

Per California Code of Regulations, title 2, section 548.5, the following information will be posted to CalHR's Career Executive Assignment Action Proposals website for 30 calendar days when departments propose new CEA concepts or major revisions to existing CEA concepts. Presence of the department-submitted CEA Action Proposal information on CalHR's website does not indicate CalHR support for the proposal.

**A. GENERAL INFORMATION**

1. Date

2/11/2016

2. Department

California Earthquake Authority

3. Organizational Placement (Division/Branch/Office Name)

Executive Office

4. CEA Position Title

Director of Policy, Research and Special Projects

5. Summary of proposed position description and how it relates to the program's mission or purpose. (2-3 sentences)

The California Earthquake Authority (Authority) proposes to allocate the above position to the Career Executive Assignment category. The Director of Policy, Research and Special Projects is responsible for the creation, management and oversight of highly technical multidisciplinary research teams involved in seismic, engineering, economic, actuarial, financial, and social science research and policies. The position will advise and consult with the Chief Executive Officer, members of the executive management team, and the Governing Board on a broad range of research projects related to earthquakes and the related business aspects of catastrophe that have significant policy and fiscal impact to the Authority.

6. Reports to: (Class Title/Level)

Chief Executive Officer ("at will" contract employee)

7. Relationship with Department Director (Select one)

- Member of department's Executive Management Team, and has frequent contact with director on a wide range of department-wide issues.
- Not a member of department's Executive Management Team but has frequent contact with the Executive Management Team on policy issues.

(Explain):

8. Organizational Level (Select one)

- 1st
- 2nd
- 3rd
- 4th
- 5th (mega departments only - 17,001+ allocated positions)

## B. SUMMARY OF REQUEST

### 9. What are the duties and responsibilities of the CEA position? Be specific and provide examples.

The Director of Policy, Research and Special Projects will be responsible for the creation, management and oversight of highly technical multidisciplinary research teams involved in seismic, engineering, economic, actuarial, financial, and social science research and policies. The incumbent will have significant responsibility for the development, implementation, evaluation, and modification of policies and projects as they relate to research designed to accomplish the goals of the Authority's Strategic Plan. The Director will develop and prepare the Authority's overall long-term goals for research including creation of a Research Plan. This requires a sufficient understanding of the Authority's functions to make informed decisions and recommendations, with assistance of the experts within those functions, to prioritize research and allocate resources to the appropriate projects.

The Director of Policy, Research and Special Projects will be responsible for developing, advocating and leading targeted research to enhance the effectiveness of the Authority and its partners in helping Californians understand and manage their earthquake risk. This is carried out by actively supporting research that: advances the earth science and engineering communities' ability to identify and quantify the seismic risk present in California; advances these communities' ability to identify and mitigate vulnerable residential structures; provides scientifically sound, peer reviewed data that is calculated to improve earthquake-loss modeling and the Authority's financial and business decision-making and planning; and provides useful, understandable information for the public on how to prepare, learn about and manage their earthquake risk. The research data provides the basis and catalyst for making policy, program and product initiatives and changes. The position will plan, coordinate, and manage research performed both internally and externally, including monitoring new and existing projects as to content, staffing and timeliness, and for external research, additionally all contractual obligations and payments.

The currently underway "Quantifying the Performance of Retrofit of Cripple Walls and Sill Anchorage in Single-Family, Wood-frame Buildings" is an example of a 42-month \$3.4 million dollar research project which will utilize: numerical modeling for earthquake response analysis of single-family wood-frame buildings; structural and non-structural component testing; and shake table testing to quantify damage differences in representative mitigated and non-mitigated index cripple wall houses which data will then be utilized by loss modelers. The results of this research project will be used to further formulate meaningful earthquake insurance mitigation premium adjustments as well as inform and motivate other stakeholders to take action to mitigate, insure and protect their homes.

Other examples of Authority sponsored research projects are the NGA-West2 project (Next Generation Attenuation) and the UCERF3 project (Uniform California Earthquake Rupture Forecast Version 3). The NGA-West2 research produced Ground Motion Prediction Equations (GMPEs) which calculate the amount of ground shaking at a chosen location given a certain magnitude earthquake and distance of the location from the fault rupture. Combined with the UCERF3 research, which determines where earthquakes will occur, at what frequency and how large they will be (magnitude), these two research pieces are critical components that go in the loss modeling which is used to develop earthquake insurance rates using the best available science. This research also updates the National Seismic Hazard Maps, which are used for the seismic design of buildings having an impact on almost all new building construction in California. UCERF3 was organized by the Southern California Earthquake Center, the U.S. Geological Survey, and the California Geological Survey and involved a multi-disciplinary team of earthquake scientists and engineers. NGA-West2 was a large multi-disciplinary research project organized by the Pacific Earthquake Engineering Research Center (PEER) at UC Berkeley. Together these two research projects provided important new information for improving seismic safety engineering, revising building codes, setting insurance rates, and helping communities prepare for inevitable future earthquakes.

The Director will advise and consult with the Chief Executive Officer, the Authority Governing Board, and the executive management team on a broad range of research projects related to earthquakes and the related business aspects of catastrophe that have significant policy and fiscal impact to the Authority. The Director will serve as a policy advisor collaborating with the Chief Executive Officer, the executive management team and stakeholders to evaluate, develop and implement policies and projects to accomplish the goals of the Authority's Strategic Plan.

The Director will represent the Authority at various external organization meetings nationally. The incumbent may also be a member of various technical advisory committees such as the California Integrated Seismic Network and the Industry Advisory Board for the Pacific Earthquake Engineering Research Center. The incumbent must keep abreast of current research, attend and represent the Authority at various conferences including trade and professional associations of insurance professionals, regulators, academics, engineers and earth scientists. The Director will give presentation to insurers, trade associations, consumer groups, research institutions, private stakeholders, local, state and federal agencies, elected officials, and non-governmental agencies.

**B. SUMMARY OF REQUEST (continued)**

10. How critical is the program's mission or purpose to the department's mission as a whole? Include a description of the degree to which the program is critical to the department's mission.

- Program is directly related to department's primary mission and is critical to achieving the department's goals.
- Program is indirectly related to department's primary mission.
- Program plays a supporting role in achieving department's mission (i.e., budget, personnel, other admin functions).

Description: The 2014-2016 Authority's Strategic Plan mission has three main, critical goals: Educate, Mitigate and Insure. The Director of Policy, Research and Special Projects supports all three of these major goals in the following ways:

Goal 1 Educate: "Help Californians learn about their seismic risks in order to prepare for, survive, and recover from damaging earthquakes." The Strategic Plan lists research as an important way to educate specifying that research "strengthens risk-awareness programs" with the "knowledge gained from Authority support of quality, publicly available research in seismic science and engineering." It also says that research will both "understand and evaluate how individuals perceive risk and translate their risk perceptions to earthquake-preparedness measures" and "promote risk education for Californians that helps them understand their risk based upon their location and type of structure they live in."

Goal 2 Mitigate: "Encourage Californians to take action by strengthening their homes and securing their belongings to reduce their risk of earthquake damage." The Research Director works directly with the Chief Mitigation Officer and Chief Actuary in collaborating on research projects furthering the understanding of what are California's most vulnerable residential structures, what can be done to strengthen them, the loss and damage reduction that occurs with such strengthening/mitigation and how to incentivize Californians to strengthen their homes.

Goal 3 Insure: "Help Californians understand-and quantify and actively manage, using Authority insurance products-their risk of financial loss from damaging earthquakes." A fundamental cornerstone of an earthquake insurance provider's business is being able to quantify the risk it is insuring, both where the risk of loss is greater or smaller, and the amount of possible loss in each location (i.e., how large will the losses be from an event or series of events) and overall. To do this, the Research Department has partnered with the leading earth science and engineering experts in the nation to perform research that has advanced the state of the art in projecting earthquake shaking. The value of this research is recognized worldwide by the loss modeling companies that incorporate this scientific research into their models as well as the reinsurers throughout the world that use it in pricing and providing claims paying capacity to the Authority. This research is also fundamental in determining how much capital the Authority must carry to be a viable organization that can fulfill the fundamental promise that is implicit in an insurance contract, i.e., that the insurer will be able to pay the claim. Earthquake insurance is recognized as a risk where precise quantification of that loss is not possible so the Authority has helped fund the advancement of that science.

**B. SUMMARY OF REQUEST (continued)**

11. Describe what has changed that makes this request necessary. Explain how the change justifies the current request. Be specific and provide examples.

The Authority is a not-for-profit insurance company established by the California legislature in 1995-1996 and is the largest residential earthquake insurer in the country and one of the largest in the world. In addition to the insurance function of financing repair and rebuilding of residential properties should a catastrophic earthquake occur in California, the Authority also educates and financially helps residents strengthen their homes to reduce the impact and cost of earthquake losses. Although not an agency or department of the California government, as a public instrumentality of the state the Authority is governed by a Board composed of five elected public officials: California's Governor, Treasurer, and Insurance Commissioner serve as voting members of this Governing Board, while the Speaker of the Assembly and the President Pro-Tempore of the Senate serve as non-voting members.

Since its inception in 1996, the Authority has grown to be more than 75% of California's residential earthquake insurance market. Over the past decade its capital has grown from \$2 billion to almost \$5 billion, and its claim-paying capacity has increased over 40 percent to more than \$11 billion. The Authority now writes well over \$600 million in premium annually. With some 860,000 policies in force throughout California representing over \$350 billion dollars in exposure, the Authority's ability to accurately model its financial exposure is critical. After approximately 10 years in existence, in 2007, the Authority recognized the need to add scientific expertise. This was accomplished by contracting for the services of engineers and earth scientists with other state agencies in California. Now 9 years later the Authority recognizes the need to have a full-time Director in charge of research because of the fundamental role that research plays in the Authority's ability both to remain financially strong and to learn how to reach out to the public to encourage earthquake preparedness particularly in the face of over a 20 year lull in significant earthquake activity.

Additionally, in August 2011, the California Residential Mitigation Program (CRMP), a joint-exercise-of-powers entity was formed by its members, the Authority and the Governor's Office of Emergency Services (Cal OES). The CRMP was established to carry out mitigation programs to assist California homeowners who wish to seismically retrofit their houses. CRMP's goal is to provide grants and other types of assistance and incentives for these mitigation efforts. The first of these programs, Earthquake Brace + Bolt: Funds To Strengthen Your Foundation, was launched as a pilot project in September 2013.

With the program growth of the Authority in the past decade, the research function has been key to making many of its policy decisions and setting insurance premium rates based on the "best available science." The data collected through the research projects are the basis of making policy decisions and supporting the strategic plan to educate, mitigate and insure. The research function originally reported under the Chief Operations Officer. In November of 2011, the Research and Special Projects function was absorbed by an Attorney III with significant background and experience in earth sciences and insurance who was one of the key policy advisors to the Chief Executive Officer. The Attorney III will be retiring within this calendar year, as such, it is imperative the Authority establish the proposed Director of Policy, Research and Special Projects. The proposed position is at the 2nd organization level and reports directly to the Chief Executive Officer and will be part of the executive management team. The Director will serve as the chief policy-maker within Policy, Research and Special Projects and will have regular involvement in the Authority's policy creation and decision making process. With the growth of the Authority and the significant increase in responsibility, the Authority believes it is time to elevate this position and properly allocation this position by requesting establishment of a Career Executive Assignment position.

## C. ROLE IN POLICY INFLUENCE

12. Provide 3-5 specific examples of policy areas over which the CEA position will be the principle policy maker. Each example should cite a policy that would have an identifiable impact. Include a description of the statewide impact of the assigned program.

The Director is a key member of the executive management team and provides the Chief Executive Officer, the Authority Governing Board, and the executive management team research based input and policy recommendations relative to insurance products, education programs, and mitigation initiatives. Executive management relies on the Director to provide compelling evidentiary support for the Authority in setting statewide earthquake related policies. The Director provides analysis and policy recommendations to the Chief Executive Officer, the executive management team, and the Board with regards to the various factors related to projected earthquake events. This information provides the basis and catalyst for his recommendations for policy, program, and product initiatives and changes. Furthermore, the Director, works with the Chief Actuary who oversees loss cost modeling that is critical to setting rates and assessing loss reserves. Decisions made by the Chief Executive Officer and the Board rely directly on information provided by the incumbent.

Working with contractors, scientists, engineers, and academia, the Director oversees inter-jurisdictional objectives that are used not only for State purposes, but influences and drives national and international policies and strategic activities. To be effective on this broad stage, the Director must keep abreast and be familiar with various federal, state, and local programs, politics, laws, regulations, and requirements. The science and related research overseen by the Director is technical, complex, and topic-specific; the incumbent must understand and apply matters of physical and social science, economics, statistics, law, and research to regulatory, legal, and policy issues at the state and federal level. Further, findings and recommendations developed under the Director's oversight are widely distributed and relied upon by government leaders, academics, scientists, and other catastrophe agencies and entities.

In the area of earth science policy, the Research Director's office headed the Authority's involvement in the Uniform California Earthquake Rupture Forecast 3 (UCERF3) research which was an \$8.7 million project with an initial project duration of 30-month. This was a partnership with the United States Geological Survey (USGS), California Geological Survey (CGS), and the Southern California Earthquake Center (SCEC). The project provided clear benefit to the Authority, its policy holders and partners, by substantially improving the loss modeling required for both rate making and financial analysis. So in addition to being a science policy initiative it was also an important financial one. The Authority is mandated by law to use the "best available science" in formulating its rates and premiums. This project also squarely aligns with the "Insure goal" of the Authority's Strategic Plan. Not only does this research have a statewide impact (i.e., it affects rates for all Californians across the state) but it also affects the standard under which buildings are constructed nationwide and how much seismic resistance and life safety they must have.

The next large project coming up for the Authority is the 42-month, \$3.4 million contract to research the performance effects of cripple-wall and sill-anchorage retrofits. This is an example of setting policy both for mitigation (in terms of emphasizing what premium discounts might be available for policyholders), and also setting the "Educate goal" policy (as the project will have a public report designed to outline how to motivate homeowners to mitigate). Specifically the Authority is proposing to commission scientific and engineering research and testing, to quantify the damage and insured loss reduction in retrofitted versus non-retrofitted cripple-wall-houses. The research results will be expressed clearly in a dollar value, making those results highly accessible to the Authority's insurance needs and the public. The essential deliverable is a set of damage functions that will quantify pre- and post-retrofit damage for selected, representative index buildings. Those damage functions would then be made available to commercial loss modeling firms (and others) for calculating insured loss, pre- and post-retrofit. The Authority would use that calculation to set its rates and determine its necessary total claim-paying capacity. This would have a statewide impact potentially affecting over 1 million homes throughout California that have this type of vulnerability (cripple wall or unbraced foundation).

The Authority was established to provide Californians the opportunity to insure their residences against the potential devastation of an earthquake event. Earthquakes cannot yet be predicted, thus earthquake science and modeling is essential for providing logical, defensible, and reasonable data on which to plan for the catastrophe and to appropriately set policy rates and prioritize mitigation activity. Thus, all the work done by the Director is directly mission-driven and critical to all three (educate, mitigate, and insure) of its specified goals under its Strategic Plan. Additionally, given that earthquakes are the Authority's only business, it has committed to leading efforts to further earthquake science and preparedness and the Director will be responsible for providing competent data and information on an ongoing basis.

**C. ROLE IN POLICY INFLUENCE (continued)**

**13. What is the CEA position's scope and nature of decision-making authority?**

The Director of Policy, Research and Special Projects will be responsible for making decisions on all aspects of the Policy, Research and Special Projects department. The position is responsible for developing and implementing a long-term research plan for the Authority. This requires a sufficient understanding of the organization's functions to make informed decisions to prioritize and recommend research projects and allocate firm resources to the appropriate projects.

The position will be identifying and making recommendations on new research projects which provide deliverables that would benefit the Authority, its policyholders and partners. Many of the research projects that the Authority participates in or sponsors are multi-year, multi-million dollar projects and will have major impacts on setting insurance rates and on the Authority's reinsurance.

**14. Will the CEA position be developing and implementing new policy, or interpreting and implementing existing policy? How?**

The Director of Policy, Research and Special Projects will be both developing and implementing new policy as well as interpreting and implementing existing policy. This position is an active member of the executive management team and through the data provided from the various research projects the Director will be developing and making recommendations that would benefit the Authority, its policyholder and partners on a statewide basis. This position will be identifying and evaluating ongoing and new research projects either conducted by the Authority or other entities and making recommendations to the executive management team and the Authority Governing Board. Additionally the Director will have to interpret and implement the results of any research that is done. The emphasis will be on applied research that is practical in its application.

The position will also have strong input on the Authority's Strategic plan. As part of the executive management team the Director will make recommendations based on scientific data to enhance programs such as earthquake preparedness to mitigate risk, lessen damages to homes, implement faster recovery upon catastrophe, and lower premium rates.