

POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION 56/Maint. Concrete Pavements & Pavement Foundations	
WORKING TITLE Pavement Engineer	POSITION NUMBER 913-601-3135-918	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 a Senior Transportation Engineer or the Office Chief, a Supervising Transportation Engineer, the incumbent will assist Senior Transportation Engineers and/or Office Chief in performing pavement related design and analysis, develop recommendations regarding pavement engineering, construction, and preservation statewide, perform technical studies, review pavement designs and strategies, and prepare and review reports on complex problems/issues relating to pavements. Incumbent will also develop or evaluate pavement related plans, specifications, costs, software or other tools. Incumbent partners with transportation industry, academia, local agencies, and national/international organizations on pavement engineering and preservation issues.

TYPICAL DUTIES:

Percentage Essential (E)/Marginal (M) ¹	Job Description
35% E	Develops and updates Statewide pavement engineering and preservation technical standards, procedures, practices for inclusion in the Highway Design Manual (HDM), Maintenance Technical Advisory Guide (MTAG), and other pavement products. Develops and maintains specifications, plans, and pavement engineering software. Assists in the development and update of specialized training on pavement engineering, construction, and preservation.
15% E	Conducts analysis of pavement engineering, preservation, management, and performance to assure conformance with established pavement policies and procedures as detailed in the Department manuals, bulletins, directives specifications, plans, guides, and other tools for pavements.
15% E	Conducts special pavement studies, investigations, and cost analysis related to pavement engineering, preservation, and management. Assist and advises on issues related to truck size and weights affecting pavement design and performance.
10% E	Serves on task groups and/or sub-task groups of pavement committees; which include membership from the Pavement Management 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. May serve as chairperson of sub-task groups.
10% E	Prepares written correspondence and issue papers. Attends and participates in technical meetings and conferences on behalf of the Office and Division. Promotes uniformity in interpretation and implementation of standards, policies and procedures for pavement engineering, preservation, and management by responding on a daily basis to inquiries and information.
5% M	Communicates the policies, standards, and best practices developed or approved by the Pavement Management Program to, and consults with, with other functional units in the Corporate Headquarters, Regions/Districts, transportation industry, local agencies, national/international organizations, and other stakeholders interested in pavement issues. Assists Office Chief and Senior Transportation Engineers in responding to inquiries and providing interpretation of pavement standards and their application.
5% M	Maintains technical files on pavement engineering and preservation. Maintains technical engineering content on pavement web site.
5% M	Evaluates and prepares (with respect to pavement engineering, preservation, and management) recommendations on proposed legislation affecting the Department; prepares routine and technical correspondence; attends, and participates in, technical meetings, and conferences both within and without the State; and, prepares technical papers for presentation and publication.

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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

No direct supervision responsibilities. May serve as a lead person over other Transportation Engineers for specific tasks.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

- Knowledge of Caltrans' organization and Departmental policies; pavement policies (design, maintenance, management, etc.), procedures, standards, and other factors that need to be considered in the engineering, construction, maintenance, and rehabilitation of the pavement.
 - Knowledge and experience with Caltrans project development procedures both for capital outlay and maintenance projects, as well as, engineering experience related to design, construction and maintenance operations with a particular emphasis on pavements.
 - Knowledge of organizational relationships, both within and outside of Caltrans that pertain to the design, construction, operation, maintenance, and evaluation of performance of pavement structures.
 - Knowledge of legal truck weights, size, and methods of data gathering and analysis to determine the impact of truck loading and volume on costs to the State highway system.
 - Knowledge of climate and how it effects pavement.
 - Knowledge of 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; methods and equipment of engineering construction.
 - 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.
 - Ability to based on engineering experience and expertise, act independently and exercise good judgment on matters relating to the planning and engineering of pavement structures for transportation facilities.
 - Ability to effectively communicate and coordinate both orally and in written form with management and employees of the Pavement Management Program, in the Department Headquarters, Districts, transportation industry, and other personnel outside the organization.
 - Ability to write technical reports, and be able to interpret results from technical studies.
 - Ability to assimilate technical and procedural input from various sources on a given subject, evaluate that input, develop alternative courses of action, make objective recommendations and follow-up with implementation through written and oral communications.
 - Ability to use engineering software to analyze pavements and their performance.
 - Ability to comprehend and analyze specification requirements, survey procedures, and test methods, as they relate to pavement engineering, preservation, and management; develop workable, effective specifications; analyze survey/test results and understand the significance and application of said methods.
 - Ability to establish and maintain friendly and cooperative relations with those contacted in the course of daily work.
 - Ability to travel to meetings, and field sites throughout California and the nation.
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RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Decisions to implement new pavement products, materials and/or procedures are based on, historical and research data gathered from all pertinent functional areas in the Pavement Management Program, Department Headquarters, Districts, as well as from the Federal Highway Administration (FHWA), the transportation industry, and other concerned Local, State, and Federal agencies. Caltrans' input is gathered from the functional areas of engineering, materials testing, research, construction, operations, preservation, and management. The consequences of not considering all pertinent factors, data and input in decisions and actions taken could result in significant economic loss to the State, inconvenience and economic loss to highway users, 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 Pavement Management Program, other Department Headquarters functional units, Districts/Regions, other state agencies, FHWA, and other Federal Agencies, Local Agencies, representatives of transportation industry, academia, consultants, and the general public to provide the necessary analysis and recommendations on pavement structural sections for transportation projects.

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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, report writing, problem solving, analysis and reasoning. The incumbent may also be required to: travel via airplanes, cars, vans, and buses; stay overnight in motel/hotel accommodations; drive a motor vehicle. The incumbent may occasionally be required to move materials weighing up to 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 in the course of the work, and communicate effectively by recognizing emotionally charged issues or problems, acknowledging the various responses, and 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. Occasionally, the employee will be required to travel inside and outside the State to meetings, construction projects, material production plants and to observe the effectiveness of pavement design and construction practices. The incumbent will also be required to occasionally work outdoors which may cause exposure to dirt, dust, noise, uneven ground surfaces, allergens in the air and/or hot or cold temperature extremes.

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