



## POSITION DUTY STATEMENT

<b>NAME</b>	<b>MCR</b> I
<b>CLASSIFICATION</b> Engineering Geologist	<b>POSITION NUMBER</b> 538-103-3756-004
<b>WORKING TITLE</b> Staff Seismologist	<b>DIVISION/UNIT</b> CGS/Earthquake Engineering
<b>EFFECTIVE DATE</b>	<b>LOCATION</b> Sacramento
<b>BARGAINING UNIT</b> R09	<b>CONFLICT OF INTEREST CATEGORY</b> 3,7

### **DEPARTMENT STATEMENT:**

All employees are responsible for contributing to an inclusive, safe, and secure work environment that values diverse cultures, perspectives, and experiences, and is free from discrimination. You are expected to work cooperatively with team members and others to enable the Department to provide the highest level of service possible. Your efforts to maintain regular attendance and treat others fairly, honestly, and with respect are critical to the success of the Department's mission and vision.

### **GENERAL STATEMENT:**

Under the general direction and supervision of the Senior Engineering Geologist for the Data Products Unit of the California Strong-Motion Instrumentation Program (CSMIP), the incumbent will utilize earthquake strong-motion data to conduct advanced seismological studies in support of CSMIP's operations. In addition to the daily analysis and evaluation of strong-motion data in response to earthquakes, the incumbent will be involved in the development and maintenance of seismological tools and applications to facilitate the collection, processing, and dissemination of strong-motion data from CSMIP's real-time and triggered systems. Duties include, but are not limited to:

#### **A. SPECIFIC ACTIVITIES: ESSENTIAL / MARGINAL FUNCTIONS**

- **ESSENTIAL FUNCTIONS**

- **[25%] Seismological tool Development and Maintenance:**

Assist in planning, organizing, and conducting studies in engineering seismology to develop scientific methods applicable to the CSMIP seismological software. Develop and maintain seismological and data exchange applications to facilitate the processing and dissemination of strong-motion data coming from CSMIP triggered and real-time systems and the California Integrated Seismic Network (CISN) partner seismic networks. Assist in integrating seismological software developed by CSMIP's partners to the Strong-motion Automated Recovery and Analysis (SARA) system in coordination with the CSMIP staff and the software developers. Assist in planning and organizing efforts aimed at the development and modernization of the seismological tools and strong-motion data exchange applications used by the SARA system.

- **[25%] Strong-Motion Data Acquisition and Monitoring:**  
Contribute to new developments of functions to improve CSMIP's Strong-motion data acquisition system which includes the dissemination and archival of the resulting collected data; analyze strong-motion data streams to determine location and magnitude of earthquakes in California. Assist in planning and developing a procedure to compare and evaluate strong-motion data streamed via CSMIP's Earthworm real-time system. Assist in evaluating the performance of CSMIP's real-time system and propose adjustments to seismological parameters in the Earthworm system as needed. Assist in the ongoing efforts by California Earthquake Early Warning systems to improve the rapid detection of earthquakes and the prediction of corresponding ground shaking levels.
- **[20%] Strong-Motion Ground Response Research and Development:**  
Conduct seismological research studies by utilizing ground response strong motion data, seismological and geological information in computer programs to identify factors controlling local variations of earthquake ground shaking. Review and analyze peer-reviewed research publications and technical reports to keep up with latest developments in seismology. Prepare proposals and technical reports of research results for journal publications and give presentations at scientific meetings and workshops.
- **[10%] Preparation and Reviews of Strong-Motion Data Interpretation reports:**  
Prepare and update reports of significant earthquake activity to provide the Department's management and emergency responders with quick summary and visual materials showing the earthquake impact. Assist in the review of the periodic data interpretation and geotechnical reports and prepare evaluation reports for project managers.
- **[10%] Earthquake Response:**  
Participate in CSMIP's earthquake response activities to prepare and disseminate strong-motion data collected from CSMIP's and CISN's seismic stations in a timely manner. The work includes review, comparison, and evaluation of earthquake strong-motion data in accordance with CSMIP's data dissemination policies and procedures.
- **MARGINAL FUNCTIONS**
  - **[5%] Backup Duties:**  
Backup the Senior Engineering Geologist of Data Products unit to review and quality control data products. Participate in outreach activities and presentations of technical information about the engineering geology products and strong-motion data to the engineering and scientific community.
  - **[5%] Administrative:**  
Performs administrative duties including, but not limited to; adheres to Department policies, rules, and procedures; submits administrative requests including leave, overtime, travel, and training in a timely and appropriate manner; accurately reports time in the daily log system; and submits timesheets by the due date.

B. **SUPERVISION RECEIVED**

The Engineering Geologist reports directly to and receives most assignments from the Senior Engineering Geologist; however, direction and assignments may also come from the CSMIP Program Manager.

C. **SUPERVISION EXERCISED**

NONE

D. **ADMINISTRATIVE RESPONSIBILITIES FOR SUPERVISORS AND MANAGERS**

NONE

E. **PERSONAL CONTACTS**

The Engineering Geologist routinely interacts with other CGS and DOC staff, federal, state, and local agencies, academic partners and may include extensive public and professional contact. Contacts may be made via personal interaction, written correspondence, video conference, telephone, and/or email.

F. **ACTIONS AND CONSEQUENCES**

If the job is performed inadequately by the Engineering Geologist, the consequences of error would be significant. It could cause delays in delivering strong-motion and related products such as waveform data, ShakeMaps, ShakeCast. The delay and error caused by inadequate work of Engineering Geologist is more time sensitive in cases that the strong-motion data and ShakeMaps are used for rapid response to earthquakes by the earthquake emergency response teams.

G. **WORKING CONDITIONS/PHYSICAL REQUIREMENTS**

- Travel may be required to other cities to meet on projects with colleagues of the United States Geological Survey and other organizations.
- Travel via private or public transportation (i.e., automobile, airplane, etc.) inside California may be required to attend meetings, on-site reviews, or training.
- Occasional operation of state-owned vehicle to drive long hours to meetings.
- Works in an office environment sitting at a desk during core office hours using a desktop computer, keyboard, mouse, monitor, printers and plotters under artificial lighting for prolonged periods of time.
- Use of multi-line telephone console or a cordless telephone.
- Moving about the office and standing or sitting during in person meetings.
- Bending and stooping to retrieve and replace files and records
- Occasional walking on minimally irregular surfaces at field-sites may be required.
- Work in a high-rise building.

H. **OTHER INFORMATION**

Telework may be available for this position in accordance with the Department of Conservation's Telework Policy and procedures.

I have read and understand the duties listed above and I can perform these duties with or without reasonable accommodation (if you believe reasonable accommodation is necessary, discuss your concerns with your supervisor).

<b>Employee Signature</b>	<b>Employee Printed Name</b>	<b>Date</b>
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I have discussed the duties of this position with and have provided a copy of this duty statement to the employee named above.

<b>Supervisor Signature</b>	<b>Supervisor Printed Name</b>	<b>Date</b>
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