

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION DES/SES/ODTS/Structure Hydraulics and Hydrology	
WORKING TITLE Transportation engineer (Civil)	POSITION NUMBER 559-220-3135-xxx	REVISION DATE 03/18/2025

As a valued member of the Caltrans team, you make it possible to improve lives and communities through transportation.

**GENERAL STATEMENT:**

Under the direction of a Senior Bridge Engineer (Supervisor) of the Structure Hydraulics and Hydrology Branch, Office of Design and Technical Services, within Structures and Engineering Services, the Transportation Engineer (TE) (Civil), will conduct hydraulic studies and prepare written reports, models, maps, charts and graphs for rivers, canals and floodways where Caltrans or local agency infrastructures encroach into waterways. As incumbents progress in experience, they will be assigned more difficult work. May function as a lead person over the activities of various engineering and technical personnel, and perform other work-related duties as assigned. This position will entail travel and/or temporary relocation.

As part of your employment with DES there is a mandatory TE-Civil Professional Development Rotation Program that applies to all permanent full-time TE-Civils hired after January 1, 2017. Temporary relocation more than 50 miles from your permanent unit may be necessary for rotation assignments.

**CORE COMPETENCIES:**

As a Transportation Engineer (Civil), the incumbent is expected to become proficient in the following competencies as described below in order to successfully perform the essential functions of the job, while adhering to and promoting the Department's Mission, Vision, Values, Strategic Imperatives and Goals. Effective development of the identified Core Competencies fosters the advancement of the following Leadership Competencies: Change Commitment, Risk Appetite, Self-Development/Growth, Conflict Management, Relationship Building, Organizational Awareness, Communication, Strategic Perspective, and Results Driven.

- **Creativity and Innovation:** Thinks beyond the confines of traditional models to recognize opportunities, seek creative solutions and take intelligent risks. (Employee Excellence - Innovation)
- **Decision Making:** Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Employee Excellence - Innovation, Integrity, Stewardship)
- **Continuous Professional Development:** Seeks to obtain knowledge and improve performance while supporting others in doing the same. (Employee Excellence - Innovation, Integrity, Stewardship)
- **Problem-solving and Decision-making :** Identifies problems and uses logical analysis to find information, understand causes, and evaluate and select or recommend best possible courses of action. (Employee Excellence - Collaboration, Stewardship)
- **Relationship Building:** The ability to develop and maintain internal and external trust and professional relationships, which includes listening and understanding to build rapport. (Employee Excellence - Collaboration, Integrity, Stewardship)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Employee Excellence - Collaboration, Integrity, Stewardship)
- **Communication:** Expresses oneself clearly in all forms of communication. Gives feedback and is receptive to feedback received. Knows that listening is essential. Keeps others in the Division and other functional units informed as appropriate. (Employee Excellence - Collaboration, Integrity, Stewardship)
- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Employee Excellence - Innovation, Pride, Stewardship)
- **Technical Expertise:** Depth of knowledge and skill in a technical area. (Employee Excellence - Innovation, Integrity, Pride, Stewardship)

**TYPICAL DUTIES:**

Percentage Essential (E)/Marginal (M) <sup>1</sup>	Job Description
45% E	Calculate flood frequencies and design flows. Make hydraulic studies and prepare written reports, including computer models, maps, charts and graphs for rivers, canals and floodways, where Caltrans or local agency infrastructures encroach into waterways. Calculate scour associated with bridge openings and recommend design elements. Evaluate potential tsunami hazard and the effects of future sea level rise. Assist in the design of hydraulic structures bank protection and energy dissipaters.

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20%	E	Compose Structure Hydraulic and Hydrology Reports and Bridge Inspection Reports for waterway crossings. Reports must be ready for signature by a Registered Professional Engineer. Perform site visits as needed. Assists in obtaining site survey data as needed.
10%	E	Collect and maintain published data useful in hydrologic studies, inspect existing facilities damaged by flood, high water flow or wave action, and recommend needed repairs. Review and calculate scour associated with seismic retrofit bridges. Study stream and foundation conditions with particular attention to streambed materials and their transportability.
10%	E	Assist Caltrans emergency response as it relates to hydraulic and hydrologic modeling and studies. Provide construction support for ongoing projects as needed. Assist in the review of consultant-designed projects.
5%	M	Review waterway encroachment permits. Perform other work-related duties as assigned.
5%	E	Assists the Branch Chief to provide resource estimates and develop schedules for projects in the Capital Outlay Support and Non-Capital programs. Communicate with the PLEs and District Project Managers on delivery/ resource issues. Tracks changes in project scope, schedule, and resource requirements using project database tools.
5%	M	Assists the Branch Chief with Task Management activities involving email correspondence using the business group inbox. Responsibilities also include archiving emails and work requests received. Such duties are important to ensure the branch maintains prompt customer service responses. Assists the Branch Chief with the control of documents and records in our quality processes. Assist and participate with the annual DES audit process along with periodic internal office audits. Assist with updates to the office quality management plans. Assists with ADA-compliance of documents.

<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  
This position does not supervise other employees. May act as a lead person on select large projects.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS  
Must know the methods of hydraulic and hydrologic analysis required for various complex stream/structure interfaces, be familiar with existing engineering computer programs used in analysis and knowledge of basic civil engineering surveying methods. A background in Bridge Design is desirable. Must have a good command of English and be able to write technical correspondences. The work requires knowledge of hydraulic analysis and hydrology, expertise in the use of computers, and a working knowledge of mathematics.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR  
The TE (Civil), is responsible for the collection, development, interpretation, and presentation of hydraulic design data for use in the preparation of structure plans, scour countermeasure plans to protect facilities and scour analysis. Poor decisions or incomplete work may result in inadequate designs or scour susceptibility determination.

PUBLIC AND INTERNAL CONTACTS  
Maintains communication with all personnel on his/her projects including the Division of Structures, Districts, other divisions, local agencies and governmental agencies.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS  
Must be physically, mentally, and emotionally able to work in various office and field environments, including around traffic, at heights and above, in and around water. This includes work such as, climbing up and down steep slopes around structures, climbing over fences, carrying inspection and survey equipment, bending over railing measuring stream channel cross sections with a weighted tape and using waders in water less than one meter deep. Good hearing and vision are essential in traffic areas. Must be able to develop and maintain a cooperative work environment through interpersonal communication skills. The incumbent must be safety conscious for him/herself and others at all times.

WORK ENVIRONMENT  
Approximately 90 percent of the incumbent's time will be spent in a typical office environment performing analysis work. Environment will consist of prolonged sitting, artificial lighting, and computer work. Approximately 10 percent of the incumbent's

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time may be spent in the field performing investigations of state owned and local agency owned structures. Travel to and from project sites located statewide may be by automobile or commercial airline. The work environment around these structures includes, but is not limited to, hazards such as traffic and its associated speed, volume and noise, homeless persons and their debris, trip and slip hazards as well as working in and around streams, lakes, canals, and various other waterways. The work also requires the incumbent to work outdoors all seasons of the year under extreme temperature variations and around insects, reptiles and poisonous plants, and light to moderate lifting of survey equipment. While at their base of operation, incumbent will work in a climate-controlled office under artificial lighting. As a statewide organization, DES adjusts to periods of fluctuating workload to successfully deliver projects. Incumbent will be required to travel and perform fieldwork and will be exposed to dirt, uneven surfaces, extreme temperatures, noise, vibration, and odor associated with fieldwork. May work around bulky/heavy materials and equipment used in the vicinity of inspection areas. May also be exposed to the motoring public. DES employees may be given temporary assignments on DES projects throughout the State as workload demands.

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.)

I agree that by providing my electronic signature for this form, I agree to conduct business transactions by electronic means and that my electronic signature is the legal binding equivalent to my handwritten signature. I hereby agree that my electronic signature represents my execution or authentication of this form, and my intent to be bound by it.

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