

# **REQUEST FOR QUALIFICATIONS**

## **Seismic Advisory Board Member**

### **Position Description #7: High Speed Rail System Design**

#### **GENERAL DESCRIPTION**

The Seismic Advisory Board was created as a recommendation of the Governor's Board of Inquiry following the 1989 Loma Prieta Earthquake. The California Department of Transportation (Caltrans) established the Caltrans Seismic Advisory Board (Board) to provide advice on seismic safety policy as it applies to the design of transportation structures in California. The Board consists of a maximum of eight members appointed by the Director of Caltrans (Director) to assure balanced representation among pre-eminent scientists, engineers, researchers and policy experts assembled from both the private and public sector. In 2016 Caltrans agreed to expand the expertise of the Board to review seismic design guidance for the California High Speed Rail Authority (CHSRA). The expertise of the Board shall reflect the full breadth of Caltrans' and CHSRA's responsibilities for the seismic safety of transportation structures and that expertise can be adjusted to meet their needs.

Incumbent shall serve as a subject matter expert to the Board, Caltrans, and CHSRA. Area of expertise shall be in the planning, design and construction of high-speed railway systems in areas of high seismicity. It is also expected the individual will have experience drafting design guidance and policy at the national level.

#### **MAJOR DUTIES & RESPONSIBILITIES**

Major duties and responsibilities include one or more of the following:

- Advise the Caltrans Director, Chief Engineer, State Bridge Engineer, CHSRA CEO, and Director of Engineering on the items described below, as well as other matters upon request.
  - Review of earthquake engineering and seismic design as practiced by Caltrans and CHSRA.
  - Formulate recommendations for improvements in Caltrans and CHSRA earthquake engineering and seismic design practices.
  - Review of seismic policy, hazard definition, and mitigation directives.
  - Review of seismic design guidelines and standards for transportation structures.
  - Review and comment on priorities for the Caltrans and CHSRA seismic research programs.
  - On request, provide the general public with explanations regarding Caltrans and CHSRA seismic safety policies and procedures for maintaining safety and functionality of California's transportation structures.

- Recommend investigations or new initiatives to learn from the performance of transportation structures from major earthquakes worldwide.
- Conduct duties under the Board charter impartially, without restriction or limitation, and in a manner the Board member believes is necessary to fulfill the purpose and goals of the Board.

## **SPECIFIC DUTIES & RESPONSIBILITIES**

Specific duties and responsibilities include one or more of the following:

- Advise Caltrans and CHSRA on
  - high speed rail infrastructure design and performance-based design of rail infrastructure, including elevated structures, long span and complex bridges, retained embankments, ground subsidence, cut slopes and slope stability, and track-structure-interaction in seismic regions
  - vehicle-track-structure-interaction, passenger comfort, rail system safety and reliability
  - design and construction, including performance-based engineering and design of bridges and other rail structures under both Operating Basis Serviceability Earthquakes and safety level Maximum Considered Earthquakes
  - fault crossing design and post-fault rupture mitigation strategies for elevated structures and at-grade crossings
  - new and developing fields of technology, such as instrumentation and early warning systems for high speed rail trains

## **QUALIFICATIONS**

In addition to an advanced degree(s) in engineering and a substantial publication record, the candidate should have at least ten (10) years of experience in one or more of the following:

- Recognized nationally or internationally as an expert in one of more of the following areas: high speed rail infrastructure design, performance-based design of rail infrastructure, including elevated structures, long span and complex bridges, retained embankments, ground subsidence, cut slopes and slope stability, underground tunnels and stations, track-structure-interaction, and vehicle-track-structure-interaction, passenger comfort, rail system safety and reliability in seismic regions.
- Experience in the design of high-speed rail structures for instrumentation and early warning systems.
- Experience in engineering research, practice, and/or teaching and research with significant contributions in the engineering literature. Pioneering of new and developing fields of technology, making major advancements in traditional fields of track and rail system design for high speed rail systems or developing/implementing innovative approaches in emerging fields of engineering.

- Performance-based earthquake engineering and design of high-speed rail structures under Operating Basis Serviceability Earthquakes, as well as safety level Maximum Considered Earthquakes.
- Experience in design-bid-build and design-build delivery of high-speed rail project delivery methods.
- Demonstrated and recognized technical leadership in the seismic design of bridges as demonstrated by leadership positions on technical committees, trade associations or membership in the National Academies.

#### **BOARD MEMBERS MUST:**

- Be eligible for employment in the US.
- Sign the Board Charter provided at the first Board Meeting. A review copy will be provided prior to finalizing appointment.
- Submit a conflict of interest disclosure form that identifies real or perceived conflicts between the candidate and their duties as defined by their position description. That form (Form 700) will be provided as part of the hiring process ([www.fppc.ca.gov](http://www.fppc.ca.gov)).

The Board operates in a manner that seeks consensus among the members. In cases where consensus cannot be reached, the Board may present multiple recommendations with supportive arguments for each position.

#### **TO APPLY:**

Qualified individuals should submit a Statement of Qualifications (SOQ) that includes a letter of interest and Curriculum Vitae (CV) or resume. The letter of interest should highlight career accomplishments and honors that qualify the applicant for a Board position. The letter must disclose any current or past affiliations with Caltrans or the California High Speed Rail Authority that may be perceived as potential conflicts of interest. The CV or resume must include all academic and professional experience, list of publications, and areas of technical expertise. The SOQ must be submitted in pdf format.

Questions about this RFQ and SOQ submissions should be addressed to:

Charles Sikorsky, Ph.D., P.E.  
Institute of Transportation Studies  
[sikorsky@berkeley.edu](mailto:sikorsky@berkeley.edu)

Applicants are encouraged to submit their SOQ by June 15, 2020. Positions will remain open until filled.

This Request for Qualifications was posted on May 4, 2020  
at [www.techtransfer.berkeley.edu/join-our-team](http://www.techtransfer.berkeley.edu/join-our-team)