

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

CLASSIFICATION TITLE Transportation Engineer (Elect)	OFFICE/BRANCH/SECTION District 8 / Maintenance / TME Unit (EFIS# 4278)	
WORKING TITLE TMS Maintenance Engineer (Elect) (TME)	POSITION NUMBER 908-609-3609-XXX	REVISION DATE

As a valued member of the Caltrans leadership team, you make it possible for the Department to provide a safe and reliable transportation network that serves all people and respects the environment.

GENERAL STATEMENT:

Under the direction of the Senior Transportation Electrical Engineer (Supervisor), the incumbent assists to manage and monitor the up-time health performance of the State Highway System (SHS) as it relates to electrical and electronic Transportation Management Systems (TMS). The TME performs electrical engineering, and analysis to ensure reliable, continuous and high performing TMS/ITS electrical installations within the SHS. The TME provides support on contract management, new project reviews, systems operation, performance, and reliability of an end-to-end TMS infrastructure that is comprised of TMS field systems, traffic control systems, communications systems, and other traffic management and electrical and electronic systems that utilize state of the art technology.

CORE COMPETENCIES:

As a Transportation Engineer (Elect), 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.

- **Creativity and Innovation:** Thinks beyond the confines of traditional models to recognize opportunities, seek creative solutions and take intelligent risks. (Strengthen Stewardship and Drive Efficiency, Lead Climate Action - Innovation, Pride)
- **Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Cultivate Excellence - Engagement, Integrity)
- **Initiative:** Ability to identify what needs to be done and doing it before being asked or required by the situation. Seeks out others involved in a situation to learn their perspectives. (Cultivate Excellence, Lead Climate Action - Engagement)
- **Problem-solving and Decision-making :** Identifies problems and uses logical analysis to find information, understand causes, and evaluate and select or recommend best possible courses of action. (Enhance and Connect the Multimodal Transportation Network, Advance Equity and Livability in all Communities - Equity)
- **Fostering Diversity:** Capable of working with a diverse work group, including but not limited to differences in race, nationality, culture, age, gender, and differently able. Makes everyone feel valuable regardless of diversity in personality, culture, or background. Fosters a diverse culture to create best solutions. (Cultivate Excellence, Advance Equity and Livability in all Communities - Equity, Integrity)
- **Organizational Awareness:** Contributes to the organization by understanding and aligning actions with the organization's strategic plan, including the mission, vision, goals, core functions, and values. (Safety First, Lead Climate Action - Equity, Innovation, Pride)
- **Communication:** Expresses oneself clearly in all forms of communication. Gives feedback and is receptive to feedback received. Knows that listening is essential. Keeps others in the Division and other functional units informed as appropriate. (Safety First, Cultivate Excellence - Equity, Integrity)
- **Forward Thinking:** Anticipates the implications and consequences of situations and takes appropriate actions to be prepared for possible contingencies. Anticipates and prepares for future developments. (Strengthen Stewardship and Drive Efficiency, Lead Climate Action - Engagement, Innovation)
- **Thoroughness:** Ensures that work and information is complete and accurate. Ensures that assignment goals, objectives, and completion dates are met. Documents and reports on work progress. (Safety First, Strengthen Stewardship and Drive Efficiency - Engagement, Integrity)

TYPICAL DUTIES:

Percentage	Job Description
Essential (E)/Marginal (M) ¹	

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

50%	E	Provides maintenance and restoration support to sustain reliable and responsive TMS field elements. Monitors TMS unit up-time health and generates performance reports. Develops efficient troubleshooting and repair processes to minimize TMS unit downtime. Performs initial trouble shooting of reported TMS element issues. Generates TMS Trac tickets for defective or non-operational TMS elements to Electrical Maintenance, Tracks TMS unit system issues and repairs utilizing IMMS and Trac. Monitors TMS field element performance, health and restoration activities. Provides technical guidance to electricians, technicians and contractors and supports troubleshooting of non-operational TMS field elements. Manages and monitors reports on TMS performance and makes recommendations to resolve performance issues. Works with field staff to ensure district level of service (LOS) for TMS preventative maintenance activities. Attends and conducts meetings regarding contract administration, enforcement, and policy development. Provides expertise and training of Traffic Management Systems (TMS) and related electrical field elements and setup, configuration and troubleshooting to maintenance staff.
30%	E	TMS Asset inventory. Develops 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), Traffic Monitoring and Vehicle Detection Stations (TMS/VDS), traffic signals, ramp metering (RM) systems and Highway Advisory Radio (HAR) systems. Manages, maintains, validates and updates TMS inventory and IMMS databases; works with District Signal Lighting Coordinator (SLC) to ensure TMS elements are added to IMMS. Advises Traffic Operations of TMS units with chronic performance issues for early life cycle replacement. Works with Field Maintenance to coordinate preventative maintenance checks and functional tests on TMS elements. Manages and monitors replacement of TMS field elements and their subcomponents. Develops reports for inventory stakeholders. Coordinates with Maintenance, Traffic Operations and external customers to develop projects to improve TMS health and performance. Manages maintenance service contracts for TMS elements.
10%	M	Meets with Electrical Maintenance, Construction, Design and Traffic Operations and assists with the development and successful implementation of TMS projects. Meets with District Maintenance, and other Traffic Operations personnel to discuss TMS policy, planning, technical, and administrative details which may affect Maintenance operations. Coordinates with Maintenance and Traffic Operations personnel to ensure level of service and system performance expectations are met.
10%	M	Provides engineering, maintenance and technical support for electrical/electronic systems, and other TMS related activities; coordinate, monitor and assist with the development of various projects. Conducts field surveys to ensure that electrical/electronic, communications systems projects are fully completed, operational and in accordance with the Department's policies, guidelines and/or specifications. Works with HQ and District personnel in establishing best practices for analysis, management and standardization of TMS and highway electrical systems.

¹ESSENTIAL 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

May act as lead to provide technical direction for technicians, electrical engineers and student assistants as the need arises.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

The incumbent must have current knowledge of:

Caltrans' and Traffic Operations' mission, vision, goals and strategic management plan.

Traffic engineering, traffic management, and traffic operations.

Electrical and electronic theory as applied to traffic control systems, components, circuits and troubleshooting.

Knowledge and experience with state contracting administration and procedures for contracts such as professional services, construction and agreements such as maintenance agreements.

Methods, tools, and equipment used in electrical and electronic construction work

Project development, specifications and general knowledge of design, construction and maintenance techniques.

Office applications, word processing, spreadsheets, presentations, take minutes at meetings and prepare meeting calendars.

The incumbent must possess the following General Competency Skills:

Analytical Thinking: Approach a problem by using a logical, systematic, sequential approach.

Communication: Listen to others and communicate in an effective manner.

Customer Focus: Identify and respond to current and future client needs, and provide excellent service to internal and external

ADA Notice

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POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

clients.

Ethics and Personal Credibility: Uphold ethics and personal integrity, and demonstrate trustworthiness, reliability and responsibility.

Relationship Building: Maintain, and strengthen relationships with others inside or outside the organization who can provide information, assistance, and support.

Teamwork: Work effectively with other team members to achieve common goals, and complete assignments in a group setting.

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. Errors may lead to the 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

Frequent contact with District units and HQ personnel will be required. Periodic contact with consultants and other public agencies.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The incumbent is required to sit for long periods of time using a keyboard and video display terminal, and maintain long periods of concentration during analysis. Must have a strong desire and willingness to deliver, and possess knowledge and ability to operate modern office equipment including computers and software programs such as MS Office. Must possess the ability to sit, stand, walk, kneel, and lift 25 lbs.

The incumbent must be able to interact cooperatively with many people, deal effectively with pressure; multitask; adapt to changing priorities; maintain focus and intensity; remain optimistic and persistent even under adversity. Must be receptive to change and new information; adapt behavior and work methods in response to new information; changing conditions or unexpected obstacles; adjust rapidly to new situations warranting attention and resolution. Must be prepared to meet deadlines and complete assignments on time and occasionally under pressure. Must be available for occasional travel to various locations throughout California and perform fieldwork, observations, measurements, and studies.

The incumbent must be able to maintain a professional work ethic while communicating and coordinating with others under all conditions. Must behave in a fair and ethical manner toward others, demonstrate a sense of responsibility and commitment to public service, and value cultural diversity and individual differences in the workforce.

The incumbent needs to be comfortable fielding large numbers of inquiries for information and to respond immediately with assistance in solving problems. The incumbent needs to be able to work with others on projects and deliver results by deadlines. The incumbent needs to work effectively under pressure of imminent due dates and persistent tasks.

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. Behave in a fair and ethical manner toward others and demonstrates a sense of responsibility and commitment to public service.

WORK ENVIRONMENT

Normally, the incumbent will work in a climate-controlled office under artificial lighting. On occasion, the incumbent may be required to visit the District offices and Headquarters. Possession of a valid driver's license is required when operating a state owned or leased vehicle. The incumbent will be required to drive either a personal or state vehicle to some locations. The incumbent may also be required to use public transit (bus or train) or fly to Caltrans sanctioned meetings or training. Occasionally, the incumbent may be required to work outdoors to do field reviews, investigations, and monitor traffic problems, and may be exposed to dirt, noise, uneven surfaces, and/or extreme heat or cold. While in the field, the incumbent must follow safety training and regulations, be constantly alert and responsible for personal safety when working alongside the roadway.

This position requires a valid California Driver's License.

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POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

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.)

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