

POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE Senior Transportation Engineer, Caltrans	OFFICE/BRANCH/SECTION 56/Maint./Concrete Pavements & Pavement Foundations	
WORKING TITLE Senior Pavement Engineer (Specialist)	POSITION NUMBER 913-601-3161-	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 direction of the Office Chief, who is a Supervising Transportation Engineer, the Senior Transportation Engineer will oversee, analyze, provide and develop standard plans, specifications, special provisions; design methodologies, software, guidance, and other tools related to the engineering, construction and preservation of pavements. The incumbent is responsible for performing engineering analysis and review of pavement issues, in order to provide recommendations and direction to the Office Chief, State Pavement Engineer, and other functional units in the Division, Department Headquarters, Regions/Districts and external partners on the pavement standards contained in Department manuals, specifications, plans and supporting documents. The Senior Transportation Engineer partners with industry, academia, local agencies, and national/international organizations, on pavement engineering and preservation issues. The incumbent will perform, coordinate, and/or monitor technical studies and investigations, prepare and review reports on complex problems/issues relating to pavements, oversee teams, prepare work plans and monitor progress to assure timely delivery of office projects, products and other assignments.

TYPICAL DUTIES:

Percentage Essential (E)/Marginal (M) ¹	Job Description
30% E	Provides and/or oversees the development and updating of statewide pavement engineering technical standards, methodologies and procedures, for inclusion in the Highway Design Manual (HDM), Maintenance Technical Advisory Guide (MTAG), specifications, plans, software and other engineering guides and tools. Keeps in alignment the "state of the practice" in these areas, and incorporates updates of specialized training on pavement engineering, construction and preservation.
20% E	Performs and oversees special studies and investigations for pavement performance. Serves as the lead investigator for pavements studies, and develops the evaluation plan for pavement test sections and pilot projects. Identifies the pavement condition and failure modes. Evaluates and prepares legislative analysis for pavement issues; attends technical meetings and conferences held Interstate and Intrastate; and prepares technical papers for presentation and publication.
15% E	Serves as a project manager and team leader; prepares and maintains work plans for assigned projects and products in the Pavement Issues Database; tracks and manages progress to assure timely delivery of projects, products and tasks. Coordinates arrangement of meetings, collects and reports status of projects on a regular basis.
15% E	Serves as Chairperson for task groups and/or sub-task groups of pavement committees such as Rock Products; which include the Pavement Program, other Department Headquarters functional units, representatives from Districts and local agencies, and representatives from the construction and material supply industry, to coordinate the development and content of statewide specifications, plans and test methods. Meets and coordinates with industry to identify areas of improvement and assures that changes to pavement engineering, construction and testing standards, policies and procedures, are practical and cost effective.
10% E	Promotes uniformity in the implementation of non-standard, standard and amended specification, policies and procedures, for pavement issues. Performs engineering analyses and reviews to assure conformance to established pavement policies and procedures as detailed in the Department manuals, bulletins, directives specifications, plans and guides. Communicates the best practices to other functional units in the Department Headquarters, Regions/Districts, industry, local agencies, national/international organizations, and other stakeholders interested in pavement

POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

5%	M	issues. Assists Pavement Program Managers and Pavement Rehabilitation program advisors in responding to inquiries on pavement standards and their application. Responds to inquiries on pavement problems and issues affecting the Department relating to pavement engineering, construction and preservation. Provides training courses through the Internet, at job sites, in classroom settings or Web-Based Seminars.
5%	M	Oversees or provides the maintenance of pavement engineering software. Provides assistance and serves as an advisor in the area of truck size and weights affecting pavement design and performance.

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

No direct supervision responsibilities. Serves as a coordinator, lead person and/or project manager for pavement related issues, studies, and pavement related projects with other units and specialists in the Division, other offices and Divisions in the Department Headquarters, Regions/Districts/service centers, external agencies, industry representatives, and the general public as determined by the Office Chief.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

The incumbent must have knowledge of the Caltrans organization and Departmental policies, pavement policies, procedures, standards, and other factors that need to be considered in the design, construction, maintenance and rehabilitation of the pavement. This position requires knowledge and experience with Caltrans project development procedures both for Capital Outlay Support and Maintenance projects, in addition to engineering experience related to Design, Construction and Maintenance operations, with a particular emphasis on pavements. The incumbent must have knowledge of organizational relationships, both within and outside of Caltrans that pertain to the Design, Construction, Operation, Maintenance and evaluation of performance of the pavement structure. The employee is required to know the legal truck weights and sizes, and possess methods of data gathering and analysis to determine the impact of truck loading and volume on costs to the State highway system. Incumbent must have knowledge of climate and how it effects pavement; the basic principles of physics, chemistry and mathematics as applied to civil engineering; stress analysis; mechanics; strength of materials; properties and uses of engineering construction materials. The incumbent is required to know the methods and equipment of engineering construction, and engineering economics. The incumbent must have knowledge of the basic principles of engineering economics, such as life-cycle cost analysis and benefit/cost analysis, as applied to pavement type selection, planning, preservation and management.

The incumbent must have the ability to, based on engineering experience and expertise, act independently and exercise good judgment on matters relating to the planning and design of pavement structure for transportation facilities; effectively communicate and coordinate both orally and in written form with management and employees of the Pavement Program, Department Headquarters, Districts, industry, and other personnel outside the organization. The employee must use engineering software to analyze pavements and their performance; assimilate technical and procedural input from various sources on a given subject and evaluate that input; develop alternative courses of action; make objective recommendations and follow-up with implementation through written and oral communications. The incumbent must be able to comprehend and analyze specification requirements, survey procedures and test methods as they relate to pavement engineering, preservation and management. The incumbent must be capable of analyzing survey/test results and understand the significance and application of said methods; establish and maintain friendly and cooperative relations with those contacted during the course of work and to communicate effectively is also necessary. The incumbent must have the ability to travel to meetings and field sites throughout California and the nation.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Based on engineering experience and expertise, this position is responsible for providing accurate and thorough guidance on pavement engineering, preservation, management standards, policies and procedures. Before decisions are made and actions are taken to implement new products, materials and/or procedures, historical and research data is gathered from all pertinent functional areas in the Division of Maintenance, Department Headquarters, Districts, as well as from the Federal Highway Administration (FHWA), industry and other concerned local, State, and Federal agencies. Caltrans' input is especially pertinent from the areas of engineering, materials testing, research, construction, operations, preservation and management. The consequences of not considering all pertinent factors and input in decisions and actions taken could result in significant economic loss to the State, inconvenience and economic loss to highway users,

POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

and loss of credibility with public agencies and the general public.

PUBLIC AND INTERNAL CONTACTS

Incumbent must work well and communicate with other personnel in the Division of Maintenance, other Department Headquarters functional units, Districts, other state agencies, FHWA, and other Federal Agencies, local Agencies, representatives of industry, academia, consultants, and the general public, to provide the necessary analysis and recommendations on pavement structure for transportation projects.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The incumbent may be required to sit for long periods of time at their desk using a keyboard and video display terminal. Manual dexterity and sustained periods of mental activity are needed for report reviewing and writing, problem solving, analysis and reasoning. The incumbent may also be required to travel via airplanes, drive a rental car, van and/or bus; stay overnight in motel/hotel accommodations. Employee may occasionally be required to move materials weighing up to fifty (50) lbs, move large and/or cumbersome plans and diagrams from one office location to another. The incumbent will need to establish and maintain friendly and cooperative working relationships with those contacted during the course of work, and communicate effectively by recognizing emotionally charged issues or problems, acknowledging the various responses, responding appropriately and professionally to difficult situations.

WORK ENVIRONMENT

While at base of operation, the incumbent will work in a climate-controlled office under artificial lighting. However, due to periodic problems with the heating and air conditioning, the building temperature may fluctuate. Occasionally, travel will be required for meetings, construction projects and material production plants. The incumbent will also be required to occasionally work outdoors exposed to dirt, dust, noise, uneven ground surfaces, allergens in the air and hot and/or cold temperature extremes. The incumbent must possess a valid certificate of registration as a civil engineer.

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
