

**POSITION DUTY STATEMENT**

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE Senior Transportation Engineer, Caltrans	OFFICE/BRANCH/SECTION Maintenance/Pavement Management & Performance	
WORKING TITLE Senior Pavement Management Engineer	POSITION NUMBER 913-601-3161-918	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 the Office Chief, a Supervising Transportation Engineer, the Senior Transportation Engineer acting in a specialist capacity, will oversee the Automated Pavement Condition Survey (APCS) database and reports for the Department's Pavement Management System called PaveM. The incumbent is responsible to create Jasper reports, Geographic Information System (GIS) maps, Esri Maps and Excel charts from APCS and PaveM data. The PaveM system is run to prioritize existing projects as well as create new projects for the department to consider. The incumbent must be able to create GIS and Esri maps that combine the condition of the pavements with the potential projects to repair distressed pavements. These projects need to be put into Jasper reports that managers and engineers can use to manage the pavements throughout California. The incumbent will also act as the assistant contract manager for the APCS contract, and collect the data from the contractor to load into the PaveM database. The incumbent must be able to take the APCS data and present it for use in the annual State of the Pavement report. The incumbent must be able to manage the APCS contract, write and manage Task Orders, and process invoices and contract documents through the EFIS financial system for timely payment of the contractor. The incumbent will perform, coordinate, and/or monitor technical studies and 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) <sup>1</sup>	Job Description
40% E	Creates and produces excel reports, Jasper reports, GIS maps, and Esri Maps for District management, District reviewers, and the State Pavement Engineer. Maps will display data that is helpful to the selection of the most optimized pavement rehabilitation projects based on PaveM information produced by other senior engineers in the office. Produces GIS Maps for each District from APCS data that is provided on a monthly basis. Works with District Maintenance Engineers and Pavement Program Engineers to develop reports that are helpful to District maintenance engineers as well as the State Pavement Engineer. Creates Jasper reports that display information helpful to the management and selection of projects for pavement repair. Serves as a project manager and team leader for the training of Districts so that they may utilize the PaveM software. May also serve as lead worker on assignments that may involve more than one person. Using quality principles and tools, incumbent will implement and maintain continuous quality improvement processes for all of the specific duties and responsibilities under their management. Prepares and maintains work plans for assigned projects and products. 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.
30% E	Manages the APCS contract and the data that is created and produced from it. Creates District GIS maps of the APCS data along with the PaveM data. Works as the Assistant Contract Manager for the APCS Contract. Receives the condition data from the consultant to load into the PaveM database. Serves as the Assistant Contract Manager of the maintenance and license contract for PaveM. Receives invoices and processes them through the EFIS financial system.
10% E	Serves as Chairperson for task groups and/or sub-task groups of pavement management committees; which includes membership from the Pavement Program, other Department Headquarters functional units, representatives from Districts and local agencies, and representatives from the Division of Design and Division of Construction. Serves on National committees when possible for asset management purposes.

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5%	E	Liaison with the Divisions of Design, Traffic Operations, Environmental Services, and Construction, at the Headquarters level, on technical issues of mutual value regarding engineering, construction, and pavement condition collection standards, policies, and procedures.
5%	M	Performs analysis on complex problems and issues affecting the Department relating to pavement engineering, construction, and preservation. Provides technical engineering analysis and recommendations on pavement condition related issues. Works to develop and update models that represent pavement performance.
5%	M	Oversees or provides the maintenance of pavement engineering software. Serves as the Information Technology (IT) liaison so that the computer systems are maintained and running properly on the Caltrans' servers.
5%	M	Evaluates and prepares (with respect to pavement engineering, construction, and preservation) recommendations on proposed legislation affecting the Department; prepares routine and technical correspondence; attends and participates in task groups, technical meetings, and conferences both intrastate and interstate; and, prepares technical papers for presentation and publication. Performs, organizes, and/or oversees special studies and investigations for pavement performance. Serves as lead investigator for studies and investigations. Determines and plans the requirements for testing and analysis in order to complete the investigation and study. Coordinates the work of other units involved in testing and analysis work.

<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.

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### SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

No direct supervision responsibilities. Acting in a specialist capacity, incumbent serves as a lead person and/or project manager for pavement data to keep PaveM up to date. Incumbent serves as coordinator and/or project manager for pavement related projects/products with the other units and specialists in the Division, other offices and Divisions in the Department Headquarters, Regions/Districts/Service Centers, external agencies, transportation industry representatives, and the general public.

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### 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 pavement; computer programming and database management; pavement management techniques and how to evaluate a pavement's distresses such that a proper repair strategy can be applied; 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; organizational relationships, both within and outside of Caltrans that pertain to the design, construction, operation, maintenance, and pavement management of California highways; basic principles of physics, chemistry and mathematics as applied to civil engineering; stress analysis, mechanics, strength, properties and uses of engineering construction materials; methods and equipment of engineering construction.

Ability to: write SQL procedures and Groovy scripts; use software including Jasper, GIS, Esri and Excel; 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; effectively communicate and coordinate both orally and in written form with management and employees of the Pavement Management unit, Department Headquarters, Districts, transportation industry, and other personnel outside the organization; sort and filter important information from large data files for the development of annual Caltrans reports; write technical reports and be able to interpret results from technical studies; assimilate technical and procedural input from various sources on a given subject, to evaluate that input, to develop alternative courses of action, to make objective recommendations and to follow-up with implementation through written and oral communications; use engineering software to analyze pavement performance; comprehend and analyze specification requirements, survey procedures, and test methods, as they relate to pavement engineering, preservation, and management, to develop workable, effective specifications, analyze survey/test results and understand the significance and application of said test methods; establish and maintain friendly and cooperative relations with those contacted in the course of the work, and to communicate effectively; travel to meetings and field sites, throughout California and the nation.

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## 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), the transportation 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, and loss of credibility with public agencies and the general public.

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## PUBLIC AND INTERNAL CONTACTS

Incumbent must work well, and communicate with other personnel in the Division of Maintenance, other Department Headquarters functional units, Districts/Regions, other State agencies, FHWA, and other Federal Agencies, local agencies, representatives of the 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 and writing; problem solving, analysis and reasoning. The incumbent may also be required to travel via airplanes, operate rental or State vehicles and stay overnight in motel/hotel accommodations. Incumbent may occasionally be required to move materials weighing up to fifty (50) lbs, and 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. The incumbent must communicate effectively by recognizing emotionally charged issues or problems, acknowledging the various responses, and responding appropriately and professionally to difficult situations. The incumbent must possess and maintain a valid certificate of registration as a civil engineer issued by the California State Board of Registration for Professional Engineers.

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## 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 intrastate and interstate to attend meetings, construction projects, and material production plants. 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.)

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EMPLOYEE (Print)

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EMPLOYEE (Signature)

DATE

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

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SUPERVISOR (Print)

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SUPERVISOR (Signature)

DATE

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