

POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE Transportation Engineer (Electrical)	OFFICE/BRANCH/SECTION D6/Division of Maintenance and Traffic Operations	
WORKING TITLE TMC Support Engineer	POSITION NUMBER 906-350-3609-	EFFECTIVE DATE

As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. Caltrans is a performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

GENERAL STATEMENT:

Under the general supervision of a Senior Transportation Electrical Engineer, the incumbent will perform the transportation field and office electrical, electronic and related traffic engineering work of average difficulty relating to Traffic Operations System (TOS) development. Incumbent will assist with planning and coordinating the design, development and operations of the Traffic Management Center (TMC) and TOS. Incumbent will act as engineering support in all aspects of the use of Intelligent Transportation Systems (ITS) elements. The ITS duties will include but are not limited to the following Software, Hardware, Plan Review and field related duties as listed below. Department Of Justice clearance is required for this position.

TYPICAL DUTIES:

Percentage		Job Description
Essential (E)/Marginal (M) ¹		
35%	E	ELECTRICAL ENGINEERING: Design and maintain complex fiber optic and communication network systems. Work with various computer operating systems (O/S's) and associated software tools to perform daily troubleshooting tasks. Analyze field hardware systems and make real-time decisions in order to maintain 24/7 mission critical operations. Prepare/assist in the preparation of design plans, specifications and estimates (PS&E) using standard drafting and computer aided design techniques for traffic TOS's and other electrical and electronic systems. Perform various project lead functions as necessary and direct other Caltrans personnel, contractors and/or consultants as needed. Provide technical support to TMC and Signal Operations staff on an as needed basis, including being scheduled to be available 24/7 for technical support.
25%	E	SOFTWARE DEVELOPMENT: Consult and develop strategies with operations engineers on the development, testing, and implementation of required new real time traffic control and incident detection software systems to facilitate TMC needs. Design and implement software tools as necessary to simplify daily tasks.
25%	E	HARDWARE DEVELOPMENT: Review and recommend the selection of electrical and electronic equipment used in the plans and specifications for systems such as Ramp Metering (RM), Closed Circuit TV (CCTV), Changeable Message Signs (CMS's), Highway Advisory Radios (HAR's), weather stations (RWIS), fiber optics (F/O), computer and communication networks. Duties also include field surveillance and adjustment of operating real time traffic management systems.
10%	M	FIELD REVIEW: Make field investigations to determine proper location of TOS field elements. Coordinate with the districts Electrical Design, Electrical Construction, and Electrical Maintenance divisions on all TOS elements.
5%	M	FUTURE DEVELOPMENT: Research and initiate Traffic System Management (TSM) improvement projects; prepare technical reports. Work with Traffic Management staff to further improve the processes of the TMC. Sit on various local and statewide committees and take an active role to further advance the TMC's mission.

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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, except for occasionally as a lead person on projects.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Incumbent must know fundamentals of electrical engineering; basic departmental procedures as related to design, construction, and maintenance of traffic ITS elements; computer applications such as MS Word, Excel, and Access; and ability to learn new applications. Incumbent is expected to have some knowledge of departmental operations and their interrelationship to the project development process. Incumbent must be able to communicate clearly and concisely, prepare correspondence and reports, and communicate effectively with other Department functional units, as well as, local agencies, contractors, and consultants. Incumbent must be able to work independently to analyze situations accurately and take effective action. Incumbent must be open to change and new information; adapting their work methods in response to changing conditions or unexpected issues, and adjust quickly to new situations warranting attention and resolution. Incumbent must have desire to research new technology in the field of ITS.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The Electrical Engineer uses field data to solve traffic management problems; researches and develops new surveillance and control methods, evaluates data for new projects. Engineer will also participate and guide the development and use of sophisticated CCTV surveillance and control equipment; must be capable of analyzing and evaluating the functional CCTV requirements for traffic management within the TMC, along with other districts and agencies. In addition, the incumbent must exercise sound judgment in the review, evaluation and critique of consultant prepared designs, contractor installed or modified equipment, and vendor supplied prototypes. The incumbent may research new equipment and determine possible engineering applications.

PUBLIC AND INTERNAL CONTACTS

Incumbent will have contact with other Caltrans engineers, engineers representing local agencies and utility companies, and occasionally the general public.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Incumbent must be prepared to meet deadlines for plan (PS&E) submittals and generally complete projects and assignments on time. Must work for extended periods at a Personal Computer or CADD keyboard and monitor. The incumbent must also work for extended periods in the field under various seasonal conditions. Incumbent must also be prepared to assist in the TMC with directing emergency responses to traffic problems when required.

WORK ENVIRONMENT

Incumbent will be working both in individual and group settings, indoors in a temperature controlled building under artificial light a majority of the time, but should be prepared to work occasional extended periods outdoors to conduct field surveillance and monitor traffic problems. This position requires that the incumbent operate a vehicle and move quickly to respond to situations where assessment of existing TOS field elements is necessary.

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

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

SUPERVISOR (Print)

SUPERVISOR (Signature)

DATE
