

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

CLASSIFICATION TITLE Transportation Engineer (Elect)	OFFICE/BRANCH/SECTION Systems Development/Central Systems & TMC Support	
WORKING TITLE System Application Engineer	POSITION NUMBER 913-350-3609-917	REVISION DATE 12/11/2025

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

GENERAL STATEMENT:

Under the direction of the Branch Chief of Central Systems & Traffic Management Centers (TMCs) Support, a Senior Transportation Electrical Engineer (Supervisor), the incumbent, a Transportation Engineer (Electrical), serves as the System Application Engineer in the Central Systems & TMC Support Branch.

The incumbent designs system architecture, develops specifications for new technologies, performs systems engineering, manages the scope and deliverables for outsourced technology development and acquisition, supports software development, and provides technical and sustaining engineering for the Intelligent Transportation System (ITS) used to operate the Department's traffic management and control systems.

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.

TYPICAL DUTIES:

Percentage Essential (E)/Marginal (M) ¹	Job Description
35% E	Provides systems engineering, project management, and technical support for computer hardware, software, and networking systems of ITS used within District Traffic Management Centers (TMCs). Manages integrity, scope, and deliverables for outsourced technology development and acquisition. Supports software development, installation, configuration, and troubleshooting for end users and system up-time. Supports traffic video display systems with Common Operating Picture (COP) for TMCs and Emergency Operations Centers (EOCs).
30% E	Supports ITS Systems projects such as the California Advanced Transportation Management System (CATMS) project, and the Performance Management System (PeMS) upgrade project. Develops the scope of work/services for related contracts and works with stakeholders to develop system requirements. Approves products and services and ensures contractors provide products that are compliant with contract specifications and scope of work. Ensures compliance with contract provisions, monitors contract progress per project schedule, monitors expenditures, authorizes payments, and works with program administrative staff to close out contracts. Oversees and manages maintenance contracts for existing systems, such as Intelligent Roadway Information System (IRIS) and WeatherShare. Develops ITS system architecture, specifications, and design documentation. Pilots and tests new and emerging technologies for deployment within the Districts. Prepares and validates new versions of software programs using standardized test procedures.
30% E	Performs Traffic Management Center (TMC) systems asset management by tracking and evaluating servers, processors, storage, networks, hardware, and software applications to proactively forecast lifecycle replacement and maintenance needs. Advocates for IT standards and technology upgrades to ensure TMC systems can meet current operational demands and adapt to emerging requirements. Supports statewide workforce development by contributing to professional capacity-building academies, workshops, and training sessions for electrical engineering staff. Reviews, updates, and maintains system, interface, and software design manuals and documentation to ensure consistency, accuracy, and usability ultimately enabling reliable TMC operations, informed planning, and continuous technical improvement.

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5% M Completes a variety of special projects and assignments as needed by the Division Chief, Deputy Division Chief, Office Chief, and Branch Chief. Performs other work commensurate with the Transportation Engineer (Electrical) classification.

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

None. May act in a lead capacity on special projects.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Requires knowledge of: Computer theory and operation, including state-of-the-art technology (i.e. CADD, personal computers, stand-alone interactive systems and various technical aids); mathematics related to electrical engineering; theory principles, standard practices, techniques and methods used in electrical, electronic and computer engineering; modern electrical apparatus, communications, instrumentation; direct and alternating current circuits; methods, materials, tools and equipment used in electrical, electronic or computer work; various codes; basic occupational safety and health regulations governing the design and installation of electrical and electronic equipment, including the National Electric Code and Title 8 Industrial Relations, Electrical Safety Orders of the Division of Occupational Safety and Health.

Requires the ability to: Do electrical or electronic design work; make neat and accurate drawings and technical sketches; use state-of-the-art technology, i.e., CADD, personal computers, stand-alone interactive systems and various technical aids; make electrical calculations; inspect electrical installations; specify necessary equipment and materials; accurately interpret drawings, circuit diagrams and specifications; read and understand highway plans, drawings and field data which relate to transportation and traffic management-related electrical and electronic systems and installations; establish and maintain friendly and cooperative relations with those contacted during the course of inspections and other work; analyze situations accurately and take effective action; communicate effectively; originate correspondence and prepare effective reports.

Requires the ability to collaborate with multi-disciplinary, technical staff; communicate effectively (both orally and in writing) with multiple audiences; establish and maintain cooperative relationships with individuals and organizations contacted in the course of work; participate in public contact and represent Caltrans; serve in a consulting capacity to other divisions and districts; and respond appropriately to difficult situations.

Must be able to apply sound judgment in problem solving; work productively in a busy and often changing environment; perform multiple tasks simultaneously; maintain a project schedule; accurately and timely follow-up on issues; and effectively interact with many levels of people in a cooperative manner. Must be decisive, take appropriate actions, and complete tasks or projects with a short notice. Requires proficiency with Microsoft (MS) Office programs (including MS Word, MS Excel, MS PowerPoint, MS Outlook, MS Teams), Adobe Acrobat, Cisco WebEx, and using the Internet.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

This position is responsible for making independent action and taking initiative to carry out assigned duties. The incumbent's decisions and actions have a direct impact on the Traffic Operations Program and the Department. Inability to carry out this position's responsibilities could result in: adversely affecting public safety and/or result in tort liability for Caltrans; increased expenses resulting from lost Transportation System productivity; litigation that could delay and/or add substantial cost to essential projects or activities; inability to quantify performance in meeting the Department's strategic goals and safety and mobility commitments; loss of credibility and public confidence in Caltrans as a responsible public agency.

PUBLIC AND INTERNAL CONTACTS

The incumbent must maintain the highest level of professionalism and integrity, exhibit tact and diplomacy, and effectively communicate with all internal/external contacts.

Internal contacts include various Caltrans districts and divisions (including Design, Construction, Maintenance, External Affairs, and Engineering Services). External contacts include the Legislature, Governor's Office, CHP, FHWA, construction industry representatives, local agencies, other states, national experts, academia, the private sector, and the general public.

The incumbent must communicate effectively orally and in writing, by telephone, via email, and by web conferencing. The incumbent is also required to facilitate, participate in, and host meetings.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The incumbent must: quickly adapt behavior and work methods in response to new information/priorities and unexpected obstacles; multi-task; effectively interact with many levels of people in a cooperative manner; be decisive; take appropriate actions; and complete tasks or projects with a short notice. Must be able to maintain focus and intensity, yet remain optimistic.

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and persistent, even under adversity. The incumbent shall act in a fair and ethical manner toward others; value cultural diversity and other individual differences in the workforce; and demonstrate a sense of responsibility and commitment to public services. The incumbent must be able to develop new insights into situations and apply innovative solutions to make organizational improvements; grasp the essence of new information and master new technical and business knowledge, particularly in the area of outreach; and facilitate and maintain a work environment that encourages creative thinking and innovation.

Must have the ability to work with a computer and have manual dexterity. Required to sit for long periods of time using a computer, monitors, phone, and other office equipment. The incumbent must be able to occasionally lift up to 25 pounds without assistance. Bending, stooping, and pulling may be required within the normal course of performing some of the responsibilities associated with this position. May be required to speak in front of large groups.

WORK ENVIRONMENT

This position's headquartered location is Sacramento, CA. While at the base of operation, the incumbent works in a climate-controlled office under natural and artificial lighting. Due to periodic issues with heating and air conditioning, building temperatures may fluctuate. Multi-floor buildings are equipped with elevators and stairs.

The incumbent may be required to travel periodically to other office buildings (federal and state offices, district offices, local agencies, etc.) and indoor/outdoor field locations. While at field locations, the incumbent may be exposed to uneven surfaces, noise, and varying climate conditions. The incumbent may be required to travel within the state and may be required to travel out-of-state for business operations. Possession of a valid driver's license is required to operate a State owned, leased, and/or personal vehicle. The environment is fast-paced, demanding, and busy; and requires considerable flexibility in managing time, priorities and assignments. Vacations may be restricted during peak times.

This position may be eligible for telework. The amount of telework is at the discretion of the Department and based on Caltrans' evolving telework policy. Caltrans supports telework, recognizing that in-person attendance may be required based on operational needs. Employees are expected to be able to report to their worksites with minimum notification if an urgent need arises. The selected candidate will be required to commute to the headquartered location as needed to meet operational needs. Business travel may be required and reimbursement considers an employee's designated headquartered location, primary residence, and may be subject to CalHR regulations or applicable bargaining unit contract provisions. All commute expenses to the headquartered location will be the responsibility of the selected candidate.

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