

**POSITION DUTY STATEMENT**

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE	OFFICE/BRANCH/SECTION	
Transportation Engineer Electrical, (Range A, B, C and D)	District 07/Operations	
WORKING TITLE	POSITION NUMBER	EFFECTIVE DATE
Corridor Ramp Meter Engineer	XXX-XXX-XXX-XXX	

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 supervision of a Senior Transportation Engineer, CT, the incumbent is responsible in evaluating and monitoring traffic conditions within the pilot corridor and ramps, work with and further develop the Advanced Management Systems (ATMS) in the Transportation Management Center (TMC), pertaining to the ramp metering systems including the System-Wide Adaptive Ramp Metering (SWARM) system. Investigate inquiries from various customers, collect traffic data, conduct traffic operational analysis and prepares reports for the corridor.

Valid California driver's license is desirable.

**TYPICAL DUTIES:**

Percentage		Job Description
Essential (E)/Marginal (M) <sup>1</sup>		
30%	E	Evaluate and monitor traffic conditions on the freeway mainline within the pilot corridor and ramps, adjust ramp metering rates appropriately in response to changing traffic conditions and coordinate ramp metering operations with conventional highway or local streets and the intersecting signal systems.
20%	E	Work with and further develop the Advanced Transportation Management Systems (ATMS) in the Transportation Management Center (TMC), pertaining to the ramp metering systems, including the System-Wide Adaptive Ramp Metering (SWARM) systems.
20%	E	Investigate inquiries from various customers including the public, local agencies, management, other Caltrans functional staff, and others, pertaining to ramp metering systems operations within the corridor.
10%	E	Collect traffic data, vehicle and pedestrian volume counts, occupancy counts, turning movements, ramp queue lengths, traffic flow, and other pertinent data needed to perform traffic operational analysis.
10%	E	Assist in the development and keeping current the Ramp Meter Development Plan and/or Ramp Metering Master Plan.
10%	E	Conduct field investigations as needed.

<sup>1</sup>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**

None. Range D may be required to work in lead capacity over engineers and other staff.

**KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS**

Basic knowledge of the fundamentals of traffic engineering principles.

Knowledge of electrical and electronic theory as applied to traffic signals and safety lighting, freeway lighting, sign lighting, tunnel lighting, ramp metering, flashing beacons, extinguishable message signs (EMS), vehicular detection, and count stations. Knowledge of the various codes, safety orders, standard regulations, the material and construction codes

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for the installation of highway lighting and traffic controls equipment. Knowledge of ramp meter operations along with associated central and field control equipment and supporting electronic systems and applications. Knowledge of vehicle detection technology used in the both arterial and freeway applications. Knowledge of systems and applications used to monitor and analyze transportation data.

### Abilities

- Make neat and accurate electrical computations and engineering notes and to prepare effective reports.
- 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 in the course of the work, and to communicate effectively.
- Travel to and work at construction sites throughout California.
- Use state-of-the-art hardware and software used to aid troubleshooting.
- Install, configure and troubleshoot ITS equipment both at the central system level and the field level.
- Analyze traffic data and conditions and exercise sound judgment in making decisions affecting the operation of highway electrical and electronic systems.

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### RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Has significant responsibility to obtain, plot, chart, analyze and evaluate traffic data. Engineering evaluations and judgments may affect Department programs, projects and credibility. Errors in judgments could result in adverse impacts to highway traffic performance including increased delay, congestion, and potential for tort liability.

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### PUBLIC AND INTERNAL CONTACTS

Has frequent contact by telephone and in person with Caltrans' office and field personnel. Has some contact with Caltrans' Headquarters and others State agencies, local agencies, private developers and engineers, and the public. May occasionally represent the Department in meetings with other agencies and the public regarding issue relating to Ramp metering issues.

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### PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Physical requirements include the ability to travel to work sites away from the office, to move around on uneven surfaces in rugged areas that are near freeways and highways. May be required to stand or sit for long periods of time using a keyboard and video display terminal. Required to physically operate a motorized vehicle and drive for extended periods of time to field locations.

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. Must have the ability to multi-task, adapt to changes in priorities, and complete tasks or projects on time. 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. Behave in a fair and ethical manner toward others and demonstrates a sense of responsibility and commitment to public service.

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### WORK ENVIRONMENT

While at their base of operation, employees will work in a climate-controlled office under artificial light. Employees are required to perform field duties which may involve long driving and frequent stops required to monitor the operation of ramp meters. Field work environment might be subject to extreme heat or cold, noise and dust, humidity and dryness. In addition, employees may have to perform field duties in the dark using artificial lighting.

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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