STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

CLASSIFICATION TITLE	OFFICE/BRANCH/SECTION	
Senior Transportation Electrical Engineer, Supervisor	56/Office of Transportation Management Systems Maintenance	
WORKING TITLE	POSITION NUMBER	REVISION DATE
Senior TMS Maintenance Engineer	913-630-3164-001	09/29/2025

As a valued member of the Caltrans team, you make it possible to improve lives and communities through transportation.

GENERAL STATEMENT:

Under the general direction of the Chief, Office of Transportation Management Systems (TMS) Maintenance, the incumbent provides support to district field maintenance activities related to annual Major Maintenance Contract for Delivery (for HM4 - TMS related systems), updates SHSMP/Ten Year Plan documents related to Asset Management of the Signs and Lighting rehabilitation, coordinates the materials resources for Transportation Management Systems (TMS) parts procurement, and manages special projects for the Office. Attends, participates, reviews, and provides input to activities and documents pertaining to Strategic Plans; Departmental, Division, Office, and Branch policies, procedures and reports; research projects; relevant committees; and legislative documents. Supervises and directs the work of professional staff responsible for the maintenance of communications, traffic management and electrical systems related to TMS. The incumbent, in partnership with district and HQ practitioners, divisions, and local agencies, provides leadership and guidance in continuously transforming the Department's TMS into a high-performing and integrated multi-modal transportation system for the State of California.

CORE COMPETENCIES:

As a Senior Transportation Electrical Engineer, Supervisor, the incumbent is expected to become proficient in the following competencies as described below in order to successfully perform the essential functions of the job, while adhering to and promoting the Department's Mission, Vision, Values, Strategic Imperatives and Goals. Effective development of the identified Core Competencies fosters the advancement of the following Leadership Competencies: Change Commitment, Risk Appetite, Self-Development/Growth, Conflict Management, Relationship Building, Organizational Awareness, Communication, Strategic Perspective, and Results Driven.

TYPICAL DUTIES:

Percentage	Essential (E)/Marginal (M)[1]	Job Description
40%	E	TMS Inventory and Asset Management: Supervises and directs the work of engineers responsible for overseeing the statewide TMS Asset inventory and engaged with other Divisions on delivery of electrical engineering Highway Maintenance (HM) projects involving highway lighting, traffic control systems, Transportation Management Systems (TMS) and electrical systems. Works with districts and HQ to develop maintenance and asset health management plans for TMS elements which include, but are not limited to, Closed Circuit Television (CCTV) cameras, Changeable Message Signs (CMS), Vehicle Detection Stations (VDS), Traffic Census stations, Traffic signals, Ramp metering (RM) systems, Roadway Weather Information Systems and Highway Advisory Radio (HAR) systems. Works with HQ staff that assist the districts to manage, maintain, validate and update TMS inventory and IMMS databases; Notifies HQ Traffic Operations of TMS units with chronic performance issues for early life cycle replacement. Works with Districts to ensure preventative maintenance checks and functional tests on TMS elements are regularly performed. Provides asset management support for TMS, highway lighting, and other electrical systems. Works with staff to provide program support for the lighting rehabilitation section of the State Highways Strategic Management Plan (SHSMP), reviews program objectives, works with Office branches to establish needs and direction, interacts with Asset Management Program personnel in developing SHSMP targets, identifies data sources and needs, and works with other programs on asset management issues involving TMS.

25%	E	TMS Uptime/Performance/Procurement: Supervises and directs the work of staff responsible for providing the districts maintenance and restoration support to sustain reliable and responsive TMS field elements. Monitors Statewide TMS unit up-time health and reviews performance reports. Works with staff to develop standardized statewide troubleshooting and repair processes to minimize TMS unit downtime. Ensures staff creates TMS Trac tickets for defective or non-operational TMS elements to tracks TMS element issues and repairs. Monitors TMS field element performance, health and restoration activities. Manages and monitors reports on TMS performance and makes recommendations to resolve performance issues. Works with staff and other units to ensure district level of service (LOS) for TMS preventative maintenance activities. Acts as HQ TMS Maintenance Functional Manager. Coordinates purchasing of TMS related parts and materials with districts. Receives district needs and develops allocation. Assists with electrical specifications and IT procurement process. Monitors procurement and authorizes resource transfers to districts. Prepares current FY statewide PS and OE budgets and forecasts future maintenance budgetary needs for the District's TMS infrastructure restoration needs.
20%	E	Major Maintenance Support: Assists HM4 Program Manager in the administration of HM4 Major Maintenance projects, sets program targets and objectives for HM4 in the annual Major Maintenance Memo, reviews district project proposals, acts as program consultant to district maintenance engineers, recommends approval of HM4 Major Maintenance work plan/contract for delivery, tracks project progress, tracks project expenditures, and manages annual program allocation. Provides support and administration of special projects (on-going and one time), works with division and district personnel to set project objectives, develops workplans and timelines, identifies resource needs, and administer special projects. Acts for the Office Chief when required, and assists the Office Chief with the review, research and preparation of responses and inquiries to policies, governmental legislation, and other matters associated with the HM4 Program.
10%	E	Process Improvement/Collaboration: Ensures that processes are in place to measure system reliability, maintainability, performance, capacity and expansion. Works with Districts to improve TMS health and performance. Prepares technical correspondence, presentations and reports. Communicates and collaborates regularly with HQ and District personnel to discuss TMS policy, MOUs, planning, technical, and administrative details.
5%	M	Acts for the Office Chief when required, and assists the Office Chief with the review, research and preparation of responses and inquiries to policies, governmental legislation, and other matters associated with the TMS program.

[1]ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned.
MARGINAL FUNCTIONS are the minor tasks of the position that can be assigned to others.

SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

The incumbent supervises a team of engineers. May provides project direction to consultants and contractors.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

The employee must have knowledge of the general principles and techniques in managing technology programs and projects in large organizations; principles and techniques of personnel management and supervision; systems engineering methodology; concepts for developing and operating traffic control systems; relevant national ITS standards including the National Transportation Communications for ITS Protocol, and the ITS National Architecture; project management, contract management and contract administration processes and techniques; design and preparation of plans, specifications, and estimates for traffic control systems; electrical and electronic theory as applied to traffic control systems; principles and practices of traffic engineering as they apply to traffic control; various codes and field practices governing the design and installation of traffic control equipment; basic occupational safety and health regulations contained in the Title 8 Industrial Relations, Electrical Safety Orders, materials and construction costs for traffic control systems; digital electronics, microprocessors, and development of strategies for traffic control; computer-based traffic management equipment; principles and techniques of personnel management. The employee must possess the ability to: plan, lead, organize, direct, and supervise the work of others; establish and maintain cooperative relations with those contacted in the course of the work; promote equal opportunity in employment and promotion, and maintain a work environment that is free of discrimination and harassment; prepare correspondence and reports; communicate effectively; administer an engineering program; work effectively and partner with others as an interdisciplinary team member; express ideas and communicate effectively both orally and in writing; prepare technical correspondence and comprehensive reports; address an audience effectively and participate in public presentations; analyze situations accurately and adopt an effective course of action; effectively lead and contribute to the department's strategic management, safety, health, equal opportunity and labor relations objectives.

The employee must have current knowledge of:

- Department Project Development Process
- Principles of Asset Management
- Department Asset Management process
- Electrical design practices
- Traffic engineering, traffic management, and traffic operations
- Electrical and electronic theory as applied to traffic control systems, components, circuits and troubleshooting
- Department and Division functions, policies, procedures, standards, and operations
- Codes, safety orders, regulations and field practices governing design and installation of traffic control systems
- Contract standards, design and construction practices, and the State Contract Act
- Caltrans mission, vision, goals, and strategic management plan
- Project management, contract management, and contract administration processes and techniques
- Methods, tools, and equipment used in electrical and electronic construction work

The employee must have the ability to:
- Understand and convey technical engineering information both verbally and in writing
- Review and to affect the necessary changes due to technical inaccuracies and discrepancies on work done by others
- Deal effectively with multiple and often conflicting demands
- Accurately interpret engineering drawings, circuit diagrams, and specifications
- Analyze situations accurately and adopt an effective course of action
- Establish and maintain cooperative and productive relations with others in the work place
- Prepare technical correspondence and reports
- Analyze situations regarding roadway electrical and electronic systems and design concepts
- Apply Department's policy, procedures, and guidance regarding the development, publication, and use of the standards
- Analyze program and project requirements
- Serve in a consulting capacity to other divisions and districts, and establish and maintain cooperative relationships with individuals and organizations contacted during the course of work
- Work effectively either independently, or with others as an interdisciplinary team member both in person and electronically.
- Communicate effectively both orally and in writing with industry representatives or management personnel, participate in public presentations, and solicit outside expertise when required
- Exhibit a high degree of technical expertise in order to gain the support and confidence of both management and industry professionals
- Produce quality documentation and flow diagrams
- Apply logic, education and job experience to develop proposals, research and obtain solutions, recognize erroneous data, and review and comment on the work of other technical professionals

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The incumbent is responsible for the reliability and accuracy of all actions, decisions, and recommendations in his/her capacity. Effective communication, proper use of equipment, correct methods analysis, and timely meeting of all deadlines are the responsibility of the incumbent. Consults and makes decisions on resource needs. Errors may lead to the inefficient use of resources and materials, delay in schedules which may adversely affect the outcome of project delivery and increase in cost of solutions to critical problems as well as adversely affect the payback for expended efforts of team members and the loss of opportunities to make California roadways safe and efficient. Lack of sensible decisions could lead to use of defective equipment, contract and project completion delays, lawsuits for damages, late or unauthorized payments, costly complaints, and failure to secure funding for purchased products.

PUBLIC AND INTERNAL CONTACTS

Public contacts will be by telephone, e-mail, letter, and in-person from citizens, other state agencies, local government representatives (law enforcement, public works departments, etc.), and business partners (manufacturers, contractors, vendors) regarding complaints, use of materials, or contract issues. Internal contacts will be by the same, from district personnel, Division of Traffic Operations, Division of Engineering services, and other HQ programs regarding maintenance policies and practices, and statewide standards for electrical systems. Additional frequent contact may be made with Division of Procurement and Contracts, Caltrans Legal, Department of Industrial Relations, Contractors State License Board (CSLB), and Division of Information Technology on service contract issues.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The incumbent may be required to sit for long periods of time using a keyboard/mouse and video display terminal.

Mental Requirements include ability to sustain mental activity necessary for report writing, problem solving, analysis and reasoning when it comes to judgment that relates to public safety, emergencies and traffic safety. Quick turn around of documents and data analysis required leading to a sometimes stressful working environment. Must have the ability to multi-task, adapt to changes in priorities, and complete tasks or projects on time. Ability to sit for prolonged periods of time and may be required to work beyond normal work hours during emergencies. Must grasp the essence of new information and master new technical and business knowledge. Must maintain and follow safe work practices, including operation of vehicle amber lights in

an appropriate and safe manner.

Emotional requirements include ability to develop new insights into situations and apply innovative solutions to make organizational improvement. Ability to resolve emotionally charged issues reasonably and diplomatically. Must be able to develop and maintain cooperative working relationships. Behaves in a fair and ethical manner toward others and demonstrates a sense of responsibility and commitment to public service.

WORK ENVIRONMENT

Approximately 85 percent of the incumbent's time will be spent in typical office environment performing day-to-day operations. The workload consists of prolonged sitting under artificial lighting and using a computer. Light to moderate lifting of documents, electronic equipment, and supplies is required. Approximately 15 percent of the incumbent's time will be spent in the field, meeting with district personnel. Occasional travel to the field will be required as necessary to provide technical direction to staff on how to configure or troubleshoot various TMS/ITS elements. The work environment may include hazards such as traffic, working in and around high radio frequency, electromagnetic fields, high voltage environments, and other outdoor situations. Employees will be exposed to walking on varied terrain and in various climates.
Incumbent must possess a valid Driver's License and maintain the license in good standing at all times.

I have read, understand and can perform the duties listed above. (If you believe you may require reasonable accommodation, please discuss this with your hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

I agree that by providing my electronic signature for this form, I agree to conduct business transactions by electronic means and that my electronic signature is the legal binding equivalent to my handwritten signature. I hereby agree that my electronic signature represents my execution or authentication of this form, and my intent to be bound by it.

EMPLOYEE (Print)	
EMPLOYEE (Signature)	DATE

I have discussed the duties with, and provided a copy of this duty statement to the employee named above.

SUPERVISOR (Print)	
SUPERVISOR (Signature)	DATE