhambra, South Pasadena, San Marino and Acadia, it has the unique ability to promptly deploy extra crew members to handle emergency situations. In addition, Siemens is a licensed electrical construction contractor and is fully capable of performing various signal repairs and modification works based on pre-determined unit prices. Over the past 5 years, the City's experience with the services of Siemens has been very positive.

Due to price competition, staff was successful in negotiating a contract with Siemens that is comparable in cost with the other contractors. A summary of the cost proposals from the three contractors is listed in Exhibit 1. Even though Siemens' fees for monthly preventive maintenance is higher than the costs proposed by the other two contractors, Siemens' fees for labor and

services are substantially lower. Thus Siemens' fee for extraordinary maintenance services are much lower than those proposed by Aegis ITS and Wescorp.

Because of the reasons stated above and to reduce staff's effort in conducting another contractor selection process in the near future, staff respectfully recommends City Council to approve a five-year service contract with Siemens Industry, Inc. for the maintenance of traffic signals and other traffic-related electrical devices. The City retains the right to exercise the option of terminating the contract at any time upon giving a ten-day prior written notice should any problems arise.

FISCAL IMPACT

The estimated costs of the maintenance program for fiscal years 2013-14 to 2017-18 are shown in the table below and are grouped into three categories.

1. Routine preventive maintenance: Costs are calculated based on unit prices provided by Siemens multiplied by the number of traffic signals and other traffic-related electrical devices currently in the City. These costs could increase slightly as new devices are added in the future.
2. Extraordinary maintenance services: Costs are for repairing malfunctioned or damaged traffic equipment, responses to emergency knockdowns, markings for underground facilities, and miscellaneous services. These costs are estimated based on historical maintenance records and the average frequency of occurrence for various types of malfunctions and damages in the past.
3. Installation and modification of traffic-related electrical devices: When requested by the City, Siemens will perform traffic signal modifications and installations of new traffic-related electrical devices for small scale projects such as installing yellow flashing beacons or adding protected left-turn phasings for traffic signals.

	Year 1 FY 13-14	Year 2 FY 14-15	Year 3 FY 15-16	Year 4 FY 16-17	Year 5 FY 17-18	Total
Estimated Routine Preventive Maintenance	\$233,856	\$238,533	\$243,304	\$248,170	\$253,133	\$1,216,996
Estimated Extraordinary Maintenance Services	\$410,000	\$418,200	\$426,564	\$435,095	\$443,797	\$2,133,656
Installation & Modification of Devices	\$147,000	\$149,940	\$152,939	\$155,998	\$159,118	\$764,994
Total Costs	\$790,856	\$806,673	\$822,807	\$839,263	\$856,048	\$4,115,647

The increase in costs for each one-year period were estimated based on the assumption of a 2% annual increase in the Consumer Price Index of Los Angeles County, as published by the U.S. Department of Labor.

Funding for this maintenance program will be covered under the General Funds in Account No. 43110-101-553 (Traffic Signals Contractual Services).

Funding will be requested through the annual budgetary process for the respective fiscal years. Grant funding is not associated with this maintenance services agreement. There is no revenue offsets associated with this agenda item. In addition, there are no additional staffing costs or personnel associated with this item.

ALTERNATIVES

Alternative 1: Award a service contract to Siemens Industry, Inc. for the maintenance of traffic signals and other traffic related electrical devices as recommended by staff.

Alternative 2: Create City of Glendale's own traffic signal maintenance crew. This alternative involves extensive initial capital investment including purchasing new service vehicles, tools, signal equipment, and spare parts as well as hiring new staff. In addition, a warehouse for storage and laboratory for testing equipment will be required.

Alternative 3: Contract with other public agencies such as the City of Burbank or County of Los Angeles to maintain Glendale's traffic signals and other traffic-related electrical devices. Glendale's traffic signals were previously maintained by the City of Burbank from 2000 to 2008. However, the costs were much higher and the service frequency was lower. In addition, the City has little control over other public agencies' staffing arrangement and personnel issues.

Alternative 4: The City Council may consider any other alternatives not proposed by staff.

CAMPAIGN DISCLOSURE

In accordance with the City Campaign Finance Ordinance No. 5744, the following are the names and business addresses of the members of the board of directors, the chairperson, CEO, COO, CFO, Subcontractors and any person or entity with more than 10% interest in the company proposed for contract in this Agenda Item Report:

Full Name	Title	Business Address	City	State	Zip
N/A	Chairperson	N/A	N/A	N/A	N/A
Daryl D. Dulaney	CEO/President	3333 Old Milton Parkway	Alpharetta	Georgia	30005
Helmuth Ludwig (Executive Vice President)	Chief Operating Officer	3333 Old Milton Parkway	Alpharetta	Georgia	30005
Axel Meier	Chief Financial Officer	3333 Old Milton Parkway	Alpharetta	Georgia	30005
Daniel Hislip (Secretary)	Board of Directors	3333 Old Milton Parkway	Alpharetta	Georgia	30005

EXHIBIT

Exhibit 1 – Cost Comparison

EXHIBIT 1 COST COMPARISON

Routine Preventive Maintenance	Siemens	Aegis	Wescorp
Traffic signal per location per month	\$84.00	\$66.80	\$73.73
Hardwire flashing beacon per loc. per mo.	\$42.00	\$33.00	\$44.69
Wireless flashing beacon per loc. per mo.	\$29.50	\$33.00	\$44.69
In-roadway warning lights per loc. per mo.	\$63.00	\$38.00	\$50.27

Labor Fee (Extraordinary Maintenance)	Siemens	Aegis	Wescorp
Electrician - Regular time per hour	\$77	\$118	\$120
Electrician - Overtime per hour	\$115	\$178	\$180
Electrician - Double time per hour	NA	\$240	NA

Service Fee (Extraordinary Maintenance)	Siemens	Aegis	Wescorp
USA Markings - each	\$125	\$200	\$100
Loop Detectors (20 or more) each	\$325	\$315	\$350
12" LED green ball (100 or more) each	\$55	\$116	\$141
12" LED red ball (100 or more) each	\$57	\$89	\$132
12" LED yellow ball (100 or more) each	\$59	\$102	\$140
Bucket truck per hour	\$30	\$28	\$25

MOTION

Moved by Council Member _____, seconded by Council Member _____, that the City Manager, or his designee, is authorized to execute a maintenance services agreement with Siemens Industry, Inc. to provide maintenance services of the City's traffic signals and other traffic-related electrical devices for a period of five (5) years from July 1, 2013 to June 30, 2018.

Vote as follows:

Ayes:

Noes:

Abstain:

Absent:

MOTION ADOPTED BY THE GLENDALE CITY COUNCIL AT ITS
REGULAR MEETING HELD ON _____ 2013

APPROVED AS TO FORM
[Signature]
City Attorney
DATE 5/29/13

NOTIFICATION OF AWARD

CONTRACT #37: TRAFFIC SIGNAL MAINTENANCE & REPAIRS

Contract Period: Two Years: July 1, 2016 - June 30, 2018

Vendor: Jen Electric, Inc.

Address: 631 Morris Avenue, Springfield, New Jersey 07081

Contact Person: Jennifer Daidone

Title: President

Tel #: 973-467-4901

Fax #: 973-467-4902

E-Mail: jen@jenelectricinc.com

Response Time: 2 hours or less for non-emergency calls

CAT. I: MAINTENANCE/REPAIRS OF TRAFFIC SIGNALS	Unit Price
1. Preventive Maintenance Contract (Annual Cost Per Intersection); Includes all items listed in "Attachment I Checklist" – found in the bid specifications (without the testing of "LED" Modules):	\$425.00
a. Preventive Maintenance Contract (Annual Cost Per Intersection); Includes all items listed in "Attachment I Checklist" – found in the bid specifications (to include the testing of "LED" Modules):	\$440.00
b. The testing of "LED modules along (not to be included in the Preventive Maintenance Contract). Cost per traffic signal head consisting of (1) red, (1) yellow and (1) green LED.	\$10.00
2. Repairs (hourly cost per man hour, Monday through Friday, first 8 hours of normal workday):	\$185.00/hour
3. Repairs (hourly cost per man hour, overtime, after first 8 hours, Monday through Friday and Saturdays):	\$195.00/hour
4. Repairs (hourly cost per man hour, Sundays and Holidays):	\$195.00/hour
5. Percentage markup above wholesale cost of parts used for repairs:	25%

CAT. II: EQUIPMENT COSTS	Unit Price
1. Use of 28 foot - 32 foot reach bucket truck (hourly rate):	\$40.00/hour
2. Use of 40 foot - 50 foot reach bucket truck (hourly rate) for knockdowns only:	\$30.00/hour
3. Rental cost of temporary traffic controllers (weekly):	\$1.00/week



BID PACKAGE

Morris County Cooperative Pricing Council (6MOCCP)
502 Millbrook Avenue, Randolph, NJ 07869-3799
Tel: (973) 989.7059 • Fax: (973) 989.7076
Web Site: www.mccpc.org

CONTENTS

Morris County Cooperative Pricing Council

Contracts for Goods & Services (Non-Construction)

Table of Contents

Notice to Bidders

Invitation to Bid

Bid Specifications

NOTICE TO BIDDERS
MORRIS COUNTY COOPERATIVE PRICING COUNCIL (6MOCCP)

NOTICE IS HEREBY GIVEN that separate sealed bids will be received by the Purchasing Agent, Township of Randolph, on behalf of the Morris County Cooperative Pricing Council (MCCPC), in the Municipal Courtroom, 502 Millbrook Avenue, Randolph, New Jersey, on **Wednesday, April 6, 2016, at 11:00 a.m.** (prevailing time) and at that time will be publicly opened and read for:

SPRING CONTRACTS:

- #10: Lumber, Insulation, Hardware, Paint & Paint Supplies
- #13-A: Fire Equipment Services
- #20-B: Sporting Goods
- #25: Janitorial Supplies
- #29: Pest Control Services (Buildings)
- #30: Office Paper Supplies
- #34: Tree Spraying
- #35: Light Bulbs
- #37: Traffic Signal Maintenance & Repairs
- #40: Personal Protection Items & Equipment for Emergency Personnel
- #42: Landscaping Materials & Supplies
- #44: Welding Supplies
- #47: Water Meters/Data Recorders/Radio Frequency Meter Interface Units
- #48: Equipment Parts for Turf Care
- #50: Fire Department Uniforms (Purchase)
- #51: Deer Carcass Removal & Disposal

Technical bid specifications **ONLY** are available for review on the MCCPC website (www.mccpc.org). If after a review of the technical bid specifications bidders are interested in the entire bid package, it may be **picked up** for no cost from the Township Manager's Office, 502 Millbrook Avenue, Randolph, NJ 07869 after leaving necessary contact information **OR** by sending an email to jlambert@randolphnj.org with all of the following **REQUIRED** information: (1) Contract #(s), (2) Company Name, (3) Complete Company Address, (4) Company Phone #, (5) Company Fax #, (6) Contact Person Name, (7) email address. Upon receipt of **ALL** required information, the full bid package will be **emailed**. Only those bidders picking up packages or contacting the MCCPC directly and providing the necessary information will be provided with any addenda that are issued in accordance with N.J.S.A. 40A:11-23c. Failure to acknowledge receipt of any addenda that may be issued may result in the rejection of the bid.

Bids shall be submitted in a sealed envelope bearing the name and address of the bidder and plainly marked to indicate the subject of the bid and addressed to the Purchasing Agent, Township Manager's Office, Municipal Building, 502 Millbrook Avenue, Randolph, NJ 07869-

3799. **Any envelope that is received that is not properly marked causing it to be opened prior to the bid will be invalidated.** Bids may be received before the hour designated in this office if they are mailed or hand-delivered in person. The Township of Randolph will not be responsible for any bid that is sent by mail or other form of carrier which is lost or which arrives after the bid deadline date and time.

All bids must be submitted on the Bid Proposal Form and must conform to the specifications, terms and conditions for a fair and open contract, all of which are contained therein.

Bidders must review the bid specifications for any applicable bonding requirements. Where required, bids must be accompanied by a certified check, bid bond or cashier's check payable to the Township of Randolph in the amount specified in the bid documents. Bids for contracts that require a Performance Bond must also contain a Consent of Surety.

Bidders must have any and all required approvals, qualifications, certifications, and/or licenses necessary to perform the services or provide the products as contained in the bid specifications.

Bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et. seq., and N.J.A.C. 17:27. Other requirements as well as these described above are fully detailed in the bid document.

The Morris County Cooperative Pricing Council reserves the right to reject any or all bids, or any part thereof, waive informalities herein, and to award the bid in the best interest of its members.

Jenny Lambert
MCCPC Coordinator
Township of Randolph

INVITATION TO BID

Date: February 23, 2016

NOTICE is hereby given that separate sealed bids will be received by the Purchasing Agent, Township of Randolph, on behalf of the Morris County Cooperative Pricing Council (MCCPC), in the Municipal Courtroom, 502 Millbrook Avenue, Randolph, New Jersey, on **Wednesday, April 6, 2016, at 11:00 a.m.** (prevailing time) and at that time will be publicly opened and read for:

Contract #37
Traffic Signal Maintenance and Repairs

Technical bid specifications **ONLY** are available for review on the MCCPC website (www.mccpc.org). If after review of the technical bid specifications bidders are interested in the entire bid package, it may be **picked up** for no cost from the Township Manager's Office, 502 Millbrook Avenue, Randolph, NJ 07869 after leaving necessary contact information **OR** by sending an email to jlambert@randolphnj.org with all of the following **REQUIRED** information: (1) Contract Number(s); (2) Company Name; (3) Complete Company Address; (4) Company Phone Number; (5) Company Fax Number; (6) Contact Person Name; (7) Email Address. Upon receipt of **ALL** required information, the full bid package will be emailed. Only those bidders picking up bid packages or contacting the MCCPC directly and providing the necessary information will be provided with any addenda that are issued in accordance with N.J.S.A. 40A:11-23c. Failure to acknowledge receipt of any addenda that may be issued may result in the rejection of the bid.

Bids shall be submitted in a sealed envelope bearing the name and address of the bidder and plainly marked to indicate the subject of the bid, and addressed to the Purchasing Agent, Township Manager's Office, Municipal Building, 502 Millbrook Avenue, Randolph, New Jersey 07869-3799. **Any envelope that is received that is not properly marked causing it to be opened prior to the bid will be invalidated.** Bids may be received before the hour designated in this office if they are mailed or hand delivered in person. The Township of Randolph will not be responsible for any bid that is sent by mail or other form of carrier which is lost or which arrives after the bid date and time specified above.

All bids must be submitted on the Bid Proposal Form and must conform to the specifications, terms and conditions for a fair and open contract, all of which are contained therein.

Bidders must review the bid specifications for any applicable bonding requirements. Where required, bids must be accompanied by a certified check, bid bond or cashier's check payable to the Township of Randolph in the amount specified in the bid documents. Bids for contracts that require a Performance Bond must also contain a Consent of Surety.

INVITATION TO BID

Bidders must have any and all required approvals, qualifications, certifications, and/or licenses necessary to perform the services or provide the products as contained in the bid specifications.

Bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27. Other requirements as well as these described above are fully detailed in the bid documents.

The Morris County Cooperative Pricing Council reserves the right to reject any or all bids, or any part thereof, waive informalities therein, and to award the bid in the best interest of its members.

By Order of the Township Council,

Jenny Lambert
MCCPC Coordinator
Township of Randolph

BID SPECIFICATIONS

CONTRACT #37: TRAFFIC SIGNAL MAINTENANCE & REPAIRS

Contract Period – One Year: July 1, 2016 - June 30, 2017

Contract Period – Two Years: July 1, 2016 - June 30, 2018

THE FOLLOWING ARE MINIMUM SPECIFICATIONS WHICH MUST BE MET OR EXCEEDED.

All quantities may be more or less than estimated. No minimum order requirements are allowed.

Prices are to remain firm for the term of the contract with no exceptions.

It is the intent of the Morris County Cooperative Pricing Council (MCCPC) to seek bids for the repair of traffic signals located within the agencies of the MCCPC. Requests for locations to be serviced are noted in the specifications.

The contract will be based on time and materials. The successful bidder shall be available **twenty-four (24) hours a day, seven (7) days a week, including holidays**, and shall be responsible to acquire all necessary materials. Repairs shall be on an as needed basis as notified by the Chief of Police or his designated representative of the member municipalities.

The **annual Preventative Maintenance** and certification shall be performed as directed by the individual member of the MCCPC. Work to be performed in accordance with the Preventative Maintenance checklist is shown in **Attachment I**.

LED Modules: The determination as to whether or not to include the testing of existing LED Modules as part of the preventative maintenance contract will be made by the individual members. The individual members shall also have the option of having the contractor test the existing LED modules without performing any preventative maintenance.

For annual Preventative Maintenance, the contractor shall bid a flat rate on a **per intersection** basis and shall include all costs for labor, equipment, vehicles and material to complete checklist in **Attachment I**.

A currently licensed New Jersey Professional Engineer who may also be a certified Professional Traffic Operations Engineer shall certify (sign & seal) the Annual Preventative Maintenance & Inspection Report including: conflict monitor test results, controller timings, pedestrian clearance and yellow and red clearance intervals.

Aside from the contract, the individual member of the MCCPC will provide minor maintenance on its own to the traffic signals, including but not limited to the replacement of bulbs and other minor repairs.

After award of contract, any questions concerning the traffic signals or requests for an inspection of the signals may be directed to the Chief of Police of the member municipality who is requiring the service.

Duration of Contract

The contract will be for a period of one (1) year or two (2) years. Bidders are not required to bid on the two-year contract. The MCCPC has the right to cancel this contract at any time by giving thirty (30) days written notice to the contractor. In the event of such cancellation, the contractor shall be entitled to receive payment for services, work performed and materials, and equipment furnished under the terms of the contract prior to the

effective date of cancellation, but shall not be entitled to receive any damages on account of such cancellation or any further payment whatsoever. One reason for such a cancellation may be the takeover of the maintenance and repair of these traffic signals by the county or state.

Professional Qualifications

To qualify as a bidder for this contract, the contractor shall meet the following conditions:

- A. At least one principal of the firm or corporation shall have a minimum of two (2) years of formal education in electrical engineering, electronics or a related field.
- B. The firm or corporation shall have a minimum of five (5) years full time experience in the maintenance of traffic control signals or devices.
- C. The contractor shall be a licensed electrical contractor in the State of New Jersey with the capability of doing commercial and industrial wiring.
- D. The contractor shall be required to employ and maintain full time at least one IMSA Level II traffic signal electrician and one IMSA Level I traffic signal technician with a minimum of two years of verifiable experience, in servicing signal and/or control equipment, in order that diagnosis of system failures may be made quickly and accurately. **Personnel and contractor qualifications must be submitted with bid proposal.**
- E. The contractor shall promptly respond to service calls on a twenty-four (24) hour basis.

Maintenance and Protection of Traffic

The contractor will be required to maintain traffic in all directions at all times during the fulfilling of the contract. He shall erect and maintain suitable barricades, signs, and warning lights in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways", latest edition, at all work sites where any danger to motorists or pedestrians may occur. Transverse openings shall be secured at the end of the workday to permit traffic.

Roadway Excavation, Curb and Sidewalk

Where the service of the roadway, the curb or sidewalk is to be disturbed, the contractor shall obtain a road opening permit from the member agency or the county in which the member is located. He shall remove all broken material; replacement shall be in kind and in strict conformance with the requirements of the county for county roads and of the municipality for municipal roads. The contractor shall also comply with all applicable laws and statutes of the New Jersey One Call System.

REPAIR OF TRAFFIC SIGNALS

Damaged Equipment

The contractor shall respond to emergency calls within **TWO (2) HOURS** of the time that the contractor's communications center receives the call. He shall proceed without delay or the intervention of other acts to the location of the damaged or inoperative equipment and shall affect emergency temporary repairs.

If the emergency repairs at a signalized intersection require that the controller be disconnected, the contractor shall place "STOP" signs on such approaches to the intersection as the engineer shall designate as a temporary means of traffic regulation. If power is available, the contractor shall also install a flasher, operating as the engineer shall designate. The member shall furnish the contractor a sufficient number of signs. The contractor shall notify the police department charged with traffic safety at the intersection of any disconnected controller, and shall keep them informed of his progress should repairs require more than 24 hours.

The contractor shall, after making emergency temporary repairs, proceed at his earliest possible convenience, to restore the signal to its original operating condition. No written authorization is required for this work. However, the Chief of Police or the Engineer may authorize additional work, intended to change or upgrade the operation of the signal, to proceed concurrently with the repairs, should such arrangement be in the best interests of the member.

Extra Work

Whenever any major equipment in the system is damaged or deteriorated so as to require extensive repairs to, or complete replacement of such equipment, or whenever the Chief of Police or the Engineer deems it necessary to make alterations to existing equipment, they shall authorize the contractor to make such repairs, replacement or alteration.

The scope of extra work is as follows:

- A. Repair and/or replacement of major equipment including controllers, detectors, posts, heads, cabinets and foundations.
- B. Repair and/or replacement of conduit, ground wiring, or signal cable beyond this post.
- C. Relocation of any major component of the system.
- D. Installation of new signals and devices.
- E. Any other non-emergency work that the engineer may designate.
- F. Major deficiencies found during annual Preventative Maintenance.

Authorization of extra work shall be given by the Chief of Police or the Engineer in writing. Claims for extra work which have not been authorized in such a manner shall be rejected. Any extra work resulting from the negligence of the contractor or his agents shall be done by the contractor at no cost to the member.

Methods and Workmanship

The contractor shall at all times maintain a force of qualified workmen sufficient to perform the work required and described herein. The workforce shall be sufficient to perform routine repairs in a timely fashion and to respond promptly to emergency calls at any time. The workforce shall include qualified persons experienced in the electrical and mechanical fields associated with the specialized equipment.

Records

The contractor shall maintain comprehensive records of his services. These shall include invoices, bills of lading, receipts, payroll records and other documents relating to or verifying his bills. He shall also maintain a file showing all types of service he has performed on each signal. He shall keep a careful inventory of all material and equipment in his possession in order to advise the member of the best method of repairing these signals. Records shall also be kept concerning the date, time and the name of the inspector for the monthly inspections.

Copies of all records including monthly and annual re-inspections, etc. should be sent to the member municipality (police department – Traffic Safety Bureau) for their files.

Communications

The contractor shall have or establish a twenty-four (24) hour-a-day telephone answering service or recorder to insure compliance with the response times specified above.

Transportation

The contractor shall provide his own transportation from his place of employment to the job sites. He shall have access at all times to a ladder or bucket truck capable of reaching the appropriate height while supporting a load of 350 lbs.

Tools

The contractor shall furnish all tools and instruments necessary to test and repair the equipment covered in this bid.

1. Conflict Monitor Tester ATSI Model #PCMT 2600 or equivalent with the most current software revision, and cable harnesses for 3, 6, 12, and 16 channel conflict monitor and malfunction management units.
2. Automated Loop System Analyzer ASTI Model #ALSA-1250/HILT9000 or equivalent.
3. Calibrated Spectra Candela III Traffic Signal Light Tester, Model #ST-TSL-2000 or equivalent, six channels, for testing LED signal modules, including arrows.

Note: All specialty testing equipment shall be calibrated annually, or as required by the respective manufacturer for the duration of this contract. Copies of calibration and testing of equipment shall be produced by the contractor if requested by any member agency.

Method of Payment

On or about the first day of each month, or as required, the contractor shall submit invoices to the Chief of Police for all work performed during the preceding month. The invoice shall be accompanied by itemized statements showing in detail the labor, material and equipment used for each job, and specifying the unit and total cost for each. Invoices must reflect detailed list of parts used and list price of each part before discount/markup.

Materials

All traffic lights presently consist of components and materials that are in conformance with New Jersey Department of Transportation specifications and standards. Any materials used as replacement parts shall also conform to New Jersey Department of Transportation standards and specifications.

Hourly Rate and Materials

Bidders shall indicate an hourly charge as well as a percentage mark-up above wholesale on all parts necessary for all repairs described herein. Bidder shall also indicate the monthly and annual costs for inspections. There will be no charge for "travel time" to job sites.

Equipment Costs

Bidders shall indicate an hourly cost for equipment such as a reach bucket truck and a weekly rental cost for temporary traffic controllers.

Warranties

All equipment installed shall be subject to equipment manufacturer warranties.

Award of Contract :

The MCCPC will award one contract to one vendor to service all of the agencies in the 8 counties served by the MCCPC. The award will be made to the lowest responsive, responsible bidder based on the lowest aggregate total of all Maintenance/Repairs of Traffic Signals costs and equipment costs (percentage markup above wholesale cost of parts used for repairs will not factor into the award of the contract).

An award will be made at the discretion of the Morris County Cooperative Pricing Council for a one- or two-year contract. Bidders are not required to bid on both years.

See attached list of locations of traffic signals of MCCPC members.

BONDING REQUIREMENTS

Bid Guarantee: Each bid must be accompanied by (i) an acceptable certified check or cashier's check payable to the Township of Randolph or (ii) a bid bond issued by a surety authorized to transact business in New Jersey and acceptable to the Township of Randolph in the amount of **\$500.00**. A properly dated and executed Power of Attorney in full force and effect must accompany the bid bond. Failure to submit said bid guarantee shall be cause for rejection of the bid.

Consent of Surety: Each bid must also be accompanied by a Consent of Surety issued by a surety authorized to transact business in New Jersey and acceptable to the Township of Randolph. The Consent of Surety shall serve as a guarantee that the surety company will provide the appropriate performance bond within ten (10) business days of the date of Notification of Award letter. A properly dated and executed Power of Attorney in full force and effect must accompany the Consent of Surety. Failure to submit the Consent of Surety or Power of Attorney shall be cause for rejection of the bid.

Performance Bond: Within ten (10) business days of the date of Notification of Award letter, the successful bidder shall furnish a performance bond in the amount of **\$5,000.00**.

The performance bond shall be in the form of either (i) an acceptable certified check or cashier's check payable to the Township or (ii) a performance bond issued by a surety authorized to transact business in New Jersey and acceptable to the Township of Randolph. The bonds shall be issued by a surety company licensed to transact business in New Jersey, and pursuant to New Jersey law, holding sufficient financial resources to issue said bonds. The performance bond shall bear a date on or subsequent to the date of the contract. Each signature of an attorney-in-fact shall be accompanied by a properly dated, executed and certified Power of Attorney in full force and effect. Said bonds shall assure fulfillment of the contract and all of its provisions, including any additions, deductions, or other modifications, or full reimbursement to the Township for all expenses incurred in making good any default. A current statement of financial condition must also be provided with each bond to certify that the total amount of the bonds required will be within the maximum amount specified for that company pursuant to N.J.S.A. 17:18-9. In addition, each surety must provide a Surety Disclosure Statement in proper form pursuant to N.J.S.A. 2A:44-143. The performance bond shall contain a Waiver of Notice being required of alterations, additions, deductions, extension of time, or other modifications of the contract as ordered. Failure to deliver the performance bond with the executed contract shall be cause for declaring the contract null and void.

Note: If a certified or cashier's check is submitted at the time of bid for the Bid Bond, the Bid Bond form is not required. If the bidder is planning on submitting a certified or cashier's check for its Performance Bond, it MUST be submitted with its bid proposal. In that instance the Consent of Surety would not be required. If the bidder is NOT planning on submitting a certified check or cashier's check for its Performance Bond with its bid proposal, the Consent of Surety will be required with the bid proposal. If the bidder is planning on providing a certified or cashier's check as their Bid Bond and Performance Bond with their bid proposal, they MUST provide two separate checks.

If the bidder submits a certified /cashier's check for its Performance Bond with its bid proposal, the Performance Bond form would not need to be filled out after award of contract.

ATTACHMENT 1

ANNUAL INSPECTION CHECKLIST FOR PREVENTATIVE MAINTENANCE CONTRACT

The following preventative maintenance items will be performed on an annual basis for each intersection.

Vehicular & Pedestrian Signal Heads

1. Clean and inspect all visors & lenses.
2. Inspect traffic signal housing for cracks or damage.
3. Check terminal block connections.
4. Check gaskets and mounting hardware; re-tighten as necessary.
5. Check head alignment relative to lanes they serve.
6. Check safety chains.
7. Re-lamp all incandescent bulbs.

Pedestrian Pushbuttons

1. Check for tightness.
2. Verify operation.

3. Check accompanying sign; repair or replace as necessary.

Signal Poles and Arms

1. Check anchorage and all connection hardware.
2. Check tightness of all mounting and connection hardware.
3. Re-tighten bolt covers.

Span Wire Signal Installations

1. Check condition of strain vises, if applicable.
2. Visually inspect each upper and lower tether span wire for damage or deterioration.
3. Visually inspect each upper and lower tether span wire for excess sag. Inspect all connecting span wire hardware; tighten as necessary.
4. Inspect guy anchors for proper attachment and/or damage.
5. Visually inspect pole condition for cracks and/or checks (wood poles); note any deficiencies.

Conduit System and Junction Boxes

1. Check grounding bushings on rigid metallic conduit.
2. Inspect junction box covers for cracks or misalignment.
3. Check proper seating of junction and splice box covers.
4. Check grounding; secure all straps and rod connections.

Vehicle Detection – Loops

1. Verify operation of areas of detection.
2. Visually inspect all visual loops: photograph and document damaged areas of detection.
3. Check loop detector splices.
4. Check and retune detector amplifiers as needed to obtain proper operation. Perform testing at the cabinet using ASTI Model #ALSA-1250 or HILT-9000 tester or equivalent; record test results.

Vehicle Detection – Microwave

1. Verify position of detector for area(s) of detection; re-position if necessary.
2. Remove any branches or obstructions from field of view.
3. Check and re-tighten all mounting hardware.
4. Check wiring connections.
5. Verify operation of the central unit at the cabinet.

Vehicle Detection – Cameras

1. Verify operation of areas of detection.
2. Check video camera positioning.
3. Check video camera mounting hardware.
4. Verify operation of video processor at cabinet.

Traffic Signal Cable

1. Check all splices in each traffic signal transformer base; re-splice as necessary to provide a waterproof connection. **STANDARD WIRENUT WITH TAPE SPLICES ARE NOT ACCEPTABLE.**
2. Visually check the condition of the traffic signal cable for dry rot, nicks, cuts or other damage to the outer jacket insulation.
3. Check all overhead cables and connections

Overhead Street Name Signs

1. Clean sign faces.
2. Check mounting hardware; tighten as necessary.

Uninterruptible Power Source (Battery Back-Up), if Installed

1. Verify automatic transfer switch operation.
2. Verify incoming line voltage.
3. Verify DC output to batteries.

4. Verify AC output to inverter.
5. Check electrical connections.
6. Test system via simulated power outage at cabinet.

Controller and Meter Cabinets

1. Vacuum cabinet interior.
2. Change cabinet filter.
3. Check operation of fan and thermostat.
4. Check and tighten all terminal connections including line filter, surrestor and mercury switch.
5. Verify operation of detector panel relays.
6. Check police functions.
7. Lubricate and adjust hinges and locks.
8. Check cabinet door gaskets for tight seal.
9. Check and tighten neutral and grounding bus.
10. Check conditioning of incoming line voltage.
11. Test circuit breakers.
12. Check GFCI receptacle on power distribution panel.
13. Seal all conduits.

Controller Assembly

1. Check all conflict monitors by actual conflict. The contractor shall utilize an ATSI Model #PCMT 2600 conflict monitor tester or equivalent to certify proper operation of the conflict monitor (to be performed only by an IMSA Level II or higher signal electrician). Provide documentation of all tests performed that include the make, model and serial unit of each unit tested.
2. Run internal diagnostics on the controller, if unit capable.
3. Verify input timing versus approved timing.
4. Note and record controller timing and parameters. Check Yellow, all-Red and Pedestrian Clearances and compare to required duration per chapter 4D of the current MUTCD.
5. Verify vehicle and pedestrian calls on detector panel.
6. Check pre-emption function for firehouses.
7. Check programming and operation of time clocks (school zone flashers only).
8. Verify correct date, time and DST function for controller (intersections only).
9. Verify existing cycles, splits and offsets for coordinated signals, if programmed.
10. Verify existing day and week plans, if programmed.

LED Testing for Existing Vehicular Signal Modules (If and Where directed)

1. Inspect LED modules for cracks or other visible signs of damage.
2. Test all existing LED signal full ball and arrow modules for luminous intensity and photometric brightness using handheld Spectra Candela III Traffic Signal. Light Tester or equivalent.
3. Note and record results of field testing.
4. Compare field readings with ITE Specification, Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Circular Signal Supplement.

A report signed and sealed by an Engineer meeting the qualifications at the beginning of this section shall be submitted to the member agency containing an itemized list of all work and materials performed, conflict monitor test results, controller timing printouts, results of red and yellow intervals, results of pedestrian clearance intervals. Report shall also include a list of deficiencies found (if any), which indicates any signals, signs and pavement markings that are missing or do not conform to the currently approved drawings and/or design standards.

The price quoted per location in the proposal shall include all labor, equipment, vehicles and material necessary to complete the above maintenance items. In addition, the price quoted shall include all expendable items such as bulbs, cabinet filters, fans, thermostats, miscellaneous connectors, grounding lugs and duct seal.

Various Locations of Traffic Signals of MCCPC Members

This list of MCCPC members specifying locations of traffic signals does not exclude the remaining or new members from utilizing the services once the contract has been awarded.

BELLEVILLE (ESSEX COUNTY)

1. Joralemon Street and Passaic Avenue
2. Joralemon Street and Main Street
3. Chestnut Street and Passaic Avenue

BOONTON (TOWN OF) (MORRIS COUNTY)

1. Boonton Avenue and Main Street
2. Division Street and Main Street
3. Myrtle Avenue and Wootton Street
4. Vreeland Avenue and Myrtle Avenue
5. Boonton Avenue and Wootton Street

BUTLER (MORRIS COUNTY)

1. Decker Road and Hamburg Turnpike

CHATHAM BOROUGH (MORRIS COUNTY)

1. Watchung Avenue and River Road
2. Watchung Avenue and Hillside Avenue
3. Watchung Avenue and Fairmount Avenue
4. Watchung Avenue and Washington Avenue
5. Watchung Avenue and Lafayette Avenue
6. Washington Avenue and Chatham Street

CHESTER BOROUGH (MORRIS COUNTY)

1. Oakdale Road
2. Route 513
3. Route 510

CLIFTON (PASSAIC COUNTY)

1. Van Houten and Valley
2. Allwood and Hepburn
3. Allwood and Market
4. Allwood and Passaic
5. Bloomfield and Brighton
6. Bloomfield and Styretowne
7. Broad and Fenner
8. Broad and Van Houten
9. Clifton and Colfax
10. Clifton and Getty
11. Clifton and Lakeview
12. Clifton and Lexington
13. Clifton and Main
14. Clifton and Paulison
15. Clifton and Randolph
16. Clifton and Third

17. Grove and School 16
18. Lakeview and Merselis
19. Lakeview and Piaget
20. Lexington and Ackerman
21. Lexington and Center
22. Lexington and Piaget
23. Main and Clifton Shopping Center
24. Main and Bridewell
25. Main and Harding
26. Main and Madison
27. Main and Piaget
28. Main and Union
29. Main and Washington
30. Parker and Lake
31. Paulison and Highland
32. Piaget and Third
33. Randolph and Lake
34. Valley and Fenner
35. Van Houten and Grove
36. Van Houten and Huron
37. Van Houten and Scales Plaza
38. Van Houten and Mt. Prospect
39. Kingsland and Washington
40. Main and Delawanna
41. River and Kingsland
42. Allwood and Styretowne
43. Kingsland and Target Drive
44. Valley and Rock Hill
45. Piaget and Getty
46. Allwood and Book
47. Broad Street at Stop & Shop
48. Hazel/Kuller/Rollins

DENVILLE (MORRIS COUNTY)

1. Diamond Spring Road and Pocono Road
2. North Shore and Franklin Road

DOVER (MORRIS COUNTY)

1. Morris Street and E. Blackwell Street
2. Sussex Street and E. Blackwell Street
3. Warren Street and W. Blackwell Street
4. Bassett Highway and Warren Street
5. Prospect Street and W. Blackwell Street
6. W. Clinton Street and Warren Street
7. Sussex Street and W. Clinton Street
8. Morris Street and E. Clinton Street
9. Bergen Street and E. Blackwell Street
10. Richards Avenue and Bergen Street
11. E. Blackwell Street and S. Salem Street

FLORHAM PARK (MORRIS COUNTY)

1. Park Avenue and Driveway at 200 Park Avenue
2. Park Avenue and Campus Drive

3. Park Avenue and Florham Road – Rockefeller Connector Road
4. Park Avenue and Punchbowl Road – Ward Place
5. Park Avenue and Danforth Road – Rockefeller South Driveway
6. Columbia Turnpike and Mack-Cali Driveway/Jughandle
7. Columbia Turnpike and Park Street
8. Columbia Turnpike and James Street – Florham Village Driveway
9. Columbia Turnpike and Ridgedale Avenue
10. Columbia Turnpike and Hanover Road
11. Columbia Turnpike and Crescent Road
12. Columbia Turnpike and Fernwood Road – Primrose Driveway
13. Columbia Turnpike and Vreeland Road – Beacon Hill Road
14. Hanover Road and Vreeland Road
15. Ridgedale Avenue and James Street
16. Ridgedale Avenue and Brooklake Road/Park Street
17. Ridgedale Avenue and Briarwood Road – Borough Access Road
18. Ridgedale Avenue and Greenwood Avenue
19. Brooklake Road and East Madison Avenue (flasher)

HANOVER TOWNSHIP (MORRIS COUNTY)

1. Troy Hills Road and Highland Avenue
2. Whippany Road and Eden Lane
3. Whippany Road and Fairchild Place
4. Whippany Road and Woodfield Drive/Adams Drive
5. Whippany Road and Park Avenue
6. Hanover Avenue and Horse Hill Road
7. Columbia Road and Park Avenue
8. Ridgedale Avenue and Malapardis Road
9. Ridgedale Avenue and Elm Place/Mountain Avenue
10. Ridgedale Avenue and Cedar Knolls Road
11. Ridgedale Avenue and Horse Hill Road
12. Ridgedale Avenue and East Frederick Place
13. Park Avenue and Ford Hill Road
14. South Jefferson Road and Cedar Knolls Road
15. South Jefferson Road and Eden Lane
16. Troy Hills Road and Bee Meadow Parkway
17. Troy Hills Road and Baird Place (pedestrian blinker)
18. Reynolds Avenue and Bee Meadow Parkway (blinker)
19. North Jefferson Road and Parsippany Road
20. Mt. Pleasant Avenue and Parsippany Road
21. Hanover Avenue (Morris County Library Access Driveway)

HARDING TOWNSHIP (MORRIS COUNTY)

1. Blue Mill Road and Village Road

JEFFERSON TOWNSHIP (MORRIS COUNTY)

1. Berkshire Valley Road, Ridge & Chamberlain Road
2. Schoolhouse Road and Ridge Road (blinker)

MADISON BOROUGH (MORRIS COUNTY)

1. Kings Road and Green Avenue
2. Kings Road and Prospect Street
3. Kings Road and Samson Avenue

4. Kings Road and Green Village Road
5. Woodland Road and Green Village Road
6. Woodland Road and Green Avenue
7. Woodland Road and Noe (flasher)
8. Brittin Street and Greenwood (flasher)
9. Fairview Avenue and Central (flasher)
10. Fairview Avenue and Greenwood (flasher)
11. School Zone Flashers (7)
12. Radar Sign Flashers (2)

MENDHAM BOROUGH (MORRIS COUNTY)

1. Main Street (2 signals)

MONTVILLE TOWNSHIP (MORRIS COUNTY)

1. Fire House and White Hall Road
2. Fire House and Route 202
3. Park and Route 202
4. Changebridge and Route 202
5. Changebridge, Horseneck Road and River Road
6. Horseneck and Hook Mountain Road
7. Pine Brook and White Hall Road (flashing traffic signal)
8. Changebridge, Eckhardt Circle and Cambray Road
9. Woodmont Road and Changebridge
10. Bloomfield Avenue and Changebridge Road
11. Hook Mountain and Bloomfield Avenue
12. 123 Changebridge Road/Lazar Middle School (flashing traffic signal)
13. 46 Pine Brook Road/Cedar Hill School (flashing traffic signal)
14. 29 Woodmont Road/Woodmont School (flashing traffic signal)

MORRIS TOWNSHIP (MORRIS COUNTY)

1. Columbia Road at Honeywell Service Driveway
2. Columbia Road and Normandy Heights Road (Honeywell Main Driveway)
3. Columbia Road and Normandy Parkway
4. West Hanover Avenue and Burnham Road
5. West Hanover Avenue and Jane Way
6. West Hanover Avenue and Ketch Road
7. East Hanover Avenue and Ridgedale Avenue
8. James Street and Harter Road
9. Mill Road and Burnham Road (flasher)
10. Punchbowl Road and Old Turnpike Road (flasher)
11. Ridgedale Avenue and John Street
12. Sussex Avenue and Gaston Road
13. Sussex Avenue and Kahdena Road
14. Sussex Avenue and Raynor Road
15. Whippany Road and Lindsley Drive

MT. OLIVE TOWNSHIP (MORRIS COUNTY)

1. International (by Extended Stay Hotel)
2. International and Continental
3. International South (by Sam's Club)
4. International South by McDonalds

PARSIPPANY (MORRIS COUNTY)

1. Allentown Road and Kingston Road (flasher)
2. Baldwin Road and Vail Road
3. Baldwin Road at Baldwin Oaks Senior Complex (pedestrian signal)
4. Beverwyck Road and Reynolds Avenue
5. Cherry Hill Road and Interpace Parkway/Grecian
6. Cherry Hill Road and Interpace Parkway/Grecian Street
7. Cherry Hill Road and Old Cherry Hill Road
8. Dryden Way and Campus Drive
9. Dryden Way and Sylvan Way
10. Greystone Ped. Sign/North Cottage Street (pedestrian cross walk)
11. Halsey Road and Ludlow Road (flasher)
12. Interpace Parkway and Upper Pond Road
13. Jefferson Road and East Halsey Road
14. Knoll Road and Greenbank/Lake Shore Drive (flasher)
15. Knoll Road and North Beverwyck Road (flasher)
16. Littleton Road and Campus/Gatehall
17. Littleton Road and Halsey Road
18. Littleton Road and Park Road/Crestview
19. Littleton Road and Parsippany Road (traffic preemption light)
20. Littleton Road and Rita Drive/Beachwood Road
21. Littleton Road and Sylvan Way
22. New Road and Edwards Road/I-280 EB Ramp
23. North Beverwyck Road and Hiawatha Boulevard
24. North Beverwyck Road and I-80 EB Ramp
25. North Beverwyck Road and Lakeshore Drive
26. North Beverwyck Road and Vail Road
27. Parsippany Boulevard and Driveway for Brookside
28. Parsippany Boulevard and Waterview Boulevard/I-287 SB Ramp
29. Parsippany Boulevard/Fanny Road/Intervale Road
30. Parsippany Road and Allentown Road
31. Parsippany Road and East Halsey
32. Parsippany Road and Eastman Road
33. Parsippany Road and Freneau (Ambulance Building) (flasher)
34. Parsippany Road and I-287 NB Ramp
35. Parsippany Road and I-287 SB Ramp
36. Parsippany Road and Lanidex Plaza
37. Parsippany Road and North Jefferson Road
38. Route 10 and Littleton Road (Route 202)
39. Route 10 and Powder Mill Road
40. Route 10 and Yacenda Drive
41. Route 46 and Baldwin Road
42. Route 46 and Beverwyck Road
43. Route 46 and Cherry Hill Road
44. Route 46 and Fox Hill Road
45. Route 46 and Lackawanna Place
46. Route 46 and New Road
47. Route 46 and Parsippany Boulevard (Route 202)
48. Route 46 and Smith Road/Littleton Road
49. Route 46 and Vail Road
50. Route 46 and Waterview Boulevard
51. Route 53 and Park Road
52. Smith Road and I-80 EB Ramp
53. Smith Road and Jefferson Road
54. Smith Road and Woodhollow Road/Tara Hotel

55. South Beverwyck Road and Reynolds Avenue
56. Sylvan Way and Tiffany Drive
57. Vail Road and Knoll Road (flasher)
58. West Hanover Avenue and Freedom Way (Police & Fire Academy)
59. West Hanover Avenue and Koch/Ketch
60. West Hanover Avenue and Shongum Road

RANDOLPH TOWNSHIP (MORRIS COUNTY)

1. Dover Chester Road and Pleasant Hill Road
2. Dover Chester Road and Sussex Turnpike
3. Dover Chester Road and Morris Turnpike
4. Millbrook Avenue and Quaker Church Road
5. South Morris Street and Franklin Road
6. Quaker Church Road and Center Grove Road
7. Millbrook Avenue near Freedom Park (flasher)
8. Sussex Turnpike and Church Road (flasher)

READINGTON TOWNSHIP (HUNTERDON COUNTY)

1. County Road 523 and Dreahook
2. County Road 523 and Halls Mill

ROCKAWAY TOWNSHIP (MORRIS COUNTY)

1. Sanders Road and Green Pond Road
2. Independence Way and Mt. Hope Avenue

ROXBURY (MORRIS COUNTY)

1. Hillside Avenue and Righter Road, Succasunna
2. Hillside Avenue and Main Street, Succasunna
3. Eyland Avenue and Righter Road, Succasunna
4. Commerce Avenue and Righter Road, Succasunna

SUSSEX COUNTY (SUSSEX COUNTY)

1. Spring Street and Madison, Newton
2. CR517 and CR606, Andover
3. CR616 and CR669, Andover
4. CR616 and CR623, Andover
5. CR519 and CR626, Hampton
6. CR519 and Plotts Road, Newton
7. CR519 and CR622, Newton
8. CR607 and Brooklyn Mountain Road, Hopatcong
9. CR519 and Town Center Road, Sparta
10. CR620 and Main Street, Sparta
11. CR519 and CR616, Sparta
12. CR565/CR628/CR639 in Wantage
13. CR517/CR620/Station Road, Sparta
14. CR515 and Shopping Center, Vernon
15. CR616 and CR621, Newton
16. CR616 and Diller Avenue, Newton
17. CR607 and CR602, Hopatcong
18. CR607 and Sharp Avenue, Hopatcong
19. CR607 and Bell Avenue, Hopatcong

20. CR607 and CR609, Hopatcong

WAYNE TOWNSHIP (PASSAIC COUNTY)

1. Paterson Hamburg Turnpike and Ratzer Road
2. Paterson Hamburg Turnpike and College Road
3. Paterson Hamburg Turnpike and Duncan Lane
4. Paterson Hamburg Turnpike and Hinchman Avenue
5. Paterson Hamburg Turnpike and Valley Road
6. Paterson Hamburg Turnpike and Church Lane
7. Paterson Hamburg Turnpike and Berdan Avenue
8. Paterson Hamburg Turnpike and Alps Road
9. Berdan Avenue at Wayne Hills High School
10. Paterson Hamburg Turnpike and Squad Place
11. Paterson Hamburg Turnpike and Geoffery Way
12. Paterson Hamburg Turnpike and Colfax Road
13. Paterson Hamburg Turnpike and Black Oak Ridge Road
14. Paterson Hamburg Turnpike and Terhune Drive
15. French Hill Road and Valley Road
16. Valley Road and MacDonald Drive
17. Valley Road and Nellis Drive – Runnymede Road
18. Valley Road and Preakness Avenue
19. Valley Road and Ratzer Road
20. Valley Road and Berdan Avenue
21. Paterson Hamburg Turnpike and Jackson Avenue
22. Jackson Avenue and Squad Place
23. Alps Road and Ratzer Road
24. Alps Road and French Hill Road
25. Alps Road and Tall Oaks Drive – Nellis Drive
26. French Hill Road and Parish Drive – Matthew Drive
27. Berdan Avenue and Geoffrey Way
28. Willowbrook Boulevard – North Leg
29. Willowbrook Boulevard – Mall Service Road
30. Black Oak Ridge Road and Pompton Plains Cross Road
31. Black Oak Ridge Road and Jackson Avenue
32. Riverview Drive and Edison Drive – Corporate Drive
33. Mountain View Boulevard and Sherman Street
34. Berdan Avenue and Brittany Drive – Preakness Access
35. Wayne Towne Center – North Leg
36. Mountain View Boulevard and Parish Drive – Legion Place
37. Valley Road and Barbour Pond Drive
38. Riverview Drive and Totowa Road
39. West Belt / NJ Transit Access Road
40. Ratzer Road and Pike Drive/Stanford Place
41. Dawes Highway and Paterson-Hamburg Turnpike
42. Paterson-Hamburg Turnpike and Jackson Avenue



ENERGY EFFICIENCY SUCCESS STORY

LED Traffic Signals = Energy Savings

for the City of Portland, Oregon



In 2001, the City of Portland replaced nearly all its red and green incandescent traffic signal lights with new signal lights featuring highly efficient light-emitting diodes (LEDs).

The right timing and carefully arranged financing resulted in a successful energy-efficiency project, with annual energy and maintenance savings totalling \$400,000 and net payback in less than three years.

A Project Whose Time Had Come

In 1995, when the City of Portland first looked at the LED option, green LEDs were not available and red LEDs were quite expensive. In 2001, they found that prices had dropped dramatically.

“When we investigated last year, I thought the sales rep was pulling my leg. The new LED prices were less than half of what they had been...The cost of technology had come down while power prices were going up and utilities were offering aggressive rebates for energy efficiency.

It was—and still is—an ideal time to act.”

*—Curt Nichols, Senior Energy Manager
for the City of Portland.*

Portland seized the opportunity and met the project's budgeting and timing challenges. By the end of the year, 6,900 red and 6,400 green incandescent signal lamps had been replaced with LED lamps, and the savings had begun.

The City Portland, Oregon

The Project Retrofit traffic signals with LED lamps

The Utilities PGE and Pacific Power

The Cost \$2.2 Million (total) \$900,000 (net)

The Challenge Fund the project with no capital budget

The Achievement In three months more than 13,300 signals retrofitted to LED

The Benefits Annual Energy Savings of \$335,000

Annual Maintenance Savings of \$45,000

Net Return on Investment: 37% (energy only) 44% (total)

“It’s a good thing when City Government can help protect the environment and save taxpayer money at the same time. These LED lamps are clearly superior to traditional incandescent lights in terms of energy efficiency, and that translates directly into reduced impacts on wildlife habitat and global warming emissions. With \$335,000 in annual utility bill savings, this investment will pay back multiple benefits for the City for years to come.”

— Dan Saltzman
Portland City Commissioner



Paul Zebell, signal operations specialist, holds an incandescent bulb and an LED replacement module.

A Challenge and a Solution

Three factors brought a sense of urgency to the LED project:

- The energy crisis facing the Western states.
- Significant electric rate increases in October 2001.
- Special incentives that two local electric utilities, PGE and Pacific Power, were offering for energy efficiency projects completed before 2002.

Leasing + Incentives + Tax Credit Benefits = Major Savings for the City

Even at the new lower LED prices, retrofitting Portland's traffic signals would cost about \$2.2 million. The City didn't have capital allocated for a project of that size. A leasing arrangement provided the solution.

First, leasing spread the capital costs out to more closely match the energy and maintenance savings of the retrofit.

Second, the terms of the lease allowed the City to use contract labor to complete the project before the end of 2001, and thus claim rebates from PGE and Pacific Power totalling \$715,000.

Third, the lease option also allowed the City to benefit from Oregon's Business Energy Tax Credit (BETC). Although the City doesn't pay income taxes, it can still benefit from tax credits through an arrangement where the tax credit taken by the leasing company can be shared with the other party. The BETC tax credit—worth 35 percent of an energy project's total cost—made the lease option even more attractive. In Portland's LED project, the leasing company gets a 35 percent tax credit taken over time, reducing the cost of the City's lease by about 22 percent, saving the City nearly \$500,000.

“The LEDs have reduced transportation maintenance costs by \$45,000 a year in off-hour call out costs and replacement bulbs. LED modules have a life of six years or more while the current bulbs have only a two-year life.

In addition, we've been able to save 1,400 hours of valuable staff time per year previously used for group relamping and apply that time to other maintenance needs.”

— Bill Kloos
Portland Signals and
Streetlighting Manager

Note:

Since the completion of this project, the State of Oregon has revised its administrative rules to allow the sharing of tax credits without a lease arrangement. Today, any equipment supplier or installation contractor can provide a tax credit “pass-through” equal to 27 percent of the project's cost.



A City-bired contractor installs one of more than 13,000 LED lamps during the fall of 2001.

Portland's LED retrofit

- 6,900 red and 6,400 green signal lamps (a mix of 12" balls, 8" balls, and turn arrows in both colors.)
- 140 flashing amber beacons
- several light rail transit signals

...and its benefits

Energy use and savings

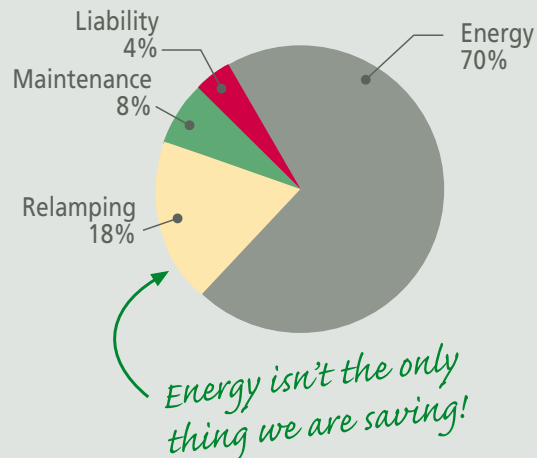
	BEFORE	AFTER
Kilowatt hours per year	6.1 million	1.2 million
Electric cost per year	\$420,000	\$85,000
Energy savings per year		\$335,000

Maintenance savings

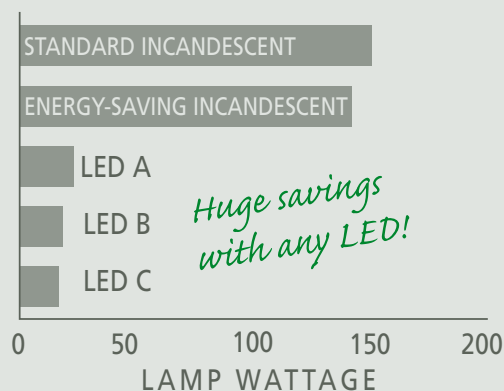
	BEFORE	AFTER
Average lamp life	~2 years	~6 years
Maintenance costs per year	\$60,000	\$15,000
Savings		\$45,000

LED Project Figures

Savings



Energy Usage Comparison



Net Cashflow





NORTHWEST
ENERGY
EFFICIENCY
ALLIANCE

www.nwalliance.org



The Northwest Energy Efficiency Alliance is a non-profit group of electric utilities, state governments, public interest groups and industry representatives committed to bringing affordable, energy-efficient products and services to the marketplace.

Funding for this success story was provided by the Alliance. This is a part of their efforts to support local government use of efficient products and services in Idaho, Montana, Oregon and Washington.

You can learn more about LED traffic signals by visiting the following web sites:

The Environmental Protection Agency (EPA) site listing ENERGY STAR® rated traffic signals,

http://yosemite1.epa.gov/estar/consumers.nsf/content/traffic_signals.htm

The Consortium for Energy Efficiency (CEE) site on energy-efficient traffic signals,

<http://www.cee1.org/gov/led/led-main.php3>

You can learn more about BETC from the Oregon Office of Energy web site: <http://www.energy.state.or.us/bus/tax/taxcdt.htm>

Additional Resources

Association of Idaho Cities
<http://www.idahocities.org>

Association of Washington Cities
<http://www.awcnet.org>

League of Oregon Cities
<http://www.orcities.org>

Montana League of Cities
and Towns
<http://www.mlct.org>

City of Portland – Energy Division
Office of Sustainable Development
721 NW 9th Ave, Suite 350
Portland, OR 97209
<http://www.sustainableportland.org/>

Or, call Curt Nichols at 503.823.7418
E-mail curt@ci.portland.or.us.