

**CLASS SPECIFICATION**  
**Senior Traffic Signal Technician**

**GENERAL PURPOSE**

Under general supervision, performs installation, testing, calibration, maintenance, inspection and repair of electrical, electronic and electro-mechanical traffic signal and lighting equipment, devices, controls, machinery and related appurtenances; and performs related duties as assigned.

**DISTINGUISHING CHARACTERISTICS**

Senior Traffic Signal Technicians are responsible for installing, testing, maintaining, inspecting and repairing electrical, electronic and electro-mechanical traffic signal and lighting equipment, devices, controls, machinery and related appurtenances and ensuring these systems meet City and Cal Trans standards for safe, correct and efficient operation. Incumbents are expected to carry out job duties with minimal supervision and exercise independent initiative and judgment.

**ESSENTIAL DUTIES AND RESPONSIBILITIES**

The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to this class.

1. Installs, tests, calibrates, inspects, performs preventive maintenance and repairs electrical, electronic and electro-mechanical traffic signal equipment, devices, controls, machinery and related appurtenances; cleans and vacuums controller cabinets and services cabinet and auxiliary equipment; inspects vehicle and pedestrian detector operations and inspects the condition of vehicle detection loops in roadways; splices, repairs or replaces damaged underground signal and loop wiring; verifies and adjusts controller programmed timing data to cabinet timing chart; inspects the operation of communication equipment; inspects and tests emergency vehicle pre-emption equipment; inspects battery back-up units and loads test back-up batteries.
2. Troubleshoots malfunctioning signalized intersections, interconnected signal systems, communications equipment and other equipment and devices; performs complex modifications to equipment in the field to change traffic sequencing while maintaining safe operation of the signal lights; repairs damage to signal equipment, loop detection and loop conductors, underground wiring and other equipment and devices.
3. Performs testing of traffic signal cabinets; powers new and battery back-up signal cabinets; installs related internal equipment, including batteries, detectors, load switches, monitors and controllers; enters program in controllers; ensures cabinets are assembled according to as-built plans.
4. Inspects all traffic signal and street lighting apparatus, including poles, framework, hardware, housing, lenses and signs; adjusts signal heads and cleans and paints surfaces of signal heads to meet standards for visibility; removes graffiti from cabinets and poles.

5. Orders and maintains an inventory of traffic signal equipment and parts; conducts annual equipment inventories; returns defective and failed equipment to vendors; maintains a traffic signal equipment inventory database of all City signalized intersections; maintains and updates databases of equipment warranties and equipment sent for repair or returned as defective.
6. Designs and constructs fixtures and devices to test and repair traffic signal equipment and test equipment prior to installation at new intersections.
7. Packages and stores hazardous waste materials for recycling or disposal, ensuring compliance with federal and state laws and regulations.
8. Maintains and updates detailed traffic signal logs and maintenance records.

#### **OTHER DUTIES**

1. Performs stand-by duties, answering emergency call-outs as required.
2. Provides training and guidance to staff as required.
3. May act as Traffic Operations Supervisor in that individual's absence.

#### **QUALIFICATIONS**

##### **Knowledge of:**

1. Principles, methods and equipment used in the installation, maintenance, testing and repair of electrical and electronic traffic signal equipment and devices.
2. Electrical power distribution, circuitry and motor control system design as it relates to traffic signal and lighting equipment.
3. Operating characteristics of electronic components.
4. Traffic signal operations and timing parameters.
5. Applicable federal, state and local laws, rules and regulations governing traffic signals.
6. Principles and practices of administration, including purchasing and the maintenance of public records.
7. Safe work methods and safety regulations pertaining to the work.

##### **Ability to:**

1. Use modern, state-of-the-art precision and diagnostic instruments to install, test, calibrate and repair complex electrical and electronic devices and equipment.
2. Read and interpret blueprints, drawings, specifications and manuals.
3. Exercise independent judgment and initiative within established guidelines.

4. Establish and maintain effective working environments with City management, staff, contractors, the public and others encountered in the course of work.

**Education, Training and Experience:**

A typical way of obtaining the knowledge, skills and abilities outlined above is graduation from high school or G.E.D. equivalent; and five years of journey-level electrical and/or electronics maintenance, installation and repair experience; or an equivalent combination of training and experience.

**Licenses; Certificates; Special Requirements:**

Current, valid certification as a Traffic Signal Technician II through the International Municipal Signal Association.

A valid California driver's license and the ability to maintain insurability under the City's vehicle insurance policy.

**PHYSICAL AND MENTAL DEMANDS**

The physical and mental demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

**Physical Demands**

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee frequently is required to stand and talk or hear; walk; sit; climb or balance; stoop, kneel, crouch, or crawl. The employee must frequently lift and/or move up to 50 pounds, and occasionally lift and/or move up to 100 pounds.

Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and the ability to adjust focus.

**Mental Demands**

While performing the duties of this class, employees are regularly required to use written and oral communication skills; read and interpret data, information and documents; analyze and solve problems; use math and mathematical reasoning; observe and interpret situations; learn and apply new information or new skills; work under deadlines with constant interruptions; interact with City management, staff, contractors, the public and others encountered in the course of work.

**WORK ENVIRONMENT**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

The employee regularly works in outside weather conditions. The employee frequently works near moving mechanical parts; is exposed to wet and/or humid conditions, vibration, and street/road traffic; and works in high, precarious places. The employee is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock. The noise level is frequently loud.