



City of La Quinta

CITY / SA/ HA/ FA MEETING DATE: January 21, 2014

AGENDA CATEGORY:

ITEM TITLE: APPROVE NEW JOB DESCRIPTION AND PAY SCHEDULE FOR TRAFFIC SIGNAL MAINTENANCE SUPERVISOR, APPROPRIATE \$14,631 FROM GENERAL FUND RESERVES FOR THE POSITION, AND REVISE JOB DESCRIPTION AND PAY SCHEDULE FOR TRAFFIC SIGNAL TECHNICIAN

BUSINESS SESSION: 6

CONSENT CALENDAR:

STUDY SESSION:

PUBLIC HEARING:

RECOMMENDED ACTION:

Approve a new job description of Traffic Signal Maintenance Supervisor, revise the job description and position schedule for the Traffic Signal Technician position, and appropriate \$14,631 from General Fund reserves.

EXECUTIVE SUMMARY:

- The City assumed daily traffic signal maintenance in 2007 when the Traffic Signal Technician position was established and filled. The City did so to provide better and more responsive signal maintenance than was supplied by Riverside County signal maintenance.
- Since 2007, there has been more than a 50 percent increase in the number of signals and warning devices requiring maintenance in the City.
- According to industry standards, the current Traffic Signal Technician is performing routine maintenance on nearly double the recommended number of traffic signals. Consequently, the technician has little time for more complicated coordination and communication upkeep required by the City's extensive traffic signal network.
- Public Works has identified the need for a Traffic Signal Maintenance Supervisor to oversee the Technician's work as well as perform more complex repairs to improve signal coordination and overall traffic safety.

FISCAL IMPACT:

The position of Traffic Signal Maintenance Supervisor would be placed at Salary Range 62, with an annual cost of approximately \$105,000 for salary and benefits. The salary range of the existing Traffic Signal Technician position would be revised from Range 54 to Range 48, which would be an annual reduction in salary cost of approximately \$9,000. Additionally, Public Works anticipates reducing the on-call traffic signal backup service contract by \$25,000 annually. With these cost savings, the net increase to fund the new position for Fiscal Year 2014/15 would be approximately \$71,000.

The cost to fund the Traffic Signal Maintenance Supervisor position for the remainder of the current fiscal year (from March 1, 2014 to June 30, 2014) would be \$37,009. Public Works currently has \$22,378 available from the on-call traffic signal backup service account to apply to this cost, leaving a shortfall of \$14,631, which requires an appropriation from General Fund reserves. If approved, funds for this position would then be included in subsequent year operating budgets

BACKGROUND/ANALYSIS:

In July 2007, City Council approved in-house traffic signal maintenance with the approval of a Traffic Signal Technician position as part of the Fiscal Year 2007/2008 operating budget. At that time, there were 37 traffic signals and three warning devices in the City. The concerns with maintaining the system at that time were primarily to improve routine maintenance and have the ability to respond to after hour emergencies in a timelier manner.

Since then, the City has added 18 traffic signals and five warning devices, bringing the total to 60 devices that are currently maintained by this position. The Institute of Transportation Engineers recommends maintaining 30 to 40 devices per signal technician. Additionally, as the City's traffic signal system has become more sophisticated, greater expertise is required for higher level design and troubleshooting of the communication and coordination systems. The level of expertise is now greater than required of the Traffic Signal Technician position. This needed expertise is currently supplied by the City's traffic signal backup contractor, Siemens, as well as callout services when the Traffic Signal Technician is off duty or on vacation. This comes at considerable cost to the City.

Public Works therefore recommends creating a Traffic Signal Maintenance Supervisor position (Attachment 1), which would offer the City the following advantages:

- Reduces response times significantly for virtually all emergency signal maintenance and coordination repairs. In very few situations, such as a

signal pole knock down, wherein a crane and operator are required for the repair, would support from the City's signal maintenance contractor be required. Therefore, going forward, the signal backup services contract could be reduced from \$35,000 to \$10,000 for such emergencies.

- Will allow the City to respond immediately to citizen concerns as well as routine and complex repairs, and also address weekend issues without the callout expense of a contractor. On average, the City has paid about \$22,500 per year for contract signal callouts for the last three years. This translates to 16.7 callouts per year at an average cost of \$1,350 per callout.
- Allows for more sophisticated and safer operation of the traffic signal system with less time required of the City's Traffic Engineer. As the City has upgraded its signal controllers and related equipment at each intersection and then linked the intersections via hardwire or Ethernet, much greater control of the signal phasing and coordination between the signals has become possible. This accounts for the reduced drive times on the major corridors, fewer collisions and fewer complaints from residents in the past few years.

Staff also recommends that the job description for Traffic Signal Technician (Attachment 2) be revised to reflect the reduction in duties, focusing primarily on those associated with routine maintenance of the traffic signal system as well as assisting the Traffic Signal Maintenance Supervisor on more complex and sophisticated operations instead of holding the primary responsibility for same.

ALTERNATIVES:

The City can continue to contract for traffic signal maintenance support for higher-level troubleshooting and weekend backup. Since this provides a lower level of service for traffic signal maintenance than is recommended by the Institute of Transportation Engineers and results in expensive weekend and after hour callouts for traffic signal emergencies, this alternative is not recommended.

Report prepared by: Bryan McKinney, Principal Engineer

Report approved for submission by: Timothy R. Jonasson, P.E.

Public Works Director/City Engineer

Attachments: 1. New Job Description - Traffic Signal Maintenance Supervisor
 2. Revised Job Description - Traffic Signal Technician

THE CITY OF LA QUINTA

TRAFFIC SIGNAL MAINTENANCE SUPERVISOR**GENERAL STATEMENT OF JOB**

Under general supervision, performs general labor in support of various activities and operations throughout the City; performs skilled repair and maintenance of traffic signals, traffic signal systems, traffic signal interconnect and communications with central traffic signal computer systems in other agencies as part of a regional network; may perform troubleshooting and resolution of various other outdoor electrical systems. Coordinates and supervises work of Traffic Signal Technician and or contractors and maintenance personnel.

DISTINGUISHING CHARACTERISTICS

This classification performs at an advanced journey level, performing skilled electrical work in the maintenance, repair, modification, inspection and limited installation of traffic signal systems, traffic signal timing and lighting systems components; the position is assigned more complex or specialized work requiring significant exercise of independent judgment; performs the most difficult and responsible types of duties, including overseeing assigned staff and performing the most complex traffic signal maintenance tasks. Employees at this level are required to be fully trained in all procedures related to assigned area of responsibility and have a thorough knowledge of current federal, state, county and city laws, codes and ordinances related to traffic signal maintenance. This job class works independently while performing the full range of duties; and performs other related duties as assigned.

REPORTS TO: Principal Engineer or Management-assigned designee.

ESSENTIAL FUNCTIONS

The following duties are normal for this position. These are not to be construed as exclusive or all-inclusive. Other duties may be required and assigned.

- Perform higher level trouble shooting and emergency maintenance of traffic signal and lighting systems associated with traffic signal systems, including wiring, conduits, poles, signal heads, controllers, switches, video cameras, and vehicle detectors.
- Provide supervision and training to other traffic signal staff or consultants in traffic signal maintenance principles and practices; answers questions and assists in problem solving.

- Supervise creation of schedules for routine maintenance; ensure accuracy of maintenance records and reports for all maintenance activities.
- Oversee and participate in inspecting, locating, and repairing malfunctions and failures in traffic signal electrical and electronic equipment, circuits, and systems; installs, adjusts, tests, and repairs electric and electronic traffic signal controls and devices; adjusts electronic controllers, pedestrian times, and electronic diagrams.
- Oversee and participate in performing solid state testing and calibration of traffic signal controllers, program clocks, and computers; performs continuity and circuit checks using specialized testing and calibration equipment; repairs switches, time clocks, battery back-up systems and related equipment in the traffic signal system.
- Coordinate routine modification, maintenance and repair of traffic signal wireless and hard wire copper and/or fiber optic interconnect and communication systems for synchronized traffic signal systems and lighting systems, and may perform the same on more complex problems. This includes communications with central traffic signal computer systems in adjacent agencies.
- Set up, monitoring and maintenance of the central traffic management system software (Aries/Centracs).
- Maintain hard wire/wireless communications with the City's computerized signal surveillance systems.
- Coordinate and/or troubleshoot maintenance of In-Pavement Flashing Lighting Systems for Crosswalks, Flashing Beacons and driver speed feedback signs.
- Supervise documentation of and monitor responses to citizen inquiries and requests regarding traffic signal and lighting Systems using GO REQUEST.
- Supervise the proper creation of and maintain work zones for the performance of traffic signal maintenance work which are safe for citizens and workers.
- Coordinate a consistent response to calls for traffic signal emergency repairs including knockdowns within one hour 24 hours a day, 7 days a week except when backup services are in operation.

- Maintain proper equipment inventory; order new replacement equipment through competitive pricing; generate purchase orders.
- Plan check new traffic signal or signal modification plans for functionality and equipment specifications. Supervise inspection and testing of all new equipment installed by contractors.
- Provide estimates of construction material costs for modifying or upgrading existing signal and lighting systems.
- Serve as a liaison between neighboring agencies involved in the construction of traffic signals or equipment.
- Provide detailed expense reports for shared intersections with the Cities of Indian Wells, Indio and Palm Desert.
- Program and upload traffic volume count data from video systems to assist with traffic studies and the General Plan model.
- Assist with the updating of collision data from the City's Police Department for the Crossroads database.
- Participate in the preparation and administration of the assigned program budget, submit budget recommendations, participate in forecasting funds needed for staffing, equipment, materials, supplies; monitor expenditures.
- Participate in the development of goals and objectives as well as policies and procedures; make recommendations for changes and improvements to existing standards, polices, and procedures; participate in the implementation of approved policies and procedures; monitor work activities to ensure compliance with established policies and procedures.

Marginal Functions:

- Attend and participate in professional group meetings; maintains awareness of new trends and developments in the field of traffic signal maintenance and repair; incorporates new developments as appropriate into programs.
- Maintain maintenance manuals, tools, equipment and parts inventory.
- Operate a variety of computer applications as necessary to perform the essential functions.
- Perform related duties and responsibilities as required.

MINIMUM TRAINING AND EXPERIENCE

High school graduation or equivalent; five years of experience involving public works, construction and/or inspection and/or maintenance of traffic signal and

lighting systems; or any equivalent combination of training and experience which provides the required skills, knowledge and abilities.

Required Licenses and Certification

Requires a valid Class B California Drivers' License w/ air brake enhancement;
IMSA Level III Field Technician or equivalent;
IMSA Street Lighting level I or equivalent;
IMSA Work Zone Safety or equivalent.

KNOWLEDGE AND ABILITIES REQUIRED TO PERFORM ESSENTIAL JOB FUNCTIONS

Knowledge of:

- Principles of electrical circuitry and electronics as they relate to traffic signal and lighting systems;
- Principles of mathematics as applied to engineering work;
- Engineering design principles and practices;
- Recent developments, current literature and sources of information regarding traffic signal and lighting systems;
- Traffic signal and lighting inspection and testing methods;
- Modern office procedures, methods, and computer equipment;
- Standard methods and practices used in personnel management;
- Pertinent federal, state and local codes, laws and regulations;
- Maintenance of NEMA Econolite;
- Maintenance of a variety of Video Detection Systems, not limited to Econolite, Iteris, Aldes and Peak video detection systems, RS232, Radio and Wireless Ethernet; communications equipment; retro reflective sign testing equipment.

Physical Requirements:

- Ability to exert considerable physical effort in moderate to heavy work involving stooping/kneeling, pushing/pulling, and lifting/carrying;
- Ability to differentiate between and perceive texture, sound, and form.
- Ability to operate a variety of engineering equipment, including a personal computer and peripheral equipment, calculator, and engineering scales;
- Ability to use fine and gross motor coordination in performing data entry and in driving a car;
- Ability to exert light physical effort in sedentary to light work involving sitting and walking or moving from one place to another;
- Ability to exert a negligible amount of force periodically to lift, carry, push, pull, or otherwise move objects;

Supervisory Responsibilities:

- Ability to assign, review, plan and coordinate the work of other employees

- and contract personnel;
- Ability to provide instruction and guidance to staff; and promote staff development and motivation; and analyze problems that arise in the areas under supervision and recommend solutions;
- Ability to recommend the discipline or discharge of staff, transfers or promotion of employees, changes affecting contract inspection personnel;
- Ability to assess the work of employees and write performance appraisals.

Mathematical Ability:

- Ability to add, subtract, multiply and divide;
- Ability to calculate decimals, ratios, percentages and fractions;
- Ability to calculate and apply a variety of formulas and statistics.

Judgment and Situational Reasoning Ability:

- Ability to apply principles of rational systems such as interpreting and applying basic traffic engineering principles;
- Ability to use independent judgment in periodically non-routine situations.

Language Ability and Interpersonal Communication:

- Ability to maintain basic records of work performed and equipment used;
- Ability to comprehend and correctly use a variety of informational documents including invoices and insurance forms;
- Ability to prepare letters of correspondence, purchase orders, traffic counts, traffic control plans, and staff reports using prescribed format and conforming to all rules of punctuation, grammar, diction and style;
- Ability to comprehend a variety of reference books and manuals including traffic engineering standards and plans, municipal and vehicle codes, computer manuals and maps;
- Ability to read and interpret maps and traffic control manuals;
- Ability to communicate effectively with coworkers, supervisor, sheriff's department personnel, sales persons and citizens orally.

Environmental Adaptability:

- Ability to work in an outdoor environment, subject to heat and cold, noise, toxic agents, vibration, dust, smoke and electrical currents.

The City of La Quinta is an Equal Opportunity Employer. In compliance with the Americans With Disabilities Act, La Quinta will provide reasonable accommodations to qualified individuals with disabilities and encourages both prospective employees and incumbents to discuss potential accommodations with the employer.

THE CITY OF LA QUINTA

TRAFFIC SIGNAL TECHNICIAN**GENERAL STATEMENT OF JOB**

Under direct supervision of the Traffic Signal Maintenance Supervisor, performs general labor in support of various traffic signal maintenance activities and operations throughout the City; performs semi-skilled repair and maintenance of traffic signals. This includes Level 1, II and III regular maintenance of the traffic signals; Performs troubleshooting and resolution of various other outdoor electrical system issues related to landscape, street lighting, median island, parking lot, and tennis court lighting systems.

DISTINGUISHING CHARACTERISTICS

This job class performs semi-skilled, entry level electrical work in maintenance, repair, modification, inspection and limited installation of traffic signal systems, and lighting systems components; maintains records and prepares reports for these activities; and performs other related duties as assigned. This position receives supervision from the Traffic Signal Maintenance Supervisor

REPORTS TO: Traffic Signal Maintenance Supervisor

ESSENTIAL FUNCTIONS

The following duties are normal for this position. These are not to be construed as exclusive or all-inclusive. Other duties may be required and assigned.

- Perform routine and emergency maintenance of traffic signal and lighting systems associated with highway traffic signal systems, including wiring, conduits, poles, signal heads, controllers, switches, video cameras, and vehicle detectors.
- Develop schedules for routine maintenance, maintain records and prepare reports for all maintenance activities.
- Inspect installation and modification of traffic signals, battery backup and lighting systems.
- Perform modification, maintenance and repair of traffic signal wireless and hard wire copper and/or fiber optic interconnect and communication systems for synchronized traffic signal systems and lighting systems.

Resolve routine traffic signal timing and communication problems, Maintain

In-Pavement Flashing Lighting Systems for Crosswalks, Flashing Beacons and driver speed feedback signs.

- Respond to citizen inquiries and requests regarding traffic signal and lighting systems.
- Create and maintain work zones for the performance of traffic signal maintenance related work, which are safe for citizens and workers.
- Consistently respond to calls for traffic signal emergency repairs including knockdowns within one hour 24 hours a day, 7 days a week except when backup services are in operation.

Marginal Functions:

- Attends and participates in professional group meetings; stays abreast of trends and innovations in traffic engineering;
- Maintains maintenance manuals, tools, equipment and parts inventory;
- Operates some computer applications as necessary to perform the essential functions;
- Performs related duties and responsibilities as required.

MINIMUM TRAINING AND EXPERIENCE

High school graduation or equivalent; two years of experience involving public works, construction and/or inspection and/or maintenance of traffic signal and lighting systems; or any equivalent combination of training and experience which provides the required skills, knowledge and abilities.

Required Licenses and Certification

Requires a valid Class B California Drivers' License;
Training in Traffic Signal Maintenance/Inspection is preferred;
Possession of, or ability to obtain, an IMSA Certification is desirable.

KNOWLEDGE AND ABILITIES REQUIRED TO PERFORM ESSENTIAL JOB FUNCTIONS

Knowledge of:

- Principles of electrical circuitry and electronics as they relate to traffic signal and lighting systems;
- Principles of mathematics as applied to engineering work;
- Engineering design principles and practices;
- Recent developments, current literature and sources of information regarding traffic signal and lighting systems;
- Traffic signal and lighting inspection and testing methods;

- Modern office procedures, methods, and computer equipment;
- Pertinent federal, state and local codes, laws and regulations;
- Maintenance of NEMA Econolite controllers;
- Maintenance of various video detection systems.

Physical Requirements:

- Ability to exert considerable physical effort in moderate to heavy work involving stooping/kneeling, pushing/pulling, and lifting/carrying;
- Ability to differentiate between and perceive texture, sound, and form;
- Ability to operate a variety of engineering equipment, including a personal computer and peripheral equipment, calculator, and engineering scales;
- Ability to use fine and gross motor coordination in performing data entry and in driving a car;
- Ability to exert light physical effort in sedentary to light work involving sitting and walking or moving from one place to another;
- Ability to exert a negligible amount of force periodically to lift, carry, push, pull, or otherwise move objects.

Mathematical Ability:

- Ability to add, subtract, multiply and divide;
- Ability to calculate decimals, ratios, percentages and fractions;
- Ability to calculate and apply a variety of formulas and statistics.

Judgment and Situational Reasoning Ability:

- Ability to apply principles of rational systems such as interpreting and applying basic traffic engineering principles;
- Ability to use independent judgment in periodically non-routine situations.

Language Ability and Interpersonal Communication:

- Ability to maintain basic records of work performed and equipment used;
- Ability to comprehend and correctly use a variety of informational documents including invoices and insurance forms;
- Ability to prepare letters of correspondence, purchase orders, traffic counts, traffic control plans, and staff reports using prescribed format and conforming to all rules of punctuation, grammar, diction and style;
- Ability to comprehend a variety of reference books and manuals including traffic engineering standards and plans, municipal and

- vehicle codes, computer manuals and maps;
- Ability to read and interpret maps and traffic control manuals;
- Ability to communicate effectively with coworkers, supervisor, sheriff's department personnel, sales persons and citizens orally.

Environmental Adaptability:

- Ability to work in an outdoor environment, subject to heat and cold, noise, toxic agents, vibration, dust, smoke and electrical currents.

The City of La Quinta is an Equal Opportunity Employer. In compliance with the Americans With Disabilities Act, La Quinta will provide reasonable accommodations to qualified individuals with disabilities and encourages both prospective employees and incumbents to discuss potential accommodations with the employer.

January 2014