

POSITION DUTY STATEMENT

PM-0924 (REV 9/2013)

CLASSIFICATION TITLE Transportation Engineer, Civil	OFFICE/BRANCH/SECTION OHSIP/HPMS Branch	
WORKING TITLE Transportation Engineer, Civil	POSITION NUMBER 913-155-3135-	EFFECTIVE DATE

As a valued member of the Caltrans team, you make it possible for the Department to improve the mobility across California by being innovative and flexible; reporting to work as scheduled; working cooperatively with team members and others; and treating others fairly, honestly and with respect. Your efforts are important to each member of the team as well as those we serve.

GENERAL STATEMENT:

The Transportation Engineer, Civil, under the direction of a Senior Transportation Engineer, in the Highway Performance Monitoring System (HPMS) Branch within the Office of Highway Systems Information and Performance, is responsible for collecting, analyzing, validating, and reporting HPMS data to the Federal Highway Administration (FHWA).

TYPICAL DUTIES:

Percentage	Job Description
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Essential (E)/Marginal (M)¹

45% E

Use computer-based processes to compile, edit, and enter engineering data into the HPMS database made available by FHWA.

- Process all updated traffic data for the non-state systems (i.e., local roads), both with electronic data upload and manual entries, where needed. Data includes Annual Average Daily Traffic (AADT), K-factor, D-factor, percent commercial vehicles by FHWA class, percent green time and other parameters used to compute capacity, curves, grades, International Roughness Index, fatigue, and distress data.
- Check and compile statistical and engineering reports involving traffic and roadway data for the California Public Road Data (PRD). These reports include miles, lane-miles and vehicle miles traveled (VMT) by county, urban area, MPO region, etc. Assemble the PRD to create a PDF document and for printing hard copies.
- Process all updated pavement data for the non-state systems, both with electronic data upload and manual entries, where needed. Pavement data includes international roughness index (IRI), rutting, faulting, cracking and other parameters used to evaluate pavement condition. Perform engineering computations from traffic and pavement dataset for preparation of data upload and be able to interpret results.
- Create and maintain an accurate and reliable linear referencing system for the HPMS.
- Use Google maps, CT Earth, field reviews or other methods to obtain current geometric data on non-state systems. Updates HPMS data for uploading; fix any errors or manually enter the updated information.

25% E

Work with the cities, counties, Metropolitan Planning Organizations (MPOs), regional transportation planning agencies (RTPAs), and sometimes with federal agencies to collect roadway inventory, traffic, forecast traffic and pavement data.

- Collect inventory data from local or regional agencies in order to check the HPMS data to ensure the most comprehensive accounting of public streets and roads. Compute the total mileage and lane-miles for any given agency or region, as well as statewide.
- Collect traffic data from local or regional agencies to input into the HPMS. In some regions, supplement the collected data with contracted traffic counts.
- Collect pavement data from local or regional agencies to input into the HPMS. In some regions, supplement the collected data with contracted pavement measurements.
- Collect the forecasted (typically 20 year) traffic data from local or regional agencies to input into

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- the HPMS.
- Maintain a strong reputation with the local agencies and partners, and demonstrate to them the substantial benefit by maintaining good quality data.
- 15% E Check data accuracy and evaluate data quality using federal software and other querying techniques. Make corrections to ensure that proper data is reported. Some methods include:
- Run queries to check data for errors, inconsistencies or unusual conditions.
 - Troubleshoot data errors involving invalid codes or conflicting information (cross edits).
- 10% M Prepare statistical and engineering reports involving traffic and roadway data for various federal, state and local agencies as well as research institutions. Prepare written technical reports, memorandums and other correspondence to various State, federal, and local agencies describing the assumptions, results, and conclusions from gathered data.
- Create reports with Excel or Access using select criteria when applicable. Report miles, lane-miles and vehicle miles traveled (VMT) by county, urban area, etc.
- 5% M Makes presentations to managers, stakeholders, and public regarding the branch activities and results. Travel to meetings, conferences, or training may require the operation of an automobile on public roadways.

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

This is not a supervisory position but the incumbent may be required to serve in a lead capacity role.

KNOWLEDGE, ABILITIES AND ANALYTICAL REQUIREMENTS

Knowledge and experience in the following technical areas is highly desirable:

- Highway capacity analysis, travel demand forecasting, AADT, K factor, D factor, VMT.
- Highway system elements, functional classifications, state post mile system.
- Highway design, alignment geometry, cross sections, access control.
- Pavement surface types, IRI, rutting, faulting, cracking.

In addition, the incumbent must have:

- Demonstrated capability and experience to gather, compile, analyze, and interpret data, prepare concise technical reports and express ideas effectively, both orally and in writing.
 - Demonstrated ability to conduct, administer, plan, and manage consultant contracts.
 - Demonstrated ability to maintain cooperative relationships with individuals in the districts as well as in the industry and academia, nationally and internationally.
 - Demonstrated ability, or preferably have experience, in using computer software such as ArcGIS, Excel, Access, Oracle, Photolog, Google Earth, Civil 3D and Microstation in collecting, compiling, organizing and analyzing data.
 - Demonstrated capability and experience to read and interpret project plans and as-built drawings in order to work with highway inventory staff.
 - Familiar with Federal and State regulations and with the Department's mission, vision, goals, programs, and policies that apply to the performance and feasibility of departmental transportation system information.
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RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

This position is responsible for: identification and coordination of the needs of varied stakeholders in the development of the annual HPMS submittal to FHWA; effective guidance and timely completion of technical reports; and serving as a department subject matter expert to answer questions and develop reports and recommendations concerning highway information. Wrong decisions will directly lead to ineffective, uncoordinated, or unproductive execution of data from State

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and local roads. Programmatic impacts of wrong decisions can mean the loss of resources, funding support, federal reimbursement, and legislative support.

PUBLIC AND INTERNAL CONTACTS

The incumbent has frequent contact with a number of Program and Departmental managers, staff, academic personnel, consultants, and other public agency and industry representatives. Maintaining a professional and calm attitude while responding promptly to requests from our internal and external contacts is vital to the success of this Office.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Incumbent may be required to sit and engage in focused mental activity for long periods of time using a telephone or a computer, reading reports and other technical documents, or performing technical calculations and compositions. It is important that the incumbent work with others in a cooperative manner. Incumbent should be able to deal effectively with pressure, maintain focus, and intensity yet remain optimistic and persistent, even under adversity. Incumbent must be open to change and new information; adapt behavior and work methods in response to new information, changing conditions, or unexpected obstacles.

Incumbent must have ability to create and sustain an organizational culture, which encourages others to provide quality of service essential to high performance; be open to change and new information; anticipate change and be proactive to address it; and have strong communications and listening skills in order to identify and communicate customer needs and expectations.

Incumbent must behave in a fair and ethical manner toward others and demonstrate a sense of responsibility and commitment to public service. Incumbent must value cultural diversity and other individual differences in the workforce.

Incumbent must have the ability to multi-task, adapt to changes in priorities, and complete tasks or projects with short notice, and meet strict deadlines at times. Incumbent must grasp the essence of new information and master new technical and business knowledge that will meet the directives of the Division. Incumbent should understand new and long-range plans and be able to determine how best to position the Division to achieve a competitive advantage in transportation system information.

WORK ENVIRONMENT

Must possess a valid California driver's license with a good driving record to drive a personal or State vehicle.

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)

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SUPERVISOR (Signature)

DATE