Date of Notice: Friday, January 12, 2018

PUBLIC NOTICE

A PUBLIC MEETING
OF THE ADVISORY PANEL TO THE GOVERNING BOARD
OF THE CALIFORNIA EARTHQUAKE AUTHORITY

NOTICE IS HEREBY GIVEN that the **Advisory Panel** to the Governing Board of the California Earthquake Authority (the "CEA") will meet in Sacramento, California. Pursuant to California Insurance Code §10089.7, subdivision (j), the Bagley-Keene Open Meeting Act applies generally to meetings of the Panel, and the meeting is open to the public — public participation, comments, and questions will be welcome for each agenda item. All items are appropriate for action if the Advisory Panel wishes to take action. Agenda items may be taken out of order.

NOTICE IS HEREBY FURTHER GIVEN that, should the Advisory Panel fail to assemble a quorum for the conduct of the business that is noted on the agenda below, those Panel members in attendance — or participating by telephone, as permitted by law — may gather as a General Subcommittee, whose purpose will be to discuss informally, and to take public and CEA-staff comments on, the business items appearing on the agenda below. The gathering of the General Subcommittee will remain open to the public — public participation, comments, and questions will be welcome for each agenda item.

NOTICE IS HEREBY FURTHER GIVEN that the Advisory Panel meeting — or gathering of the General Subcommittee — may be conducted as a teleconference. The teleconference site will be the same physical site noted directly below for the Panel meeting, and the teleconference site and meeting will be open and accessible to the public beginning at 10:30 a.m. for members of the public who wish to attend in person and participate.

LOCATION: **California Earthquake Authority**
Main Conference Room
801 K Street, Suite 1000
Sacramento, California

DATE: **Tuesday, January 23, 2018**

TIME: **10:30 a.m.**

AGENDA:

1. Call to order and member roll call.
   Establishment of a quorum

2. Consideration and approval of the minutes of the September 7, 2017, Advisory Panel meeting.

3. Executive report by Chief Insurance & Technology Officer Todd Coombes; assisted by CEA executive staff, Mr. Coombes's report will include updates on current CEA initiatives and legislative activities of interest to the CEA.

4. Chief Actuary Shawna Ackerman will present proposed modifications to the CEA-earthquake-insurance rating plan, policy forms, and coverages; request the Panel to recommend to the Governing Board that it approve such matters when presented to the Board; ask the Panel to consider and approve proposed rates for CEA's condominium-loss-assessment coverage; and discuss plans to present these and related matters to the CEA Governing Board at the Board's next scheduled meeting on January 25, 2018.

5. Advisory Panel Chair Mark Simmonds will lead a discussion on Advisory Panel member Pius Lee's concepts for potential structural and legislative adjustments affecting the CEA.

6. Public comment on items that do not appear on this agenda and public requests that those matters be placed on a future agenda.

7. Adjournment

For further information about this notice or its contents:

General Information:
Carlos Martinez
(916) 661-5549 (Direct)
Toll free (877) 797-4300

Media Contact:
Sarah Sol
Media Relations Manager
(916) 661-5502 (Direct)
ssol@calquake.com

California Earthquake Authority
801 K Street, Suite 1000
Sacramento, CA 95814-3518
Toll free (877) 797-4300
Fax (916) 327-8270

To view this notice on the CEA website or to learn more about the CEA, please visit www.EarthquakeAuthority.com.

***

Persons with disabilities may request special accommodations at this or any future Advisory Panel meeting or may request the accommodation necessary to receive agendas or materials the CEA prepares for its Panel meetings.

Please contact Carlos Martinez at (877) 797-4300 or cmartinez@calquake.com.

We would appreciate hearing from you at least five days before the meeting dates to best allow us to meet your needs.

***

NOTE: You might have received this notice because your name, or that of your organization, appears on a public-notice list maintained by the California Earthquake Authority. If in the future you do not wish to receive public notices pertaining to the California Earthquake Authority, please send your request by email to cmartinez@calquake.com.

DRAFT

CALIFORNIA EARTHQUAKE AUTHORITY
ADVISORY PANEL MEETING
MINUTES

Thursday, September 7, 2017
10:30 a.m.

Location: California Earthquake Authority
Main Conference Room
801 K Street, Suite 1000
Sacramento, California

Members of the Advisory Panel in attendance:
Mark Simmonds, Chair
Todd Anglin
Rose Conroy
Brian Deephouse
Thomas Gleeson
Pius Lee (via teleconference)
Anna Sauceda
Russina Sgoureva (via teleconference)
Angelica Valenzuela

Members of the California Earthquake Authority (CEA) Staff in attendance:
Glenn Pomeroy, Chief Executive Officer
Shawna Ackerman, Chief Actuary
Chet Davis, Director of Insurance Marketing
Janiele Maffei, Chief Mitigation Officer
Danny Marshall, General Counsel
Carlos Martinez, Governing Board and Advisory Panel Liaison
Chris Nance, Chief Communications Officer
Tracy Palombo, Risk Transfer Program Director
Tim Richison, Chief Financial Officer
Kellie Schneider, Chief Operations Officer
Mitch Ziemer, Insurance and Claim Director
Joe Zuber, Senior Counsel

Also present:
Jarrett Barrios, CEO, American Red Cross Los Angeles Region
Sheri Aguirre, Managing Director, California Residential Mitigation Program (CRMP)

1. Call to order and member roll call.

Advisory Panel Chair Mark Simmonds called the meeting to order at 10:31 a.m. A quorum was achieved.

Mr. Zuber read the antitrust admonition into the record.

2. **Consideration and approval of the minutes of the July 23, 2015, Advisory Panel meeting.**

> **MOTION**: Mr. Deephouse moved approval of the July 23, 2015, Advisory Panel Meeting Minutes as presented. Mr. Simmonds seconded. Motion carried unanimously.

3. **Advisory Panel Chair Mark Simmonds will lead a brief roundtable discussion so that members may introduce themselves.**

Mr. Simmonds asked everyone to introduce themselves.

4. **Executive Report by Chief Executive Officer Glenn Pomeroy; assisted by CEA executive staff, Mr. Pomeroy's report will include an introduction of the CEA to new Advisory Panel members, and an update on current CEA activities and initiatives.**

Glenn Pomeroy, Chief Executive Officer, introduced Joe Zuber, Senior Counsel, who provided a brief overview of the Bagley-Keene Open Meeting Act.

Mr. Pomeroy provided an overview, accompanied by a slide presentation, of the establishment of the CEA, Governing Board, and Advisory Panel by the California Legislature 20 years ago, California law regarding the mandatory offer of earthquake insurance, participating insurers (PIs), sources of funding, and marketing and coverage option history of the CEA. He stated the CEA has strived to increase value at reduced rates. Mr. Pomeroy stated the problem is not whether the CEA has enough funding to honor the promises made to policyholders; the problem is that not enough homeowners are protected.

Mr. Pomeroy introduced Jarrett Barrios, CEO of the Los Angeles Red Cross, who shared his experiences in leading the disaster recovery relief in Houston, Texas, a disaster-prone region where only approximately 15 percent of the homeowners have flood insurance.

Mr. Pomeroy stated the Federal Emergency Management Agency (FEMA) assistance is limited, yet individuals often think they do not need earthquake or other disaster insurance because the government will step in and take care of them. Mr. Barrios stated Houston homeowners have not hit that phase yet, but the people of Houston tend to have a positive attitude that there will be some sort of federal response. Mr. Barrios stated the $32,000 home replacement limit goes farther in Texas than in California.

Mr. Pomeroy asked how emergency response is replicated after the massive response to the Houston disaster. Mr. Barrios stated the most competent individuals are being redeployed to other disasters and volunteers have stepped up to continue the good work. They are less experienced but much of the difficult work has already been done. He acknowledged that the Red Cross is stretched thin, but the challenging situations present opportunities to train the workforce so in the end it will be much stronger.

Janiele Maffei, Chief Mitigation Officer, introduced Sheri Aguirre, the Managing Director of the California Residential Mitigation Program (CRMP). Ms. Maffei provided an overview, accompanied by a slide presentation, of the CEA's current mitigation projects. She highlighted the CEA's Earthquake Brace + Bolt (EBB) incentive program, which provides a reimbursement of up to $3,000 per seismic retrofit. It costs approximately $5,000 statewide to retrofit a house but there is a high cost benefit analysis associated with it and makes homeowners safer, more secure, and more resilient. The state of California, assisted by the Department of Insurance, funded an additional $6 million for the incentive program over years 2016 and 2017. Registration for the next round of seismic retrofits will begin in January of 2018.

Mr. Deephouse asked if interest exceeds funding for seismic retrofits. Ms. Maffei stated it does. It is estimated that approximately one million houses require this type of retrofit, and there are other types of vulnerabilities that need to be addressed throughout California. There is a need for greater funding support.

Mr. Simmonds asked if the program will reach its goal this year. Ms. Maffei stated the goal is to retrofit 2,000 houses this year; over 1,000 have been completed to date. The program has exhausted the waiting list for each of its four years.

Mr. Pomeroy stated the program started small and continues to increase the number of ZIP codes served annually. He stated the CEA is aggressively seeking additional funding sources to grow the program.

Ms. Valenzuela asked if financial need is a criterion. Mr. Pomeroy stated it has not been to date, but staff will request approval at the next Governing Board meeting to create a separate foundation that will raise funds for retrofit work in economically disadvantaged areas.

Ms. Sauceda suggested partnering with other organizations to promote strapping down gas and water lines and bracing water heaters while doing other work in houses, especially in disadvantaged areas.

Mr. Pomeroy asked staff to ensure that Advisory Panel members have the one-page information sheet on the EBB program, including the ZIP Codes where the program is available.

Mr. Simmonds suggested that staff give a presentation on the pilot program so Advisory Panel members will have a greater understanding of the EBB program concept and its benefits.

5. Chief Insurance and Technology Officer Todd Coombes will discuss the role of the Advisory Panel.

Chet Davis, the Director of Insurance Marketing, introduced himself and stated he joined the team last March. He presented the report on behalf of Todd Coombes, Chief Insurance and Technology Officer, who was unable to be in attendance. Mr. Davis provided an overview, accompanied by a slide presentation, of the background and statutory duty of the Advisory Panel, possible future advisory topics to help the CEA work towards its mission to Educate, Mitigate and Insure, and current activities and initiatives to make it easier for PIs to work with the CEA. He stated he is looking forward to working collaboratively with the Advisory Panel.

Mr. Simmonds stated the possible future advisory topic list is a good starting point for the Advisory Panel. He stated the need to ensure that Advisory Panel members can fully employ their skill sets to tackle the challenges and opportunities that face the CEA.

6. Mr. Simmonds will lead a discussion about Advisory Panel leadership and determine if the Panel needs to nominate and elect one or more leadership positions.

Mr. Simmonds stated the elected leadership for the Advisory Panel is the Chair and Vice Chair. He suggested keeping that structure and waiting until the next meeting to elect the next Chair and Vice Chair to allow the new members time to learn about the Advisory Panel before considering if they would like to take a leadership role or nominate another person to take a leadership role on the Advisory Panel.

7. CEA executive staff will provide the Advisory Panel with brief descriptions of their departmental functions.

Mr. Pomeroy asked members of the CEA executive team to introduce themselves and to briefly describe their leadership role.

8. Chief Actuary Shawna Ackerman and Insurance and Claim Director Mitch Ziemer will update the Advisory Panel on the next CEA rate-and-form filing, and will describe the Advisory Panel's involvement in the process.

Shawna Ackerman, Chief Actuary, provided an overview, accompanied by a slide presentation, of the background and need for the next CEA policy rate-and-form filing with a target date of January 1, 2019.

Mitch Ziemer, Insurance and Claim Director, continued the slide presentation and discussed the estimated timeline for the next CEA policy rate-and-form filing, which is subject to change. He stated the timeline is prepared far in advance to give stakeholders as much time as possible to prepare, plan, and execute the next rate-and-form filing.

Mr. Deephouse asked if the models indicate the direction of the next rate change. Ms. Ackerman stated she hopes to stay within a tight band around zero but it is possible she may have to recommend an increase in rates.

9. Mr. Simmonds will lead a discussion on Advisory Panel committees and will ask for member volunteers to serve.

Mr. Simmonds asked for two volunteers to form the Rate Subcommittee and to present their report at the next Advisory Panel meeting. Mr. Deephouse and Ms. Sgoureva volunteered.

Mr. Pomeroy stated there is no need to form other committees at this time. The Advisory Panel will determine later whether a committee structure will be helpful.

10. Public comment on items that do not appear on this agenda and public requests that those matters be placed on a future agenda.

Mr. Lee sent an email to staff containing items he would like placed on a future agenda for discussion.

Mr. Pomeroy stated the next Advisory Panel meeting will be scheduled in November or January.

11. Adjournment

There being no further business, the meeting was adjourned at 12:31 p.m.

Governing Board Memorandum

January 23, 2018

Agenda Item 3:	Executive Report by Chief Executive Officer Glenn Pomeroy and Chief Insurance & Technology Officer Todd Coombes
Recommended Action:	No action required—information only

Chief Executive Officer Glenn Pomeroy and Chief Insurance & Technology Officer Todd Coombes will present the Executive Report to the Panel; assisted by CEA executive staff, Mr. Pomeroy will update the Panel on current CEA initiatives and legislative activities of interest to the CEA, to include post-event financing, and Mr. Coombes's report will include updates on CEA agent strategy.

Advisory Panel Memorandum

January 23, 2018

Agenda Item 4:	CEA Proposed Rate and Form Application
Recommended Action:	Approve proposed CEA condominium earthquake insurance loss-assessment coverage rates for submission to the CEA Governing Board; support, and recommend to the CEA Governing Board, proposed CEA rate-and-form application

Background:

CEA staff has completed a thorough analysis of the CEA's 2017 portfolio (2^{nd} Quarter 2017), and based on the best available science, staff recommends adjustments to the CEA's rate plan, which if implemented will result ultimately in an 0.4% increase in the CEA's statewide average rates. The overall rate increase is modest, as described below, but the rate and premium changes at a per-policy level can be significant. Therefore, CEA staff proposes a three-year "phase-in" approach.

Staff has prepared a rate and form application for presentation to the CEA Governing Board on January 25, 2018. Staff will request the Board's approval to submit the application to the Insurance Commissioner for regulatory review and approval.

A public meeting of the Rate Subcommittee of the CEA Advisory Panel is scheduled for January 23, 2018, immediately preceding the Panel meeting.

With respect to the Panel's statutory responsibilities, California Insurance Code section 10089.26(a)(2) provides that the Panel is responsible for submitting to the Board rates for condominium earthquake loss-assessment coverage. CEA staff has determined that those loss-assessment coverage rates should be revised. The proposed rate application includes a rate proposal pertaining to condominium earthquake loss-assessment rates for the Panel's consideration and approval for submission to the Board.

Rate and Form Application

1. Introduction

This filing is submitted to adjust rate and premiums levels. The change in rates and premiums reflects the results of incorporating the latest available science into the CoreLogic RQE (Risk Quantification and Engineering) model used to analyze CEA's portfolio. CEA also proposes minor adjustments to policy forms.

Section II describes the proposed product changes. Section III addresses the proposed rate and premium changes.

The new editions of each of the CEA's current policy forms are included with the filing. The new editions incorporate new coverage enhancements and clarifications in coverage, definitions and policy language.

2. Proposed product changes

For this rate filing, CEA staff proposes (as the only change to CEA products) that Homeowners Choice Personal Property deductible option percent be no greater than the policyholder-selected Dwelling deductible percent in the same policy.

3. Summary of rate/premium changes

The rate and premium changes proposed are based on an analysis of the CEA's June 30, 2017, portfolio, using the best available scientific information for assessing earthquake frequency, severity, and loss, as statutorily required for CEA rates.

The loss component of the proposed rates is based on in the catastrophe loss model *RQE (Risk Quantification & Engineering), Version 17*, released in July 2017. This CoreLogic catastrophe-loss model incorporates the latest available scientific information consistent with the state-of-the-art knowledge of California seismic hazard, as required by law. The seismic hazard in the model was developed from the July 2014 USGS model, the time-dependent Uniform California Earthquake Rupture Forecast (UCERF3-TD) model, and from the ground-motion-prediction equations in the Next Generation Attenuation (NGA-West2) research. The model's vulnerability function is unchanged from prior versions, except that Version 17 adds age-of-construction for manufactured homes and an additional age-of-construction category for homeowners. The financial module is unchanged from prior versions.

Consistent with rate impacts of implementing prior model updates, the resulting rate indications can be significantly different among various portions of CEA's portfolio, particularly at the base-rate (territory) level.

- For example, CEA previously observed similar individual-territory rate impacts to this in its July 1, 2006, rate-change (CDI File #05-6848). At that time—and at CDI's request—CEA implemented the larger changes over three years.
- Similarly now, CEA proposes to implement the current rate indication over three years, by capping base-rate increases at 15% (or one-third of the indicated change, whichever is larger).
- The effects of this proposed three-year phase-in, measured for each year (relative to current rate levels), may be summarized as follows:

CEA Policy Type	Year 1	Year 2	Year 3
Homeowners	-2.8%	0.5%	2.1%
Manufactured Homes (Mobilehomes)	-10.1%	-5.2%	-2.1%
Condominium Unit owners	-16.9%	-15.4%	-14.4%
Renters	-20.8%	-19.9%	-19.8%
Overall	**-4.2%**	**-1.1%**	**0.4%**

Rate Classification Plan Changes

CEA would introduce with this filing:

- roof-type as a rating factor for CEA homeowners policies,
- a new year-of-construction category (houses built after 2004 or "post-2004"), and
- adjusting rating territory definitions.

Staff proposes that CEA eliminate accepting—for rating purposes—a "self-verified" home retrofit, a claim of which has historically supported providing the policyholder with the lowest available hazard reduction discount for CEA homeowners policies: 5%. Since that move would require that all discounts be supported by professionally verified retrofits, staff is working to expand the list of persons who can verify a code-compliant retrofit, to include trained home inspectors.

- When CEA introduced the verified-discount method in January 2016, the then-current 5% hazard-reduction discount was retained, to allow policyholders sufficient time to obtain a contractor, engineer, or design professional in order to complete the required verification form and thereby the higher, verified discount.
- Before January 2016, 41% of policyholders with qualifying houses (based on foundation-type and type and age of construction) had secured a 5% hazard reduction discount through self-verification. But by June 30, 2017, that percentage had grown to 75%.

In addition, the proposed filing would expand eligibility for the verified hazard reduction discount to include 1979 construction as well as other foundation types.

- Current eligibility is limited to pre-1979 wood-frame construction on a raised foundation.
- The change is proposed for two reasons.
    - Cities throughout California adopted the Uniform Building Code, 1976 edition, from 1977 into 1979—there was no uniform date of adoption. That means that the current CEA criterion of "pre-1979" construction leaves one year-of-construction in the CEA rating-factor age group "1960–1979" ineligible for a verified hazard reduction discount.
    - Older houses with the rating-factor foundation-type "other" (e.g., a combination slab/raised foundation) actually have a seismic vulnerability that is similar to a raised foundation, and therefore that house with an "other"-category foundation can be appropriately retrofitted. For example,

the California Residential Mitigation Program provides retrofit grants to both raised and combination foundations.

- Staff proposes that CEA <u>increase</u> levels of discount offered for a verified retrofit to a CEA-insured house with a raised foundation.
  - Staff does not know at this time how many CEA policyholders will take steps to verify their retrofits. For purposes of calculating the present proposed overall rate-change for dwellings, staff has assumed that no additional policyholders will verify.
  - But to the extent such policyholders do take steps to verify and thereby receive the larger discount, the overall rate-change would drop.

Staff proposes a new year-of-construction rating factor for manufactured homes (mobilehomes).

Staff-proposed changes to rating-territory definitions would apply to all CEA policy-types.

Condominium loss-assessment rates.

With respect to condominium earthquake loss-assessment rates, there are three important changes.

1. Revised rating territory definitions are proposed to apply to all CEA policy types, including condominiums unit policies.
2. Condominium earthquake loss-assessment rates (consistent with all CEA condominium-unit and renters rates) would no longer be rated on a "grouped-territory" basis. The current CEA rate structure uses three large, aggregated-territory groupings to establish condominium-unit and renters policy premiums—this filing would propose to use the same CEA-rating-territory definitions for all CEA policy types.
3. The *overall* rate level for condominium loss-assessment rates—which staff proposes to phase in over three years, as with other rates in the proposed filing—is decreasing. At the fully implemented (year-three) change. the decrease is 15.4%. Year-one and year-two decreases are -17.9% and -16.3%, compared to current rate levels.

<u>Recommended Action</u>:

CEA staff recommends that the Advisory Panel:

1. Approve for submission to the CEA Governing Board proposed condominium earthquake loss-assessment rates, as provided in California Insurance Code section 10089.26(a)(2).
2. Vote to support the proposed rate-and-form application and recommend it for approval to the CEA Governing Board.

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE
FILING MEMORANDUM

I. INTRODUCTION

This filing is submitted to adjust rate and premiums levels. The change in rates and premiums reflects the results of incorporating the latest available science into the CoreLogic RQE (Risk Quantification and Engineering) model used to analyze CEA's June 30, 2017 portfolio. CEA also proposes minor adjustments to policy forms.

Section II describes the proposed coverage form updates. Section III summarizes the proposed rate and premium changes. Section IV provides a brief overview of the supporting exhibits.

II. PROPOSED POLICY AND FORM UPDATES

As indicated on page 9 of the prior approval application, revised policy forms and applications are contained herein. In addition, a revised retrofit verification form (CEADRV) along with a revised notice of the availability of the hazard reduction is also submitted. Immediately preceding each form is a brief narrative of the proposed changes. The changes are intended to clarify coverage, neither restricting or broadening coverage.

III. SUMMARY OF RATE / PREMIUM CHANGES

The proposed rate and premium changes are based on an analysis of the CEA's June 30, 2017 portfolio using *RQE (Risk Quantification & Engineering), Version 17* which was released in July 2017.

This catastrophe loss model, developed by CoreLogic (formerly EQECAT), incorporates the latest available scientific information consistent with the state-of-the-art knowledge of California seismic hazard, as required by the CEA enabling legislation. The seismic hazard in the model was directly developed from the July 2014 USGS model, the time-dependent Uniform California Earthquake Rupture Forecast (UCERF3-TD) model and the ground motion prediction equations from the Next Generation Attenuation (NGA-West2) research. The vulnerability portion of the model is unchanged from prior model versions with the exception of adding age of construction for manufactured homes and one additional age of construction category for homeowners. The financial module is unchanged from prior versions.

As with prior model updates, the resulting rate indications are significantly different, particularly at the base rate (territory) level. For example, CEA previously observed this with its July 1, 2006 rate change (CDI File #05-6848) and, at the CDI's request, implemented the larger changes over a three-year period. CEA proposes to implement the current rate indication over a three-year period by capping base rate changes at 15% or one-third of the indicated change, whichever is larger. The cumulative effects of the proposed phase-in for each year are summarized as follows:

Policy Type	Year 1	Year 2	Year 3
Homeowners	-2.8%	0.5%	2.1%
Manufactured Homes (Mobilehomes)	-10.1%	-5.2%	-2.1%
Condominium Unitowners	-16.9%	-15.4%	-14.4%
Renters	-20.8%	-19.9%	-19.8%
Overall	-4.2%	-1.1%	0.4%

To obtain the most accurate modeled estimate of earthquake losses, every CEA policy is modeled at the specific site location (i.e., geocoded based on the street address of the risk) along with the relevant building characteristics that are collected by the CEA and used in rating the policies.

The specific building characteristics used in the model to estimate losses for homeowners are as follows:

1. Construction type
2. Year built
3. Number of stories
4. Roof type
5. Foundation type
6. Masonry veneer

The information for homeowners exposures is complete for items 1 – 4 and coded as reported. Foundation type is available from the CEA application and includes slab, raised and other. For both foundation types, raised and other, the application has additional information including whether there are cripple walls (yes, no), if the cripple walls are braced in accordance with the California building code, (braced, unbraced, not applicable) and if the foundation is bolted (yes, no.) Specific retrofitting measures, by definition, apply only to pre-1980 wood-frame construction on a raised foundation. Of that subset of policies, only those with retrofit features that have submitted the CEA – DRV (discount reduction verification form) with appropriate verification are coded as reported (i.e., braced, if applicable, and bolted.) All other policies that cover pre-1980 wood-frame construction on a raised or other foundation type are coded as reported except where a cripple wall is indicated as braced, it is ignored. As is discussed below, the CEA proposes to remove the self-verified hazard reduction discount. Masonry veneer is coded only on those policies that have selected masonry veneer coverage.

For manufactured homes (mobilehomes) CEA uses the age of construction and the presence of bracing systems. Verification of the earthquake resistant bracing system has been required since the mitigation discount was first implemented by the CEA in 2006. The exposure information for manufactured homes (mobilehomes) exposures is complete.

For condominiums and renters, the location is the only classification factor. As noted above, all CEA policies are geocoded and modeled at the risk's street address.

Rate Classification Plan Changes

With this filing, the CEA is introducing roof type as a rating factor for homeowners, adding a new year of construction category (post-2004) and adjusting rating territory definitions. CEA proposes to eliminate the self-verified hazard reduction discount and is working to expand the list of professionals who can verify a code-compliant retrofit to include trained home inspectors. When the verified discount was introduced in January 2016, CEA chose to "grandfather" the then-current 5% hazard reduction discount to allow policyholders time to complete the necessary verification form and obtain the higher verified discount. Prior to January 2016 approximately 41% of those who could qualify (based on type/age of construction and foundation type) had the 5% hazard reduction discount. For the June 30, 2017 portfolio that number has grown to 75%.

Additionally, this filing proposes to expand eligibility for the verified hazard reduction discount to include 1979 wood-frame construction and other foundation types. Currently, eligibility is limited to pre-1979 wood-frame construction on a raised foundation. The change is proposed for two reasons. First, cities throughout California adopted the Uniform Building Code 1976 edition throughout 1977 and into 1979. Thus, the current cut-off of "pre-1979" leaves a single year of construction in the CEA age group 1960 – 1979 as ineligible for a verified hazard reduction discount. Second, older homes constructed with "other" types of foundations (i.e., combination foundations) have similar vulnerability to a raised foundation and can be retrofitted. For example, the California Residential Mitigation Program provides grants for retrofits to both raised and combination foundations. Finally, CEA proposes to increase the verified hazard reduction discount for raised foundations and extend a verified hazard reduction discount to foundation type "other" as shown on Exhibit 15, page 8. Since CEA does not know how many policyholders will verify their retrofits, the overall rate change for dwellings is calculated assuming that no additional policyholders will verify. To the extent policyholders do verify and receive the greater discount, the overall rate change will be reduced.

CEA is also introducing year of construction as a rating factor for manufactured homes (mobilehomes.)

The proposed changes to rating territory definitions apply to all policy types.

IV. OVERVIEW OF SUPPORTING EXHIBITS

Although the CEA is not subject to the prior approval regulations, the CEA has, for ease of review, completed the exhibits requested in the prior approval rate filing application consistent with past practice because of the CDI's request. The key exhibits for the development of the CEA rates and premiums are as follows:

EXHIBIT 5 – Premium Trend Factor

Trend is affected by exposure growth and changes in the distribution. Prior to 2016, the CEA distribution was relatively stable. The January 1, 2016 rate filing introduced many changes including increased coverage limit options and additional deductible options. Since January 2016, CEA policy sales have increased at unprecedented levels. For this reason, the selected trend relies on shorter-term selections.

Because there is no frequency trend associated with earthquakes; the severity trend is equal to the total expected increase in exposure and the change in the distribution as measured by the premium trend. The trends calculated in Exhibit 5 also function as the loss trend resulting in a 0% net trend assumption for the ratemaking process. Consequently, Exhibit 8 in the Standard Exhibit Template is blank. Exhibit 7 of the Standard Exhibit Template is also blank as the modeled losses upon which the rate development relies are at ultimate.

Regarding the Standard Exhibit Template, Exhibit 5, please note that no selection has been made on the exhibit as this exhibit does not appropriately reflect CEA trends. It allows only for a premium trend per exposure selection whereas, as noted above, CEA trend is a function of exposure growth in addition to changes in the distribution as measured by the premium trend per exposure.

EXHIBIT 12 – Reinsurance Premium and Recoverable

The CEA uses a net ratemaking approach wherein the net cost of risk financing (risk financing premiums less the expected recoveries) is included in the rate development. Exhibit 12 details the expected limits, premiums and recoverables.

EXHIBIT 14 – Rate Distribution

All policies in force June 30, 2017 were rated using the current and proposed rates and rating structure to calculate impacts by rating component and overall.

EXHIBIT 15 – Rate Classification Relativities

Current, indicated and proposed base rates, increased limits relativities and deductible relativities are displayed for each policy type and coverage in this exhibit as well as the rate classification relativities for homeowners and manufactured homes (mobilehomes.) Proposed base rates for each year for the three-year phase-in are also presented.

Proposed base rates by rating territory are shown in Exhibit 15 for each coverage. There are seven notable changes from the CEA's current territory structure.

1. San Diego county and the southern portion of Orange county have been moved out of the current Territory 27 and into a new territory - Territory 1. As Exhibit 15 shows, this area has a similar but lower loss cost than Territory 27. This difference combined with the fact that there are a significant number of policies in the region are the motivating factors for proposing the change.
2. A new Territory 3 is proposed which is comprised of the remainder of Orange County. This was previously part of Territory 7. As Exhibit 15 shows, this area has a lower loss cost than Territory 7.
3. The current Territory 4 which is comprised of 4 ZIP codes in Riverside county has been combined with Territory 8. The motivating factor for this change is simply that the Territory is geographically small and contains few policies.

4. A new Territory 16 is proposed which is created from the eastern portion of San Luis Obispo and Monterey counties (currently in Territory 18) and extending into the westernmost portions of Kern, Kings and Fresno counties (currently part of Territory 27.) Exhibit 15 shows this area has significantly higher loss costs than both Territory 18 and 27. Those in the newly proposed Territory 16 will see substantial increases in rate levels. As noted above, CEA proposes to implement the full rate change over three years to ease the impact of the significant rate increase on policyholders. For current and new policyholders in Territory 16 the base rate change is capped at one-third of the indicated change each year. Exhibit 20 – Customer Dislocation has additional exhibits showing the effects of the proposed phase-in specifically for Territory 16.
5. A new Territory 21 is proposed which is created from the easternmost portions of San Francisco county created from the existing Territory 22. As Exhibit 15 shows, this area has a lower loss cost than Territory 22.
6. A new Territory 28 is proposed which is Del Norte county and portions of Humboldt and Trinity counties all of which are currently in Territory 27. Exhibit 15 shows this area has significantly higher loss costs than Territory 27. Those in the newly proposed Territory 28 will see substantial increases in rate levels. Like Territory 16, CEA proposes to phase-in the full rate change over three years by capping the base rate change at one-third of the indicated change each year. Exhibit 20 – Customer Dislocation has additional exhibits showing the effects of the proposed phase-in specifically for Territory 28.
7. Currently, condominium unitowners and renters coverages are rated using a grouped territory approach, i.e., the territories used for homeowners and manufactured homes (mobilehomes) are grouped into three large rating territories. CEA proposes to eliminate the groupings and rate condominium unitowners and renters using the same territory definitions as are used for homeowners and manufactured homes (mobilehomes.) While some territories do have few - and in one case, no - condominium or renters policies, the overall policy count is sufficiently large to move away from the historical grouped approach.

As noted above, the CEA is introducing a new rating factor - roof type - for homeowners policies, eliminating the self-verified hazard reduction discount and expanding the number of rate classes for year of construction and territory. CEA is also introducing year built for manufactured homes (mobilehomes) coverages.

EXHIBIT 20 – Customer Dislocation

This exhibit displays histograms of the rate impact on an overall basis as well as for each policy type - homeowners, manufactured homes (mobilehomes), condominium unit owners and renters. Additionally, for those areas were CEA is proposing a phased-in base rate change there are exhibits further detailing the impacts.

EXHIBIT 21 – Insurer's Ratemaking Calculations

CEA is using this exhibit space to present the development of the indicated rate change. The slight difference in the indication (0.5%) versus the selection (0.4%) is due to rounding.

Proposed policy forms

The current policies and the proposed policies are included in the submission. Immediately preceding the policies is a summary overview of the changes.

Proposed rate manual

The submission includes a new CEA Rate manual. An overview of the changes to the manual is included immediately preceding the proposed rate manual. We are proposing to implement the above-mentioned changes effective 1/1/2019 upon approval.

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

EXHIBIT 1 - FILING HISTORY

Filing Number	Date Filed	Product
15-53	1/17/2015	All

EXHIBIT 2 - RATE LEVEL HISTORY

Filing Number	Effective Date	Product	Rate Change
15-53	1/1/2016	All (Standard & Choice)	-10.0%
11-2233	7/1/2012	HO Choice	New coverage
11-2233	1/1/2012	Standard	-12.5%

EXHIBIT 3 - POLICY TERM DISTRIBUTION

The policy term for all policies is one year.

EXHIBIT 4 - PREMIUM ADJUSTMENT FACTOR

The rates are developed using a pure premium methodology. Consequently, historical premium is not part of the rate development calculations. Premium adjustment factors are not applicable.

Exhibit 5

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

PREMIUM TREND FACTOR

	Quarterly Data				Rolling 4-Quarter Data			
Calendar YYYQ	Written Exposures	Written Premium	On-Level Premium	On-Level WP per Exp.	Written Exposures	Written Premium	On-Level Premium	On-Level WP per Exposure
20111	62,069,063,068	128,046,169	100,082,429					
20112	79,977,685,195	164,619,745	127,929,917					
20113	80,109,903,878	164,121,727	127,522,431					
20114	73,577,209,222	149,722,911	115,647,549	1.57	295,733,861,363	606,510,552	471,182,326	1.59
20121	65,358,925,505	117,498,969	105,921,700	1.62	299,023,723,800	595,963,352	477,021,597	1.60
20122	84,145,375,877	150,664,986	135,078,807	1.61	303,191,414,482	582,008,593	484,170,487	1.60
20123	85,097,636,504	151,363,010	136,286,480	1.60	308,179,147,108	569,249,876	492,934,536	1.60
20124	77,899,642,609	137,290,747	123,615,996	1.59	312,501,580,495	556,817,712	500,902,983	1.60
20131	67,190,802,631	120,118,865	108,020,354	1.61	314,333,457,621	559,437,608	503,001,637	1.60
20132	86,313,073,140	153,845,122	137,670,272	1.60	316,501,154,884	562,617,744	505,593,102	1.60
20133	87,180,533,918	154,795,056	138,911,115	1.59	318,584,052,298	566,049,790	508,217,737	1.60
20134	79,852,355,551	140,575,404	126,138,877	1.58	320,536,765,240	569,334,447	510,740,618	1.59
20141	69,766,032,508	124,548,530	111,771,644	1.60	323,111,995,117	573,764,112	514,491,908	1.59
20142	90,922,344,299	161,808,818	144,512,656	1.59	327,721,266,276	581,727,808	521,334,292	1.59
20143	92,880,637,426	164,535,650	147,321,513	1.59	333,421,369,784	591,468,402	529,744,690	1.59
20144	84,846,887,278	149,513,522	133,719,658	1.58	338,415,901,511	600,406,520	537,325,471	1.59
20151	73,273,744,674	131,007,002	118,017,279	1.61	341,923,613,677	606,864,992	543,571,106	1.59
20152	95,945,768,928	170,936,133	153,257,612	1.60	346,947,038,306	615,992,307	552,316,062	1.59
20153	97,385,110,884	172,970,924	155,518,726	1.60	351,451,511,764	624,427,581	560,513,275	1.59
20154	89,808,301,712	157,569,130	141,707,920	1.58	356,412,926,198	632,483,189	568,501,537	1.60
20161	77,868,039,940	123,736,478	123,736,478	1.59	361,007,221,464	625,212,665	574,220,736	1.59
20162	103,468,446,889	163,768,300	163,768,300	1.58	368,529,899,425	618,044,832	584,731,424	1.59
20163	104,911,856,024	165,582,489	165,582,489	1.58	376,056,644,565	610,656,397	594,795,187	1.58
20164	101,442,114,959	156,697,234	156,697,234	1.54	387,690,457,812	609,784,501	609,784,501	1.57
20171	88,084,106,644	140,071,370	140,071,370	1.59	397,906,524,516	626,119,393	626,119,393	1.57
20172	112,769,245,821	178,430,433	178,430,433	1.58	407,207,323,448	640,781,526	640,781,526	1.57
20173	124,357,529,785	193,107,152	193,107,152	1.55	426,652,997,209	668,306,189	668,306,189	1.57
4-point					0.132			-0.005
8-point					0.106			-0.010
12-point					0.084			-0.006
16-point					0.073			-0.004
20-point					0.063			-0.004
24-point					0.058			-0.003
Selected					0.09			-0.01

Effective Date	1/1/2019
Modeled Portfolio Run Date	6/30/2017
Trend Period	2.50
Exposure Growth	1.241
Premium Growth	0.975
Trend Factor	1.210
Annual combined trend	7.9%

Exhibit 6

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

MISCELLANEOUS FEES AND OTHER CHARGES

	2014	2015	2016
1. Installment Fee Income (A.S., page 4, line 13)	409,526	403,893	401,210
2. Earned Premium	592,857,587	618,575,351	628,381,599
3. Miscellaneous Fees % of Premium (1) / (2)	0.07%	0.07%	0.06%

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

EXHIBIT 7 - LOSS AND DEFENSE AND COST CONTAINMENT (DCCE) DEVELOPMENT FACTORS

The modeled losses used to develop the rate indication are ultimate losses. Therefore, the loss development factors are 1.00.

Loss adjustment expenses are paid by the participating insurance companies per contract at 9% of loss. Therefore, the LAE development factors are also 1.00.

EXHIBIT 8 - LOSS AND DCCE TREND

There is no expected loss or DCCE trend associated with this program other than the trend associated with changes in coverage selections and policy growth. Thus loss and DCCE trend factors and premium trend factors are the same, i.e., net trend is 0%.

EXHIBIT 9 - CATASTROPHE ADJUSTMENT

This is a catastrophe line. Average annual losses have been modeled using CoreLogic RQE Version 17 as described in the Filing Memorandum.

EXHIBIT 10 - CREDIBILITY ADJUSTMENT

Full credibility is given to the modeled average annual losses.

EXHIBIT 11 - ANCILLARY INCOME

There is no ancillary income as defined in the CDI rate filing instructions.

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

EXHIBIT 12 - REINSURANCE PREMIUM AND RECOVERABLES

RISK FINANCING COSTS
(Thousands)

(1)	Target Claims Paying Capacity	18,309,964
(2)	CEA Capital	5,804,000
(3)	Revenue Bonds	680,000
(4)	2nd Industry Assessment Layer	1,655,586
(5)	New Industry Assessment Layer	-
(6)	Total Risk Transfer Needed	10,170,378
(7)	Rate on Line	4.37%
(8)	Risk Transfer Premium	444,487
(9)	Expected Recoveries	223,520
(10)	Brokerage Expenses	2,800
(11)	Net Cost	223,767

Notes:
(1) Target total claims paying capacity
(2) Estimated CEA Capital assuming no losses occur
(3) Estimated Revenue Bonds value assuming no losses occur
(4) Current value of 2nd IAL, assumes no losses occur and no reduction
(5) Estimated value of New IAL, assumes no losses occur
(6) =(1) - SUM[(2) - (5)]
(7) = (8) / (6)
(8) Expected cost of reinsurance and risk financing contracts, using November 2017 program to estimate costs.
(9) Expected recoveries based on modeled losses, risk financing attachment level and limit
(10) Broker fees paid in addition to risk transfer premium based on contractual agreements
(11) = (8) - (9) + (10)

Exhibit 13

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

REQUEST FOR VARIANCE

CEA is not subject to the prior approval regulations. Therefore variances are not applicable.

Exhibit 14

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

RATE DISTRIBUTION

Year 1	Dwelling	Manufactured Homes (mobilehomes)	Condominiums	Renters	Overall
Base Rates	-14.5%	-7.3%	-18.3%	-22.3%	-14.9%
Stories	-0.1%				-0.1%
Construction / Age* / Foundation	7.8%	-2.7%			7.0%
Hazard Reduction Discount	1.2%	0.1%			1.1%
Roof Type	2.9%				2.6%
Increased Limits Factors	1.1%	0.8%	2.9%	8.0%	1.3%
Deductible Factors	0.5%	-1.7%	-1.1%	-5.3%	0.3%
Overall	-2.8%	-10.1%	-16.9%	-20.8%	-4.2%

Year 2	Dwelling	Manufactured Homes (mobilehomes)	Condominums	Renters	Overall
Base Rates	-11.6%	-2.2%	-16.8%	-21.5%	-12.1%
Stories	-0.1%				-0.1%
Construction / Age* / Foundation	7.8%	-2.7%			7.0%
Hazard Reduction Discount	1.2%	0.1%			1.1%
Roof Type	2.9%				2.6%
Increased Limits Factors	1.1%	0.8%	2.9%	8.0%	1.3%
Deductible Factors	0.5%	-1.7%	-1.1%	-5.3%	0.3%
Overall (Cumulative)	0.5%	-5.2%	-15.4%	-19.9%	-1.1%

Year 3	Dwelling	Manufactured Homes (mobilehomes)	Condominums	Renters	Overall
Base Rates	-10.2%	1.1%	-15.8%	-21.3%	-10.7%
Stories	-0.1%				-0.1%
Construction / Age* / Foundation	7.8%	-2.7%			7.0%
Hazard Reduction Discount	1.2%	0.1%			1.1%
Roof Type	2.9%				2.6%
Increased Limits Factors	1.1%	0.8%	2.9%	8.0%	1.3%
Deductible Factors	0.5%	-1.7%	-1.1%	-5.3%	0.3%
Overall (Cumulative)	2.1%	-2.1%	-14.4%	-19.8%	0.4%

All impacts are measured by rating each policy from the 6/30/2017 portfolio replacing current with proposed rates and rating factors for each year. As noted above, the year 2 and year 3 impacts are cumulative rather than incremental. Thus, the impacts by rating element are the same for each year with the exception of the base rates which change each year of the proposed three year phase-in.

*Age only for manufactured homes (mobilehomes.)

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

RATE CLASSIFICATION RELATIVITIES

Current, indicated and proposed base rates and rate classification relativities are detailed in the subsequent exhibits.

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
HOMEOWNER DWELLINGS
COVERAGE A - 15% DEDUCTIBLE

Territory	Current Rate per $1,000	Indicated Rate per $1,000	Selected Rate per $1,000 Year 1	Year 2	Year 3	Overall Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)
						(6) / (2) - 1.0
1	0.42	0.26	0.26	0.26	0.26	-38.5%
2	3.88	3.55	3.55	3.55	3.55	-8.5%
3	1.42	1.19	1.19	1.19	1.19	-16.0%
5	2.46	3.51	2.83	3.20	3.51	42.5%
6	2.02	1.86	1.86	1.86	1.86	-8.1%
7	1.55	1.33	1.33	1.33	1.33	-14.4%
8	2.12	1.25	1.25	1.25	1.25	-41.1%
11	2.08	1.82	1.82	1.82	1.82	-12.5%
12	1.88	1.34	1.34	1.34	1.34	-28.5%
13	1.27	0.74	0.74	0.74	0.74	-41.7%
15	1.37	1.11	1.11	1.11	1.11	-19.0%
16	0.40	2.28	1.03	1.66	2.28	464.9%
18	0.52	0.34	0.34	0.34	0.34	-34.7%
19	1.36	1.51	1.51	1.51	1.51	11.2%
20	2.06	2.54	2.36	2.54	2.54	23.6%
21	2.62	2.05	2.05	2.05	2.05	-21.8%
22	2.53	3.48	2.91	3.29	3.48	37.7%
23	1.96	1.18	1.18	1.18	1.18	-39.9%
24	1.48	1.12	1.12	1.12	1.12	-24.5%
25	1.65	2.45	1.92	2.19	2.45	48.6%
26	1.84	2.21	2.11	2.21	2.21	20.2%
27	0.45	0.29	0.29	0.29	0.29	-35.3%
28	0.45	1.11	0.67	0.89	1.11	147.6%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
HOMEOWNER DWELLINGS
STANDARD COVERAGE C - $5,000, 15% DEDUCTIBLE

						Overall	
	Current	Indicated	Selected Rate per Policy			Percentage	Premium
Territory	Rate per policy	Rate per policy	Year 1	Year 2	Year 3	Change	Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	11.19	5.57	6.00	6.00	6.00	-46.4%	(5.19)
2	98.01	75.22	75.00	75.00	75.00	-23.5%	(23.01)
3	36.66	25.28	25.00	25.00	25.00	-31.8%	(11.66)
5	62.55	74.36	72.00	74.00	74.00	18.3%	11.45
6	51.64	39.42	39.00	39.00	39.00	-24.5%	(12.64)
7	39.96	28.13	28.00	28.00	28.00	-29.9%	(11.96)
8	54.62	26.52	27.00	27.00	27.00	-50.6%	(27.62)
11	52.34	38.52	39.00	39.00	39.00	-25.5%	(13.34)
12	47.45	28.41	28.00	28.00	28.00	-41.0%	(19.45)
13	32.00	15.77	16.00	16.00	16.00	-50.0%	(16.00)
15	35.00	23.52	24.00	24.00	24.00	-31.4%	(11.00)
16	10.50	48.29	23.00	35.00	48.00	357.0%	37.50
18	13.82	7.13	7.00	7.00	7.00	-49.4%	(6.82)
19	34.46	31.89	32.00	32.00	32.00	-7.1%	(2.46)
20	53.81	53.92	54.00	54.00	54.00	0.4%	0.19
21	66.00	43.37	43.00	43.00	43.00	-34.8%	(23.00)
22	64.57	73.68	74.00	74.00	74.00	14.6%	9.43
23	49.18	25.08	25.00	25.00	25.00	-49.2%	(24.18)
24	37.84	23.64	24.00	24.00	24.00	-36.6%	(13.84)
25	41.94	51.84	48.00	52.00	52.00	24.0%	10.06
26	47.07	46.82	47.00	47.00	47.00	-0.2%	(0.07)
27	11.73	6.16	6.00	6.00	6.00	-48.8%	(5.73)
28	10.00	23.52	15.00	20.00	24.00	140.0%	14.00

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
HOMEOWNER DWELLINGS
CHOICE COVERAGE C - $5,000, 15% DEDUCTIBLE

	Current	Indicated	Selected Rate per Policy			Overall	
						Percentage	Premium
Territory	Rate per policy	Rate per policy	Year 1	Year 2	Year 3	Change	Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	59.29	22.24	22.00	22.00	22.00	-62.9%	(37.29)
2	259.72	300.05	299.00	300.00	300.00	15.5%	40.28
3	121.75	100.83	101.00	101.00	101.00	-17.0%	(20.75)
5	191.87	296.62	227.00	262.00	297.00	54.8%	105.13
6	172.01	157.24	157.00	157.00	157.00	-8.7%	(15.01)
7	130.65	112.21	112.00	112.00	112.00	-14.3%	(18.65)
8	173.83	105.78	106.00	106.00	106.00	-39.0%	(67.83)
11	152.73	153.64	154.00	154.00	154.00	0.8%	1.27
12	157.82	113.34	113.00	113.00	113.00	-28.4%	(44.82)
13	146.00	62.91	63.00	63.00	63.00	-56.8%	(83.00)
15	99.00	93.81	94.00	94.00	94.00	-5.1%	(5.00)
16	56.53	192.61	102.00	147.00	193.00	241.4%	136.47
18	61.87	28.44	28.00	28.00	28.00	-54.7%	(33.87)
19	130.47	127.20	127.00	127.00	127.00	-2.7%	(3.47)
20	156.45	215.07	180.00	203.00	215.00	37.4%	58.55
21	166.00	172.98	173.00	173.00	173.00	4.2%	7.00
22	165.60	293.91	208.00	251.00	294.00	77.5%	128.40
23	135.16	100.04	100.00	100.00	100.00	-26.0%	(35.16)
24	122.60	94.28	94.00	94.00	94.00	-23.3%	(28.60)
25	74.96	206.78	119.00	163.00	207.00	176.1%	132.04
26	140.23	186.75	161.00	182.00	187.00	33.3%	46.77
27	61.08	24.59	25.00	25.00	25.00	-59.1%	(36.08)
28	56.00	93.84	69.00	82.00	94.00	67.9%	38.00

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
HOMEOWNER DWELLINGS
COVERAGE D - $1,500

	Current	Indicated	Selected Rate per Policy			Overall Percentage	Premium
Territory	Rate per policy	Rate per policy	Year 1	Year 2	Year 3	Change	Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	10.58	4.08	4.00	4.00	4.00	-62.2%	(6.58)
2	37.69	55.01	43.00	49.00	55.00	45.9%	17.31
3	18.89	18.49	18.00	18.00	18.00	-4.7%	(0.89)
5	31.28	54.39	39.00	47.00	54.00	72.6%	22.72
6	30.82	28.83	29.00	29.00	29.00	-5.9%	(1.82)
7	20.24	20.57	21.00	21.00	21.00	3.8%	0.76
8	30.12	19.40	19.00	19.00	19.00	-36.9%	(11.12)
11	25.68	28.17	28.00	28.00	28.00	9.0%	2.32
12	26.95	20.78	21.00	21.00	21.00	-22.1%	(5.95)
13	27.00	11.53	12.00	12.00	12.00	-55.6%	(15.00)
15	18.00	17.20	17.00	17.00	17.00	-5.6%	(1.00)
16	10.25	35.32	19.00	27.00	35.00	241.4%	24.75
18	11.69	5.21	5.00	5.00	5.00	-57.2%	(6.69)
19	23.43	23.32	23.00	23.00	23.00	-1.8%	(0.43)
20	24.33	39.43	29.00	34.00	39.00	60.3%	14.67
21	24.00	31.72	28.00	32.00	32.00	33.3%	8.00
22	24.17	53.89	34.00	44.00	54.00	123.4%	29.83
23	21.20	18.34	18.00	18.00	18.00	-15.1%	(3.20)
24	18.31	17.29	17.00	17.00	17.00	-7.1%	(1.31)
25	12.00	37.91	21.00	30.00	38.00	216.8%	26.00
26	21.66	34.24	26.00	30.00	34.00	56.9%	12.34
27	10.89	4.51	5.00	5.00	5.00	-54.1%	(5.89)
28	10.00	17.21	12.00	14.00	17.00	70.0%	7.00

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
HOMEOWNER DWELLINGS
BUILDING CODE UPGRADE COVERAGE - $20,000

						Overall	
	Current	Indicated	Selected Rate per Policy			Percentage	Premium
Territory	Rate per policy	Rate per policy	Year 1	Year 2	Year 3	Change	Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	4.51	3.17	3.00	3.00	3.00	-33.5%	(1.51)
2	43.56	42.80	43.00	43.00	43.00	-1.3%	(0.56)
3	15.55	14.38	14.00	14.00	14.00	-10.0%	(1.55)
5	27.00	42.32	32.00	37.00	42.00	55.6%	15.00
6	21.85	22.43	22.00	22.00	22.00	0.7%	0.15
7	17.00	16.01	16.00	16.00	16.00	-5.9%	(1.00)
8	23.21	15.09	15.00	15.00	15.00	-35.4%	(8.21)
11	22.72	21.92	22.00	22.00	22.00	-3.2%	(0.72)
12	20.23	16.17	16.00	16.00	16.00	-20.9%	(4.23)
13	14.00	8.97	9.00	9.00	9.00	-35.7%	(5.00)
15	16.00	13.38	13.00	13.00	13.00	-18.8%	(3.00)
16	4.25	27.48	12.00	20.00	27.00	535.4%	22.75
18	5.82	4.06	4.00	4.00	4.00	-31.3%	(1.82)
19	14.43	18.15	17.00	18.00	18.00	24.7%	3.57
20	24.91	30.68	29.00	31.00	31.00	24.5%	6.09
21	31.00	24.68	25.00	25.00	25.00	-19.4%	(6.00)
22	30.25	41.93	35.00	40.00	42.00	38.8%	11.75
23	23.29	14.27	14.00	14.00	14.00	-39.9%	(9.29)
24	17.31	13.45	13.00	13.00	13.00	-24.9%	(4.31)
25	18.97	29.50	22.00	25.00	29.00	52.9%	10.03
26	20.66	26.64	24.00	27.00	27.00	30.7%	6.34
27	4.75	3.51	4.00	4.00	4.00	-15.8%	(0.75)
28	4.00	13.39	7.00	10.00	13.00	225.0%	9.00

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES

HOMEOWNER DWELLINGS

STORIES

Number of Stories	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
One-Story	0.91	0.89	0.89	-2.2%
Greater than One-Story	1.09	1.11	1.11	1.8%

CONSTRUCTION / AGE / FOUNDATION

Construction / Age Foundation	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
Frame Pre-1940, Slab	1.250	1.090	1.09	-12.8%
Frame Pre-1940, Raised	1.563	1.470	1.47	-6.0%
Frame Pre-1940, Other	1.250	1.310	1.28	2.4%
Frame 1940-1959, Slab	0.950	0.950	0.95	0.0%
Frame 1940-1959, Raised	1.188	1.210	1.21	1.9%
Frame 1940-1959, Other	0.950	1.160	1.08	13.7%
Frame 1960-1979, Slab	1.080	1.240	1.24	14.8%
Frame 1960-1979, Raised	1.200	1.580	1.58	31.7%
Frame 1960-1979, Other	1.080	1.550	1.41	30.6%
Frame 1980-1989	0.800	0.890	0.89	11.3%
Frame 1990 - 2004	0.650	0.720	0.72	10.8%
Post-2004	0.650	0.610	0.61	-6.2%
Other Construction	1.900	2.280	2.28	20.0%

Note: The selections for foundation type "Other" are lower than the indication. The selections are based on the average of the slab and raised selections in order to recognize that foundation type "Other" represents a combination foundation and should be less than raised and more than slab.

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES

HOMEOWNER DWELLINGS

HAZARD REDUCTION DISCOUNT RATING FACTORS

Construction / Age Foundation	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
Frame Pre-1940, Raised, Verified	0.80	0.74	0.75	-6.3%
Frame Pre-1940, Raised, Self-verified	0.95	1.00	1.00	5.3%
Frame Pre-1940, Other, Verified	1.00	0.85	0.85	-15.0%
Frame 1940-1959, Raised, Verified	0.80	0.79	0.80	0.0%
Frame 1940-1959, Raised, Self-verified	0.95	1.00	1.00	5.3%
Frame 1940-1959, Other	1.00	0.88	0.90	-10.0%
Frame 1960-1979, Raised, Verified	0.90	0.78	0.80	-11.1%
Frame 1960-1979, Raised, Self-verified	0.95	1.00	1.00	5.3%
Frame 1960-1979, Other, Verified	1.00	0.88	0.90	-10.0%
All Other	1.00	1.00	1.00	0.0%

Note: A hazard reduction discount is available to pre-1980 frame homes on a raised or other foundation provided the home has a secured (bolted) foundation, braced cripple walls, if any, and a strapped water heater in accordance with applicable building codes and that such state is verified. The indicated relativity above is the relationship between the slab home of a similar vintage. The selection is made such that a qualifying home will have a similar rate as the same vintage home on a slab foundation. As shown above, the 5% self-verified credit is discontinued.

ROOF TYPE

Roof Type	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
Tile / Slate	1.00	1.12	1.12	12.0%
All Other	1.00	0.99	0.99	-1.0%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES

HOMEOWNER DWELLINGS

DEDUCTIBLE FACTORS

Coverages A & BCU	Current Relativity	Indicated Relativity	Selected Relativity	Selected Change
(1)	(2)	(3)	(4)	(5)
5%	1.81	1.89	1.89	4.4%
10%	1.33	1.37	1.37	3.0%
15%	1.00	1.00	1.00	0.0%
20%	0.81	0.80	0.80	-1.2%
25%	0.67	0.65	0.65	-3.0%

Coverage C Standard	Current Relativity	Indicated Relativity	Selected Relativity	Selected Change
(1)	(2)	(3)	(4)	(5)
5%	1.81	1.75	1.75	-3.3%
10%	1.33	1.30	1.30	-2.3%
15%	1.00	1.00	1.00	0.0%
20%	0.81	0.83	0.83	2.5%
25%	0.67	0.69	0.69	3.0%

Note: Coverage D is provided with no deductible.

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES

HOMEOWNER DWELLINGS

ADDITIONAL LIMITS

Coverage C Standard	Current Relativity	Indicated Relativity	Selected Relativity	Selected Change
(1)	(2)	(3)	(4)	(5)
5,000	1.00	1.00	1.00	0.0%
25,000	2.40	3.80	3.80	58.3%
50,000	4.15	5.81	5.81	40.0%
75,000	5.30	6.96	6.96	31.3%
100,000	6.67	7.52	7.52	12.7%
150,000	6.93	8.16	8.16	17.7%
200,000	7.45	8.41	8.41	12.9%

ADDITIONAL LIMITS

Coverage D	Current Relativity	Indicated Relativity	Selected Relativity	Selected Change
(1)	(2)	(3)	(4)	(5)
1,500	1.00	1.00	1.00	0.0%
10,000	2.71	2.93	2.93	8.1%
15,000	3.49	3.51	3.51	0.6%
25,000	4.27	4.21	4.21	-1.4%
100,000	6.31	5.97	5.97	-5.4%
150,000	7.67	6.92	6.92	-9.8%
200,000	9.12	7.74	7.74	-15.1%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES

HOMEOWNER DWELLINGS
ADDITIONAL LIMITS / DEDUCTIBLE

Coverage C	Indicated Relativity						
CHOICE	5,000	25,000	50,000	75,000	100,000	150,000	200,000
5%	1.09	2.64	3.39	3.71	4.07	4.34	4.47
10%	1.04	2.35	2.92	3.08	3.24	3.36	3.67
15%	1.00	2.15	2.58	2.71	2.81	2.85	2.93
20%	0.96	1.98	2.30	2.35	2.45	2.56	2.67
25%	0.93	1.84	2.07	2.10	2.14	2.23	2.25

Coverage C	Selected Relativity						
CHOICE	5,000	25,000	50,000	75,000	100,000	150,000	200,000
5%	1.09	2.64	3.39	3.71	4.07	4.34	4.47
10%	1.04	2.35	2.92	3.08	3.24	3.36	3.67
15%	1.00	2.15	2.58	2.71	2.81	2.85	2.93
20%	0.96	1.98	2.30	2.35	2.45	2.56	2.67
25%	0.93	1.84	2.07	2.10	2.14	2.23	2.25

Coverage C	Current Relativity						
CHOICE	5,000	25,000	50,000	75,000	100,000	150,000	200,000
5%	1.08	2.55	3.39	3.98	4.48	5.15	5.76
10%	1.04	2.29	2.92	3.34	3.68	4.10	4.48
15%	1.00	2.08	2.57	2.86	3.11	3.37	3.62
20%	0.97	1.91	2.28	2.49	2.67	2.83	3.00
25%	0.94	1.76	2.04	2.19	2.32	2.42	2.52

Coverage C	Selected Change						
CHOICE	5,000	25,000	50,000	75,000	100,000	150,000	200,000
5%	0.9%	3.5%	0.0%	-6.8%	-9.2%	-15.7%	-22.4%
10%	0.0%	2.6%	0.0%	-7.8%	-12.0%	-18.0%	-18.1%
15%	0.0%	3.4%	0.4%	-5.2%	-9.6%	-15.4%	-19.1%
20%	-1.0%	3.7%	0.9%	-5.6%	-8.2%	-9.5%	-11.0%
25%	-1.1%	4.5%	1.5%	-4.1%	-7.8%	-7.9%	-10.7%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
MANUFACTURED HOMES (MOBILEHOMES)
COVERAGE A - 15% DEDUCTIBLE

Territory	Current Rate per $1,000	Indicated Rate per $1,000	Selected Rate per $1,000 Year 1	Year 2	Year 3	Overall Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)
						(6) / (2) - 1.0
1	0.44	0.27	0.27	0.27	0.27	-38.4%
2	2.61	3.05	3.00	3.05	3.05	17.0%
3	1.31	2.12	1.58	1.85	2.12	62.0%
5	2.32	2.61	2.61	2.61	2.61	12.3%
6	2.05	2.18	2.18	2.18	2.18	6.1%
7	1.33	1.49	1.49	1.49	1.49	12.3%
8	2.12	1.40	1.40	1.40	1.40	-33.9%
11	2.12	1.61	1.61	1.61	1.61	-24.0%
12	1.91	1.34	1.34	1.34	1.34	-29.9%
13	1.11	0.67	0.67	0.67	0.67	-39.6%
15	1.14	0.95	0.95	0.95	0.95	-16.7%
16	0.40	2.06	0.95	1.50	2.06	414.2%
18	0.52	0.34	0.34	0.34	0.34	-35.0%
19	1.16	1.31	1.31	1.31	1.31	12.9%
20	1.95	2.85	2.25	2.55	2.85	46.2%
21	2.11	1.60	1.60	1.60	1.60	-24.1%
22	1.97	3.70	2.54	3.12	3.70	88.1%
23	1.49	1.08	1.08	1.08	1.08	-27.5%
24	1.33	1.29	1.29	1.29	1.29	-2.6%
25	1.31	1.79	1.51	1.71	1.79	36.6%
26	1.98	2.45	2.27	2.45	2.45	24.0%
27	0.42	0.55	0.49	0.55	0.55	30.3%
28	0.39	0.85	0.54	0.69	0.85	118.0%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
MANUFACTURED HOMES (MOBILEHOMES)
COVERAGE C - $5,000, 15% DEDUCTIBLE

			Selected Rate per Policy			Overall	
Territory	Current Rate per policy	Indicated Rate per policy	Year 1	Year 2	Year 3	Percentage Change	Premium Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	4.58	2.53	3.00	3.00	3.00	-34.5%	(1.58)
2	23.42	28.75	27.00	29.00	29.00	23.8%	5.58
3	14.60	19.96	17.00	19.00	20.00	37.0%	5.40
5	25.22	24.62	25.00	25.00	25.00	-0.9%	(0.22)
6	22.82	20.62	21.00	21.00	21.00	-8.0%	(1.82)
7	15.07	14.02	14.00	14.00	14.00	-7.1%	(1.07)
8	23.03	13.18	13.00	13.00	13.00	-43.6%	(10.03)
11	25.68	15.15	15.00	15.00	15.00	-41.6%	(10.68)
12	24.09	12.69	13.00	13.00	13.00	-46.0%	(11.09)
13	17.00	6.28	6.00	6.00	6.00	-64.7%	(11.00)
15	16.00	8.98	9.00	9.00	9.00	-43.8%	(7.00)
16	4.43	19.41	9.00	14.00	19.00	329.3%	14.57
18	7.40	3.20	3.00	3.00	3.00	-59.4%	(4.40)
19	14.82	12.34	12.00	12.00	12.00	-19.0%	(2.82)
20	24.89	26.91	27.00	27.00	27.00	8.5%	2.11
21	27.00	15.06	15.00	15.00	15.00	-44.4%	(12.00)
22	25.04	34.89	29.00	33.00	35.00	39.8%	9.96
23	21.00	10.17	10.00	10.00	10.00	-52.4%	(11.00)
24	16.81	12.15	12.00	12.00	12.00	-28.6%	(4.81)
25	12.89	16.87	15.00	17.00	17.00	31.9%	4.11
26	25.90	23.16	23.00	23.00	23.00	-11.2%	(2.90)
27	4.47	5.20	5.00	5.00	5.00	11.8%	0.53
28	4.00	8.00	5.00	6.00	8.00	100.0%	4.00

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
MANUFACTURED HOMES (MOBILEHOMES)
CHOICE COVERAGE C - $5,000, 15% DEDUCTIBLE

Territory	Current Rate per policy	Indicated Rate per policy	Selected Rate per Policy Year 1	Selected Rate per Policy Year 2	Selected Rate per Policy Year 3	Overall Percentage Change	Overall Premium Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	8.01	5.30	6.00	6.00	6.00	-25.1%	(2.01)
2	40.29	60.26	47.00	54.00	60.00	48.9%	19.71
3	25.31	41.84	31.00	37.00	42.00	65.9%	16.69
5	44.12	51.60	51.00	52.00	52.00	17.9%	7.88
6	39.69	43.22	43.00	43.00	43.00	8.4%	3.31
7	26.11	29.39	29.00	29.00	29.00	11.1%	2.89
8	40.08	27.61	28.00	28.00	28.00	-30.1%	(12.08)
11	45.22	31.76	32.00	32.00	32.00	-29.2%	(13.22)
12	41.23	26.59	27.00	27.00	27.00	-34.5%	(14.23)
13	29.00	13.17	13.00	13.00	13.00	-55.2%	(16.00)
15	27.00	18.81	19.00	19.00	19.00	-29.6%	(8.00)
16	7.65	40.67	19.00	30.00	41.00	436.2%	33.35
18	12.38	6.71	7.00	7.00	7.00	-43.5%	(5.38)
19	25.37	25.86	26.00	26.00	26.00	2.5%	0.63
20	42.41	56.41	49.00	55.00	56.00	32.0%	13.59
21	46.00	31.57	32.00	32.00	32.00	-30.4%	(14.00)
22	42.66	73.11	53.00	63.00	73.00	71.1%	30.34
23	36.00	21.31	21.00	21.00	21.00	-41.7%	(15.00)
24	28.40	25.47	25.00	25.00	25.00	-12.0%	(3.40)
25	23.78	35.36	28.00	32.00	35.00	47.2%	11.22
26	44.10	48.53	49.00	49.00	49.00	11.1%	4.90
27	7.82	10.90	9.00	10.00	11.00	40.7%	3.18
28	7.00	16.77	10.00	13.00	17.00	142.9%	10.00

Territory 1 base rate is selected as $6 instead of $5 to avoid a premium reversal with Standard C after deductible factors are applied.

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
MANUFACTURED HOMES (MOBILEHOMES)
COVERAGE D - $1,500

Territory	Current Rate per policy	Indicated Rate per policy	Selected Rate per Policy Year 1	Year 2	Year 3	Overall Percentage Change	Overall Premium Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	3.21	1.47	1.00	1.00	1.00	-68.9%	(2.21)
2	11.32	16.73	13.00	15.00	17.00	50.1%	5.68
3	7.82	11.61	9.00	10.00	12.00	53.5%	4.18
5	10.63	14.32	12.00	14.00	14.00	31.7%	3.37
6	9.93	12.00	11.00	12.00	12.00	20.8%	2.07
7	7.96	8.16	8.00	8.00	8.00	0.4%	0.04
8	10.13	7.66	8.00	8.00	8.00	-21.1%	(2.13)
11	9.99	8.81	9.00	9.00	9.00	-9.9%	(0.99)
12	10.00	7.38	7.00	7.00	7.00	-30.0%	(3.00)
13	7.00	3.65	4.00	4.00	4.00	-42.9%	(3.00)
15	6.00	5.22	5.00	5.00	5.00	-16.7%	(1.00)
16	3.01	11.29	6.00	9.00	11.00	265.3%	7.99
18	3.43	1.86	2.00	2.00	2.00	-41.7%	(1.43)
19	6.55	7.18	7.00	7.00	7.00	6.9%	0.45
20	10.37	15.66	12.00	14.00	16.00	54.3%	5.63
21	11.00	8.76	9.00	9.00	9.00	-18.2%	(2.00)
22	10.41	20.29	14.00	17.00	20.00	92.1%	9.59
23	7.00	5.91	6.00	6.00	6.00	-14.3%	(1.00)
24	6.30	7.07	7.00	7.00	7.00	11.2%	0.70
25	5.96	9.82	7.00	8.00	10.00	67.7%	4.04
26	9.60	13.47	11.00	12.00	13.00	35.4%	3.40
27	3.18	3.02	3.00	3.00	3.00	-5.5%	(0.18)
28	3.00	4.65	4.00	5.00	5.00	66.7%	2.00

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
MANUFACTURED HOMES (MOBILEHOMES)
BUILDING CODE UPGRADE - $20,000

Territory	Current Rate per policy	Indicated Rate per policy	Selected Rate per Policy Year 1	Selected Rate per Policy Year 2	Selected Rate per Policy Year 3	Overall Percentage Change	Overall Premium Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	3.49	1.90	2.00	2.00	2.00	-42.7%	(1.49)
2	22.42	29.31	26.00	29.00	29.00	29.3%	6.58
3	10.71	22.13	14.00	18.00	22.00	105.4%	11.29
5	21.22	26.50	24.00	26.00	26.00	22.5%	4.78
6	18.85	22.28	22.00	22.00	22.00	16.7%	3.15
7	11.00	13.84	13.00	14.00	14.00	27.3%	3.00
8	19.44	12.18	12.00	12.00	12.00	-38.3%	(7.44)
11	20.54	16.04	16.00	16.00	16.00	-22.1%	(4.54)
12	18.14	12.83	13.00	13.00	13.00	-28.3%	(5.14)
13	11.00	6.24	6.00	6.00	6.00	-45.5%	(5.00)
15	11.00	9.82	10.00	10.00	10.00	-9.1%	(1.00)
16	3.22	22.67	10.00	17.00	23.00	614.2%	19.78
18	4.99	2.64	3.00	3.00	3.00	-39.8%	(1.99)
19	10.55	12.13	12.00	12.00	12.00	13.8%	1.45
20	18.31	28.87	22.00	26.00	29.00	58.4%	10.69
21	20.00	15.52	16.00	16.00	16.00	-20.0%	(4.00)
22	18.43	40.15	26.00	33.00	40.00	117.1%	21.57
23	15.00	10.96	11.00	11.00	11.00	-26.7%	(4.00)
24	12.59	13.53	14.00	14.00	14.00	11.2%	1.41
25	11.89	18.67	14.00	16.00	19.00	59.9%	7.11
26	19.20	26.39	22.00	25.00	26.00	35.4%	6.80
27	3.39	5.08	4.00	5.00	5.00	47.6%	1.61
28	3.00	9.74	5.00	7.00	10.00	233.3%	7.00

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
MANUFACTURED HOMES (MOBILEHOMES)

DEDUCTIBLE FACTORS

Coverages A & BCU	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
5%	1.86	1.75	1.75	-5.9%
10%	1.34	1.30	1.30	-3.0%
15%	1.00	1.00	1.00	0.0%
20%	0.82	0.83	0.83	1.2%
25%	0.68	0.71	0.71	4.4%

Coverage C Standard	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
5%	1.86	1.38	1.38	-25.8%
10%	1.34	1.17	1.17	-12.7%
15%	1.00	1.00	1.00	0.0%
20%	0.82	0.89	0.89	8.5%
25%	0.68	0.80	0.80	17.6%

Coverage C CHOICE	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
5%	1.32	1.26	1.26	-4.5%
10%	1.14	1.12	1.12	-1.8%
15%	1.00	1.00	1.00	0.0%
20%	0.92	0.92	0.92	0.0%
25%	0.85	0.86	0.86	1.2%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
MANUFACTURED HOMES (MOBILEHOMES)

ADDITIONAL LIMITS

Coverage C Standard	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
5,000	1.00	1.00	1.00	0.0%
25,000	2.17	2.44	2.44	12.4%
50,000	2.72	3.08	3.08	13.2%
75,000	3.07	3.45	3.45	12.4%
100,000	3.95	3.98	3.98	0.8%
150,000	5.58	4.50	4.50	-19.4%
200,000	7.88	5.61	5.61	-28.8%

Coverage C CHOICE	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
5,000	1.00	1.00	1.00	0.0%
25,000	1.64	1.47	1.47	-10.4%
50,000	1.84	1.73	1.73	-6.0%
75,000	1.97	1.89	1.89	-4.1%
100,000	2.20	2.17	2.17	-1.4%
150,000	2.80	2.55	2.55	-8.9%
200,000	3.53	3.12	3.12	-11.6%

Coverage D	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
1,500	1.00	1.00	1.00	0.0%
10,000	2.03	2.27	2.27	11.8%
15,000	2.66	2.94	2.94	10.5%
25,000	3.42	3.76	3.76	9.9%
100,000	7.15	7.85	7.85	9.8%
150,000	10.89	11.94	11.94	9.6%
200,000	14.62	16.03	16.03	9.6%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
MANUFACTURED HOMES (MOBILEHOMES)

EARTHQUAKE RESISTANT BRACING SYSTEM (ERBS)

ERBS	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
Y	0.77	0.79	0.79	2.6%
N	1.00	1.00	1.00	0.0%

AGE OF CONSTRUCTION

Age	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
Pre-1975	1.00	1.06	1.06	6.0%
1975 - 1994	1.00	0.98	0.98	-2.0%
Post-1994	1.00	0.91	0.91	-9.0%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
CONDOS / RENTERS - COVERAGE C - $5,000 - 15% DEDUCTIBLE

			Selected Rate per Policy			Overall	
Territory	Current Rate per policy	Indicated Rate per policy	Year 1	Year 2	Year 3	Percentage Change	Premium Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	7.47	4.93	5.00	5.00	5.00	-33.1%	(2.47)
2	32.71	40.50	38.00	40.00	40.00	22.3%	7.29
3	21.56	15.79	16.00	16.00	16.00	-25.8%	(5.56)
5	33.00	31.41	31.00	31.00	31.00	-6.1%	(2.00)
6	32.99	27.40	27.00	27.00	27.00	-18.2%	(5.99)
7	23.01	16.87	17.00	17.00	17.00	-26.1%	(6.01)
8	31.65	17.22	17.00	17.00	17.00	-46.3%	(14.65)
11	31.30	20.19	20.00	20.00	20.00	-36.1%	(11.30)
12	33.00	18.95	19.00	19.00	19.00	-42.4%	(14.00)
13	23.00	10.54	11.00	11.00	11.00	-52.2%	(12.00)
15	23.00	14.44	14.00	14.00	14.00	-39.1%	(9.00)
16	7.00	19.24	11.00	15.00	19.00	171.4%	12.00
18	8.42	5.62	6.00	6.00	6.00	-28.8%	(2.42)
19	23.00	17.66	18.00	18.00	18.00	-21.7%	(5.00)
20	30.04	35.63	35.00	36.00	36.00	19.9%	5.96
21	33.00	26.81	27.00	27.00	27.00	-18.2%	(6.00)
22	32.67	38.33	38.00	38.00	38.00	16.3%	5.33
23	28.22	13.99	14.00	14.00	14.00	-50.4%	(14.22)
24	23.00	19.43	19.00	19.00	19.00	-17.4%	(4.00)
25	22.87	21.22	21.00	21.00	21.00	-8.2%	(1.87)
26	23.00	28.17	26.00	28.00	28.00	21.7%	5.00
27	7.87	5.60	6.00	6.00	6.00	-23.7%	(1.87)
28	7.00	6.69	7.00	7.00	7.00	0.0%	-

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
CONDOS / RENTERS - COVERAGE D - $1,500

						Overall	
	Current	Indicated	Selected Rate per Policy			Percentage	Premium
Territory	Rate per policy	Rate per policy	Year 1	Year 2	Year 3	Change	Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	5.20	3.34	3.00	3.00	3.00	-42.4%	(2.20)
2	15.88	18.43	18.00	18.00	18.00	13.4%	2.12
3	11.37	9.35	9.00	9.00	9.00	-20.8%	(2.37)
5	16.00	19.13	18.00	19.00	19.00	18.8%	3.00
6	16.00	13.07	13.00	13.00	13.00	-18.7%	(3.00)
7	12.00	10.36	10.00	10.00	10.00	-16.7%	(2.00)
8	15.46	10.32	10.00	10.00	10.00	-35.3%	(5.46)
11	15.32	12.32	12.00	12.00	12.00	-21.7%	(3.32)
12	16.00	11.84	12.00	12.00	12.00	-25.0%	(4.00)
13	12.00	6.48	6.00	6.00	6.00	-50.0%	(6.00)
15	12.00	8.25	8.00	8.00	8.00	-33.3%	(4.00)
16	5.00	11.84	7.00	9.00	12.00	140.0%	7.00
18	5.62	4.20	4.00	4.00	4.00	-28.9%	(1.62)
19	12.00	12.56	13.00	13.00	13.00	8.3%	1.00
20	14.81	19.94	17.00	19.00	20.00	35.0%	5.19
21	16.00	12.77	13.00	13.00	13.00	-18.8%	(3.00)
22	15.87	19.62	18.00	20.00	20.00	26.0%	4.13
23	14.09	7.88	8.00	8.00	8.00	-43.2%	(6.09)
24	12.00	10.11	10.00	10.00	10.00	-16.7%	(2.00)
25	11.94	12.66	13.00	13.00	13.00	8.9%	1.06
26	12.00	14.58	14.00	15.00	15.00	25.0%	3.00
27	5.37	3.66	4.00	4.00	4.00	-25.5%	(1.37)
28	5.00	3.52	4.00	4.00	4.00	-20.0%	(1.00)

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
CONDOS - COVERAGE A - $25,000 - 15% DEDUCTIBLE

Territory	Current Rate per policy	Indicated Rate per policy	Selected Rate per Policy Year 1	Selected Rate per Policy Year 2	Selected Rate per Policy Year 3	Overall Percentage Change	Overall Premium Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	35.26	27.15	27.00	27.00	27.00	-23.4%	(8.26)
2	199.00	223.19	223.00	223.00	223.00	12.1%	24.00
3	113.62	86.20	86.00	86.00	86.00	-24.3%	(27.62)
5	199.00	244.55	229.00	245.00	245.00	23.1%	46.00
6	199.00	152.98	153.00	153.00	153.00	-23.1%	(46.00)
7	125.10	112.54	113.00	113.00	113.00	-9.7%	(12.10)
8	182.66	108.43	108.00	108.00	108.00	-40.9%	(74.66)
11	188.73	141.63	142.00	142.00	142.00	-24.8%	(46.73)
12	199.00	128.65	129.00	129.00	129.00	-35.2%	(70.00)
13	125.00	58.62	59.00	59.00	59.00	-52.8%	(66.00)
15	125.00	104.98	105.00	105.00	105.00	-16.0%	(20.00)
16	33.00	113.89	60.00	87.00	114.00	245.5%	81.00
18	40.19	35.03	35.00	35.00	35.00	-12.9%	(5.19)
19	125.00	127.00	127.00	127.00	127.00	1.6%	2.00
20	176.15	245.52	203.00	229.00	246.00	39.7%	69.85
21	199.00	171.19	171.00	171.00	171.00	-14.1%	(28.00)
22	195.96	287.83	227.00	258.00	288.00	47.0%	92.04
23	157.63	82.57	83.00	83.00	83.00	-47.3%	(74.63)
24	125.00	147.95	144.00	148.00	148.00	18.4%	23.00
25	125.00	181.11	144.00	163.00	181.00	44.8%	56.00
26	125.00	192.91	148.00	171.00	193.00	54.4%	68.00
27	33.97	30.65	31.00	31.00	31.00	-8.7%	(2.97)
28	-	-	105.00	105.00	105.00		

NOTE: There are no Condo policies with Coverage A in Territory 28. The selected rate is the same as the rate for Territory 15 noting that, in the case of homeowners, Territory 28 and Territory 15 have similar rate levels.

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
CONDOS - COVERAGE E - $50,000 - 15% DEDUCTIBLE

Territory	Current Rate per policy	Indicated Rate per policy	Selected Rate per Policy Year 1	Selected Rate per Policy Year 2	Selected Rate per Policy Year 3	Overall Percentage Change	Overall Premium Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(6) / (2) - 1.0	(6) - (2)
1	142.63	107.79	108.00	108.00	108.00	-24.3%	(34.63)
2	661.00	656.18	656.00	656.00	656.00	-0.8%	(5.00)
3	395.14	314.98	315.00	315.00	315.00	-20.3%	(80.14)
5	661.00	782.74	760.00	783.00	783.00	18.5%	122.00
6	661.00	496.07	496.00	496.00	496.00	-25.0%	(165.00)
7	438.33	389.49	389.00	389.00	389.00	-11.3%	(49.33)
8	591.28	391.98	392.00	392.00	392.00	-33.7%	(199.28)
11	630.78	474.43	474.00	474.00	474.00	-24.9%	(156.78)
12	661.00	448.72	449.00	449.00	449.00	-32.1%	(212.00)
13	438.00	223.46	223.00	223.00	223.00	-49.1%	(215.00)
15	438.00	339.83	340.00	340.00	340.00	-22.4%	(98.00)
16	136.00	353.53	209.00	282.00	354.00	160.3%	218.00
18	150.27	141.39	141.00	141.00	141.00	-6.2%	(9.27)
19	438.00	449.68	450.00	450.00	450.00	2.7%	12.00
20	578.94	785.85	666.00	753.00	786.00	35.8%	207.06
21	661.00	589.97	590.00	590.00	590.00	-10.7%	(71.00)
22	652.09	932.66	750.00	848.00	933.00	43.1%	280.91
23	536.88	299.11	299.00	299.00	299.00	-44.3%	(237.88)
24	438.00	480.97	481.00	481.00	481.00	9.8%	43.00
25	438.00	534.05	504.00	534.00	534.00	21.9%	96.00
26	438.00	579.39	504.00	570.00	579.00	32.2%	141.00
27	137.78	134.40	134.00	134.00	134.00	-2.7%	(3.78)
28	-	-	340.00	340.00	340.00		

NOTE: There are no Condo policies with Coverage E in Territory 28. The selected rate is the same as the rate for Territory 15 noting that, in the case of homeowners, Territory 28 and Territory 15 have similar rate levels.

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
CONDOS / RENTERS

DEDUCTIBLE FACTORS

Condo Coverage A (1)	Current Relativity (2)	Indicated Relativity (3)	Selected Relativity (4)	Change (5)
5%	1.33	1.38	1.38	3.8%
10%	1.14	1.16	1.16	1.8%
15%	1.00	1.00	1.00	0.0%
20%	0.91	0.90	0.90	-1.1%
25%	0.83	0.82	0.82	-1.2%

Condo / Renter Coverage C (1)	Current Relativity (2)	Indicated Relativity (3)	Selected Relativity (4)	Change (5)
5%	2.24	2.05	2.05	-8.5%
10%	1.48	1.40	1.40	-5.4%
15%	1.00	1.00	1.00	0.0%
20%	0.75	0.80	0.80	6.7%
25%	0.57	0.65	0.65	14.0%

Condo Coverage E (1)	Current Relativity (2)	Indicated Relativity (3)	Selected Relativity (4)	Change (5)
5%	1.28	1.26	1.26	-1.6%
10%	1.12	1.11	1.11	-0.9%
15%	1.00	1.00	1.00	0.0%
20%	0.92	0.93	0.93	1.1%
25%	0.86	0.87	0.87	1.2%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
CONDO / RENTERS

ADDITIONAL LIMITS

Condo Coverage A (1)	Current Relativity (2)	Indicated Relativity (3)	Selected Relativity (4)	Change (5)
25,000	1.00	1.00	1.00	0.0%
50,000	1.67	1.82	1.82	9.0%
75,000	2.31	2.77	2.77	19.9%
100,000	2.86	3.40	3.40	18.9%

Condo / Renter Coverage C (1)	Current Relativity (2)	Indicated Relativity (3)	Selected Relativity (4)	Change (5)
5,000	1.00	1.00	1.00	0.0%
25,000	1.32	1.58	1.58	19.7%
50,000	2.95	3.49	3.49	18.3%
75,000	4.59	5.40	5.40	17.6%
100,000	6.22	7.31	7.31	17.5%
150,000	9.50	11.13	11.13	17.2%
200,000	12.77	14.95	14.95	17.1%

Condo / Renter Coverage D (1)	Current Relativity (2)	Indicated Relativity (3)	Selected Relativity (4)	Change (5)
1,500	1.00	1.00	1.00	0.0%
10,000	2.74	2.53	2.53	-7.7%
15,000	3.58	3.29	3.29	-8.1%
25,000	4.63	4.22	4.22	-8.9%
50,000	9.59	8.76	8.76	-8.7%
75,000	14.39	13.31	13.31	-7.5%
100,000	19.41	17.85	17.85	-8.0%

CALIFORNIA EARTHQUAKE AUTHORITY

RATE CLASSIFICATION RELATIVITIES
CONDO / RENTERS

ADDITIONAL LIMITS

Condo Coverage E	Current Relativity	Indicated Relativity	Selected Relativity	Change
(1)	(2)	(3)	(4)	(5)
25,000	0.63	0.60	0.60	-4.8%
50,000	1.00	1.00	1.00	0.0%
75,000	1.62	1.58	1.58	-2.5%
100,000	2.13	2.08	2.08	-2.3%

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

INSURER'S RATEMAKING CALCULATIONS

The method used in the development of the rate level indication relies primarily on modeled earthquake losses. Page 3 shows the development of the total needed premium and the resulting loss cost multipliers.

(1) Adjusted Average Annual Losses
Modeled losses for the CEA portfolio as of June 30, 2017 adjusted for policy features and growth.

(2) Loss Adjustment Expenses - Member Paid
Per the Participating Insurer Agreement, the CEA pays the participating insurers 9% of the loss for adjusting claims. Calculated as Line (1) x 9%.

(3) Loss Adjustment Expenses - CEA Paid
Estimated adjusting and other expense that the CEA pays. Calculated as Line (1) x .5%.

(4) Indicated Provision for Loss and Loss Adjustment Expense
Sum of lines (1), (2), and (3).

(5) Expenses - Participating Insurers
Per the Insurer Participation Agreement, the CEA pays the participating insurers 6% of the net written CEA premium attributable to the Participating Insurer, not including any loading for reinsurance, capital costs or producer commission.

(6) Premium, Net of Commission, Tax and Risk Financing Costs
Interim calculation in order to determine the proper load for the participating insurers expenses, line (5). Calculated as line (4) / (1.0 - 6%).

(7) Risk Financing Costs
Estimated cost of risk financing. See Exhibit 12.

(8) Recoveries
Estimated losses recovered from risk financing sources based on modeled losses.

(9) Reinsurance Brokerage Fees
The CEA pays its reinsurance intermediary fees per contract, not under a commission agreement.

(10) Annual Risk Capital Surcharge
Additional capital paid by new participating insurers subject to CIC 10089.16 (d).
Note: there are no monies due or expected.

(11) Estimated Net Cost of Risk Financing
Calculated as line (7) - line (8) + line (9) - line (10)

(12) Premium Net of Commissions and Tax
Calculated as line (6) + line (11)

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

INSURER'S RATEMAKING CALCULATIONS

(13) Commission
By regulation, the CEA pays 10% commission. Calculated as line (17) x 10%.

(14) CEA Operating Expenses
Calculated as line (17) x 6%.

(15) State Premium Tax
Calculated as line (17) x 2.35%.

(16) Underwriting Profit Provision
See Page 4.

(17) Total Premium
Calculated as the sum of lines (12) through (16).

(18) Loss Cost Multiplier
Calculated as line (17) / line (1).

(19) Selected Loss Cost Multiplier
Selection based on line (18).

(20) Filed Loss Cost Multiplier
Loss cost multiplier underlying current filed rates for basic and increased limits coverage.

(21) Change due to change in loss cost multiplier
Calculated as line (19) / line (20) - 1.0.

(22) Current Premium
Current annualized premium for June 30, 2017 portfolio

(23) Premium (loss) Trend Factor
Exhibit 5. Note the premium (loss) trend factor is already applied to the losses in line (1).

(24) Indicated rate change
Calculated as line (17) /[line (22) * line (23)] - 1.0

CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

INSURER'S RATEMAKING CALCULATIONS

(Thousands)

			Total	Basic Limits	Increased Limits
(1)	Adjusted Average Annual Loss		352,862	309,713	43,149
(2)	Loss Adjustment Expense - Member paid (1) X 9%	9%	31,758	27,874	3,883
(3)	Loss Adjustment Expense - CEA paid (1) X .5%	0.5%	1,764	1,549	216
(4)	Indicated Provision for Loss and LAE (1) + (2) + (3)		386,384	339,135	47,248
(5)	Expenses - Participating Insurers (6) x 6%	6%	24,663	21,647	3,016
(6)	Premium Net of Commission, Tax and Risk Financing Costs (4) / (1.0 - 6%)		411,047	360,782	50,264
(7)	Risk Financing Costs		444,487	346,643	97,844
(8)	Expected Recoveries		223,520	174,317	49,203
(9)	Reinsurance Brokerage Fees		2,800	2,184	616
(10)	Annual Risk Capital Surcharge		-	-	-
(11)	Estimated Net Cost of Risk Financing (7) - (8) + (9) - (10)		223,767	174,510	49,257
(12)	Premium Net of Commission and Tax (6) + (11)		634,814	535,292	99,522
(13)	Commission (17) x 10%	10%	77,748	65,559	12,189
(14)	CEA Operating Expense (17) x 6%	6.0%	46,649	39,336	7,313
(15)	State Premium Tax (17) x 2.35%	2.35%	18,271	15,406	2,864
(16)	Underwriting Profit Provision	0.0%	-	-	-
(17)	Total Premium (12) + (13) + (14) + (15) + (16)		777,482	655,594	121,888
(18)	Loss Cost Multiplier (17) / (1)		2.20	2.12	2.82
(19)	Selected Loss Cost Multiplier		2.20	2.12	2.82
(20)	Filed Loss Cost Multiplier			2.10	2.76
(21)	Change due to change in Loss Cost Multiplier (19) / (20) - 1.0			1.0%	2.0%
(22)	Current Premium		639,456		
(23)	Premium (loss) Trend Factor		1.210		
(24)	Indicated rate change (17) /[(22)*(23)] - 1.0		0.5%		

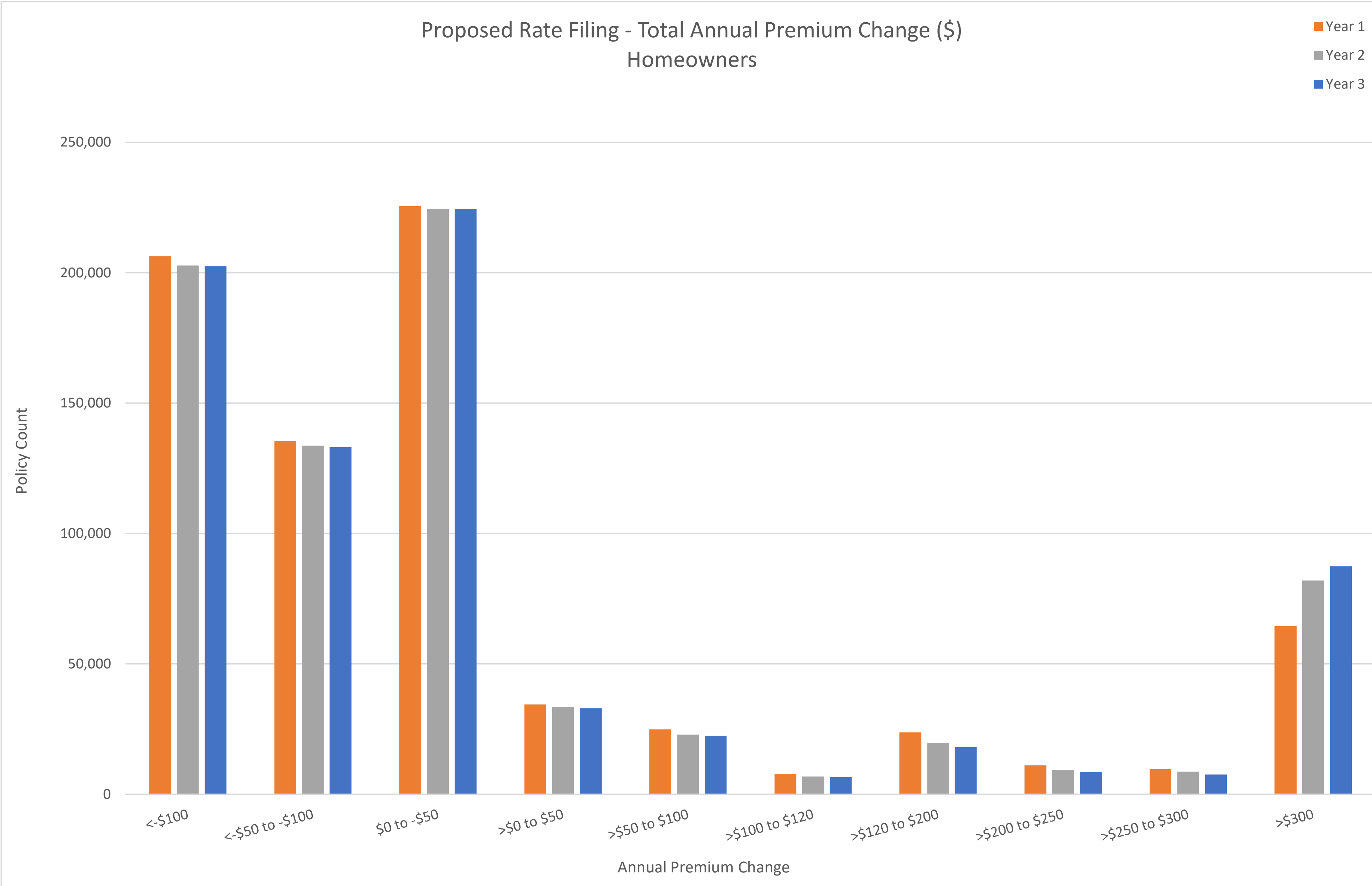
CALIFORNIA EARTHQUAKE AUTHORITY
RESIDENTIAL EARTHQUAKE

INSURER'S RATEMAKING CALCULATIONS

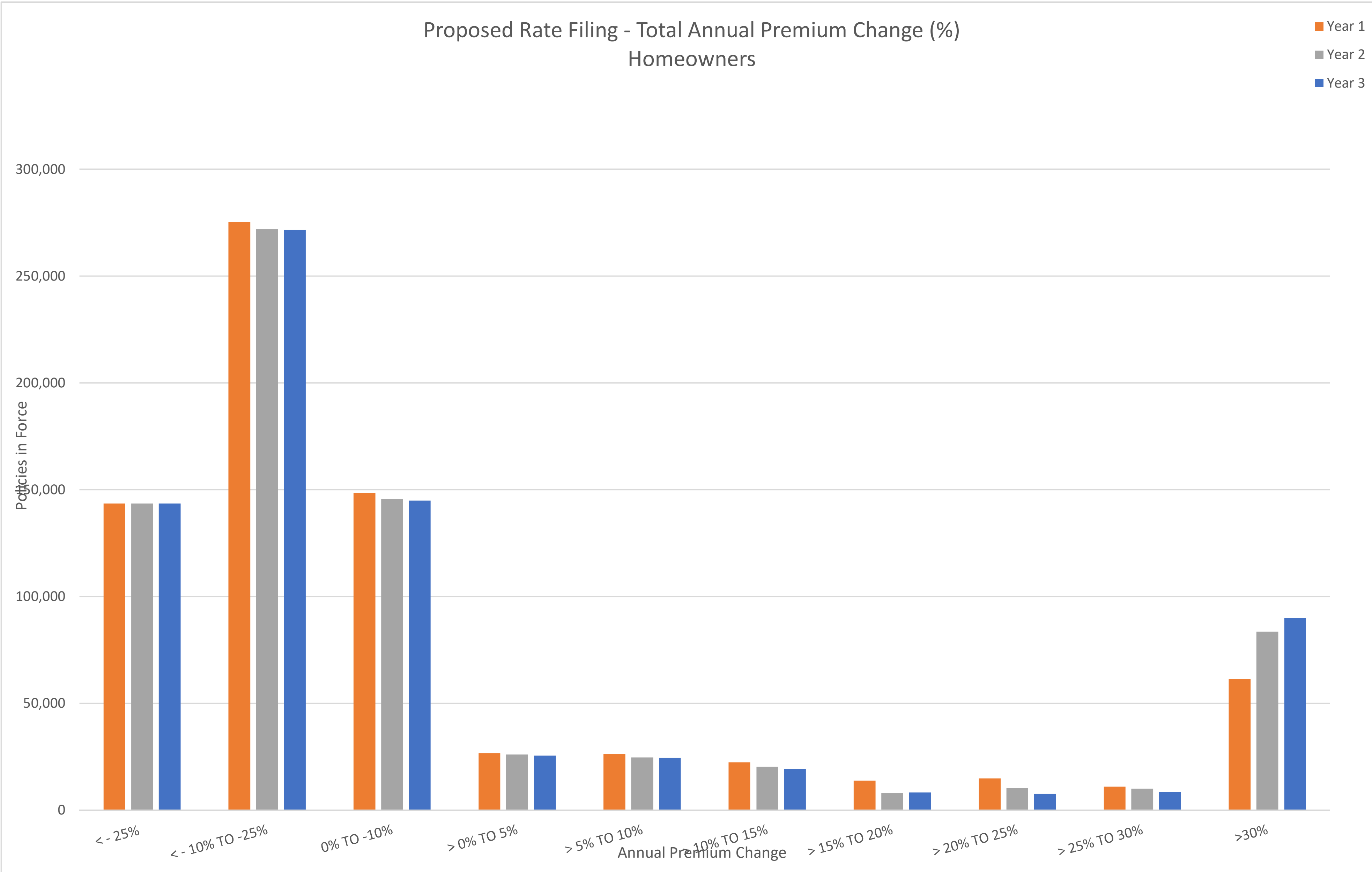
(Thousands)

(1)	Available Capital	5,478,906
(2)	Implied Rate of Return	2.40%
(3)	Target after-tax return	131,238
(4)	Unearned Premium Reserve	388,617
(5)	Loss and LAE Reserves	325,094
(6)	Investment Yield	2.20%
(7)	Return on Invested Assets	136,238
(8)	Mitigation Fund (lesser of 5% of (7) or $5M)	5,000
(9)	Expected Investment Income net of mitigation fund	131,238
(10)	Selected pre-tax underwriting profit provision	0.0%

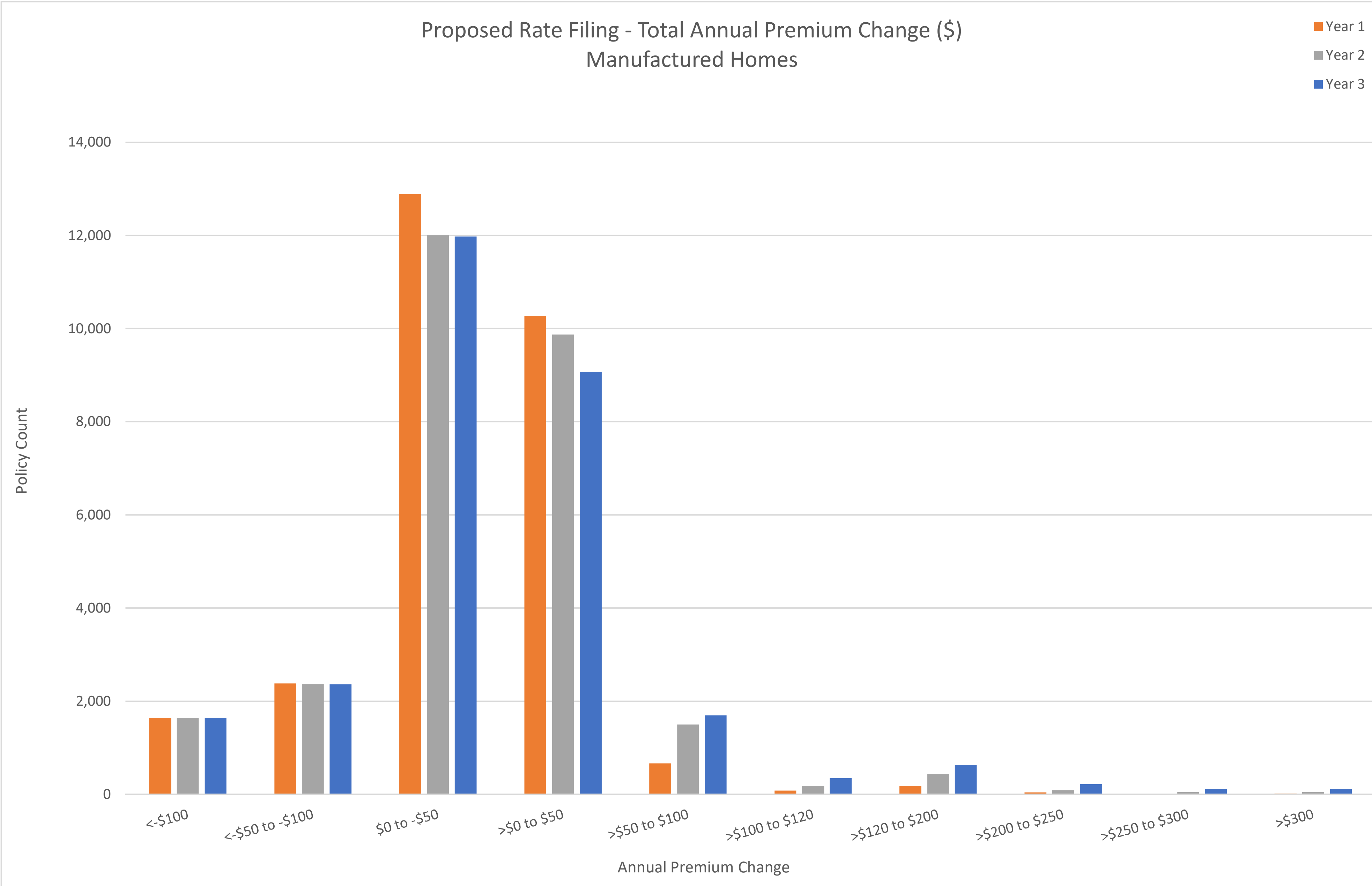
Notes:
(1) Projected CEA Capital at 7/1/2019 (assuming expected earthquake loss to CEA capital layer.)
(2) (1) / (9) The CEA retains its investment income in order to increase policyholder claims
(3) (1) * (2)
(4) 50% of projected net premium (Exhibit 21, page 3, line 17 less line 11 plus line 8)
(5) Expected Loss and LAE to CEA Capital layer
(6) CDI Exhibit 3.2 - Projected Yield and Federal Income Tax Rate on Investment Income
(7) (6) * [(1) + (4) + (5)]
(8) Per CIC 10089.37
(9) (7) - (8)

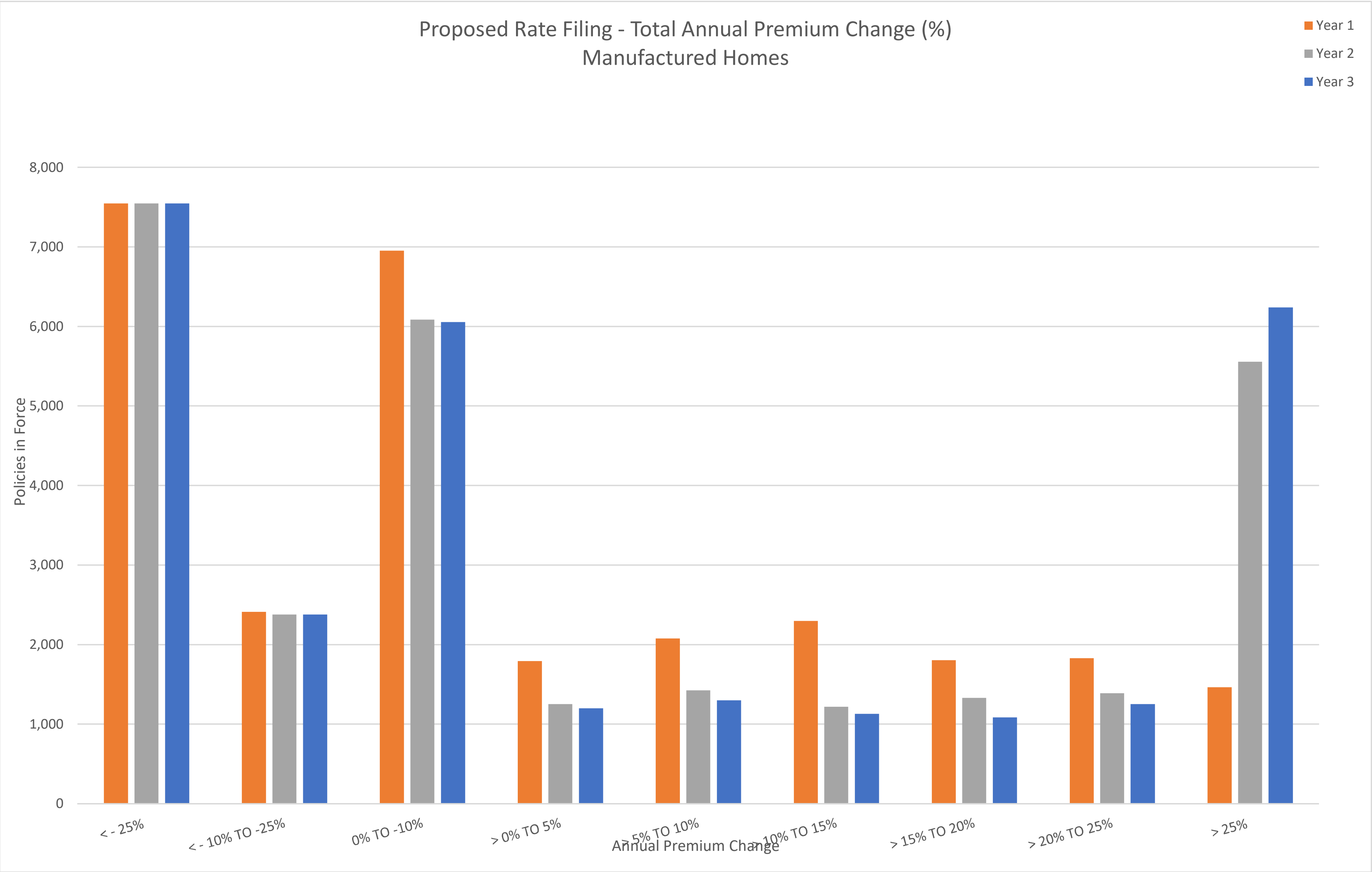


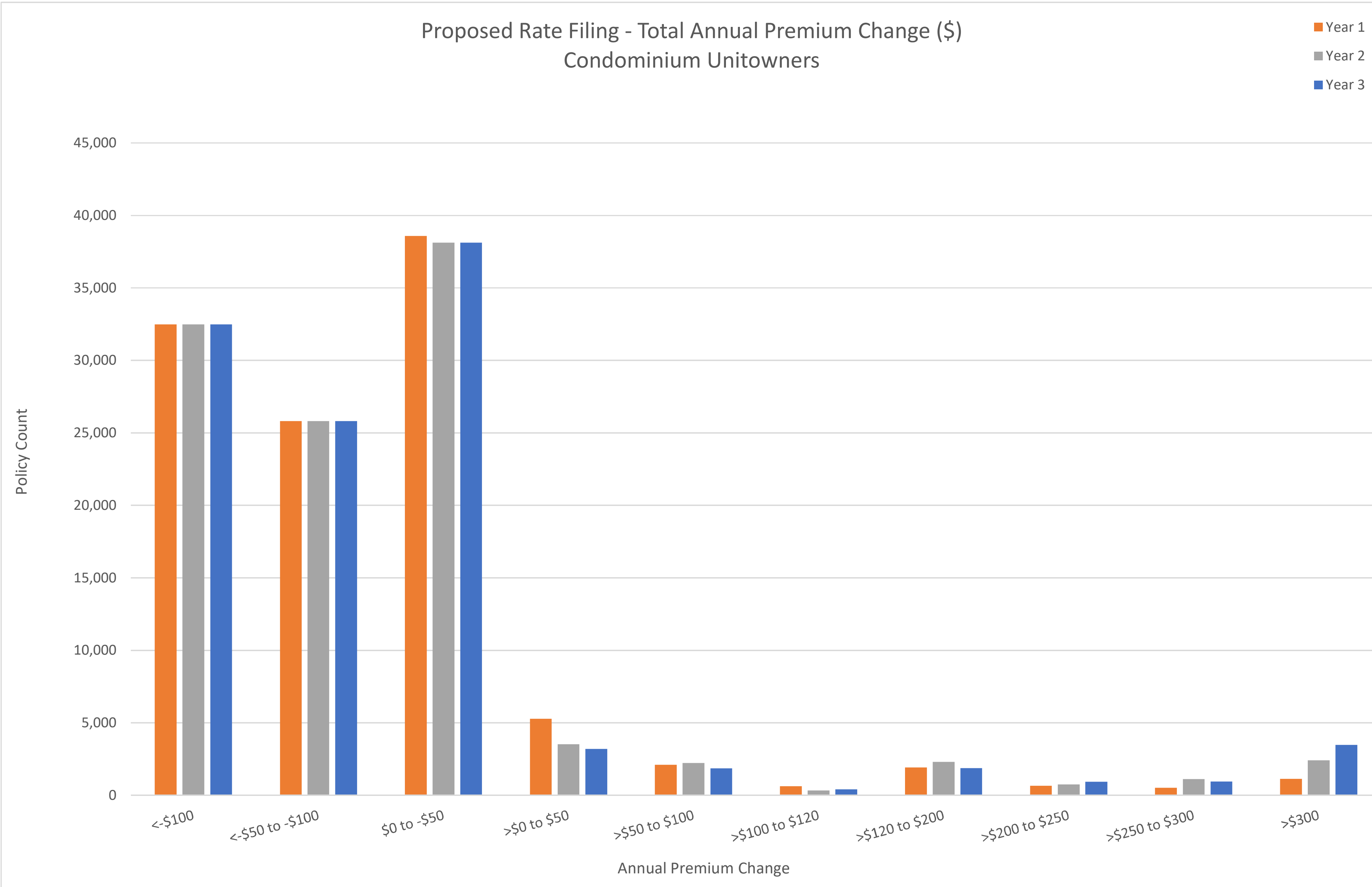
Proposed Rate Filing - Total Annual Premium Change ($)
Homeowners
Year 1
Year 2
Year 3
Policy Count
250,000
200,000
150,000
100,000
50,000
0
<-$100
<-$50 to -$100
$0 to -$50
>$0 to $50
>$50 to $100
>$100 to $120
>$120 to $200
>$200 to $250
>$250 to $300
>$300
Annual Premium Change



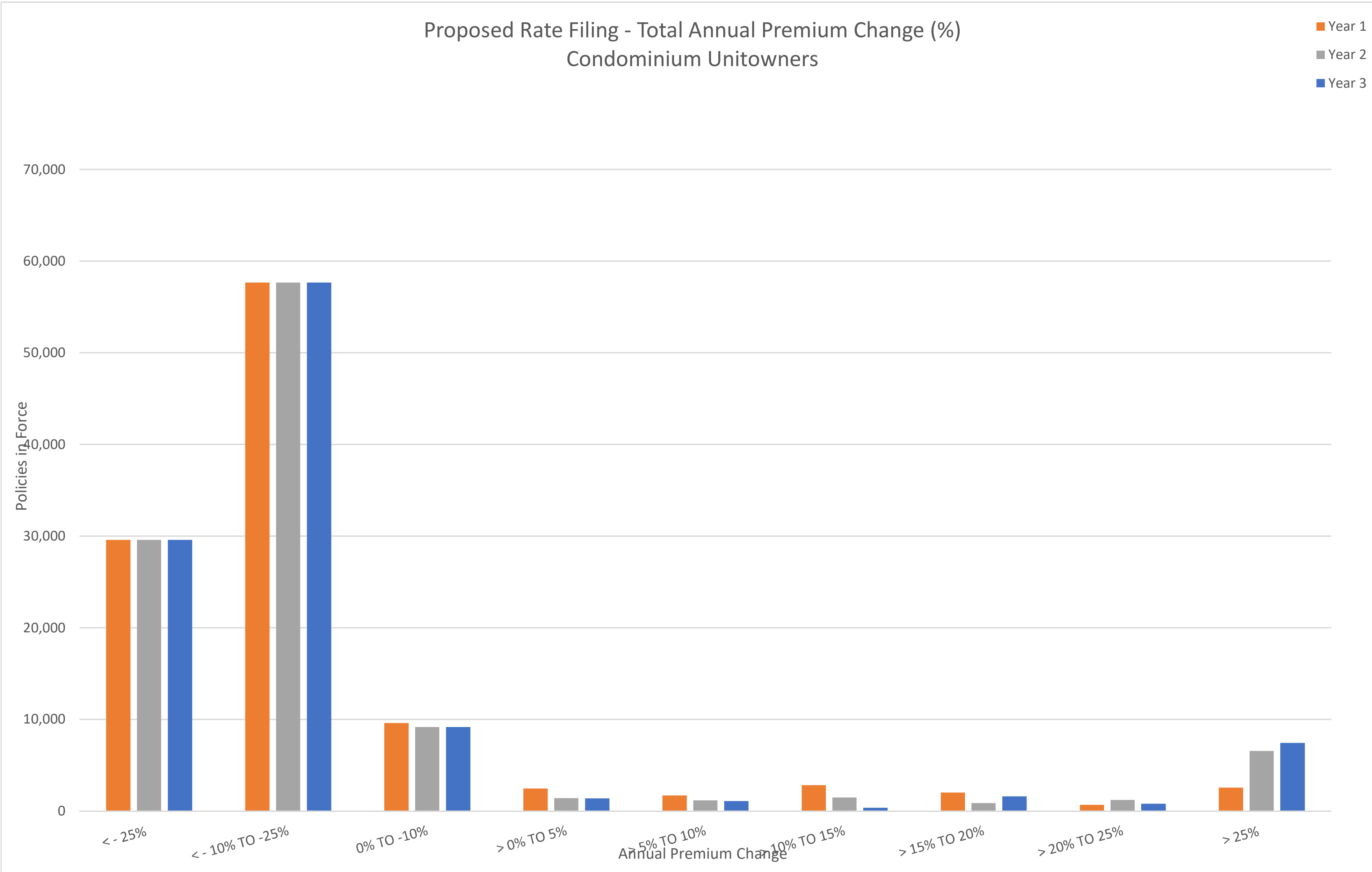
Proposed Rate Filing - Total Annual Premium Change (%)
Homeowners
Year 1
Year 2
Year 3
300,000
250,000
200,000
150,000
100,000
50,000
0
Policies in Force
< - 25%
< - 10% TO -25%
0% TO -10%
> 0% TO 5%
> 5% TO 10%
> 10% TO 15%
> 15% TO 20%
> 20% TO 25%
> 25% TO 30%
>30%
Annual Premium Change

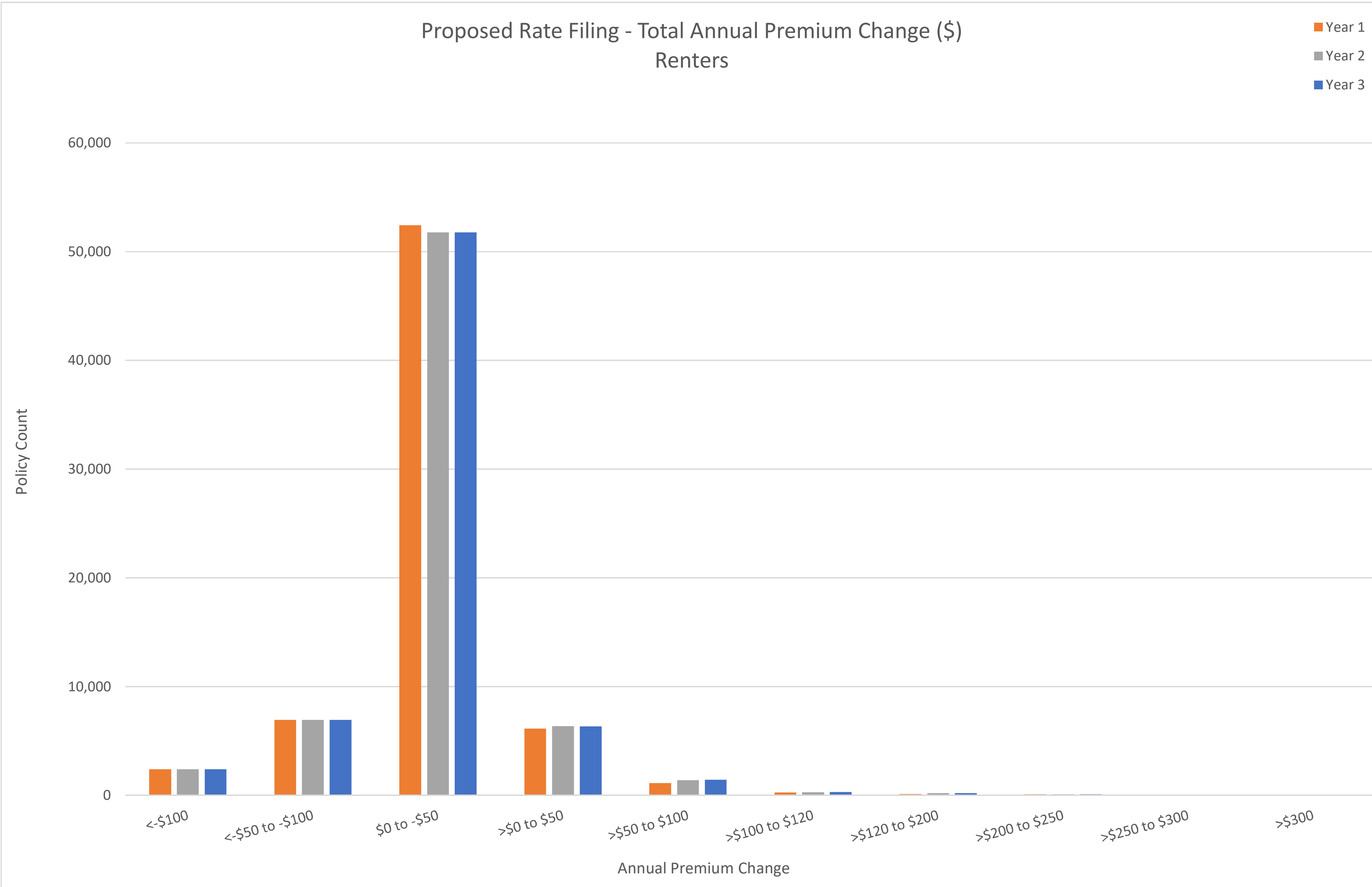

Proposed Rate Filing - Total Annual Premium Change ($)
Manufactured Homes
Year 1
Year 2
Year 3
Policy Count
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
<-$100
<-$50 to -$100
$0 to -$50
>$0 to $50
>$50 to $100
>$100 to $120
>$120 to $200
>$200 to $250
>$250 to $300
>$300
Annual Premium Change


Proposed Rate Filing - Total Annual Premium Change (%)
Manufactured Homes
Year 1
Year 2
Year 3
Policies in Force
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
< - 25%
< - 10% TO -25%
0% TO -10%
> 0% TO 5%
> 5% TO 10%
> 10% TO 15%
> 15% TO 20%
> 20% TO 25%
> 25%
Annual Premium Change

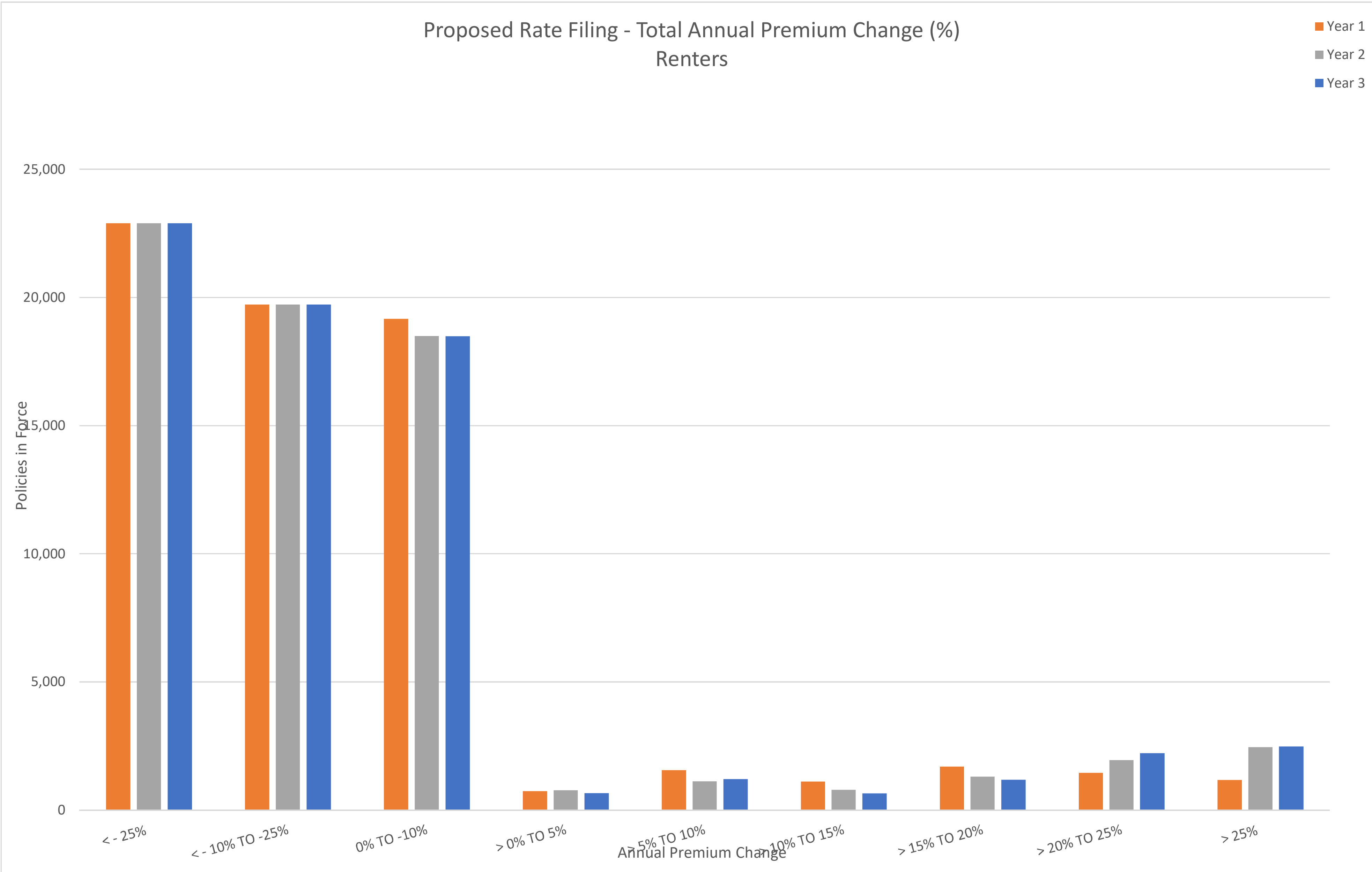


Proposed Rate Filing - Total Annual Premium Change ($)
Condominium Unitowners
Year 1
Year 2
Year 3
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Policy Count
<-$100
<-$50 to -$100
$0 to -$50
>$0 to $50
>$50 to $100
>$100 to $120
>$120 to $200
>$200 to $250
>$250 to $300
>$300
Annual Premium Change


Proposed Rate Filing - Total Annual Premium Change (%)
Condominium Unitowners
Year 1
Year 2
Year 3
Policies in Force
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
< - 25%
< - 10% TO -25%
0% TO -10%
> 0% TO 5%
> 5% TO 10%
> 10% TO 15%
> 15% TO 20%
> 20% TO 25%
> 25%
Annual Premium Change



Proposed Rate Filing - Total Annual Premium Change ($)
Renters
Year 1
Year 2
Year 3
60,000
50,000
40,000
30,000
20,000
10,000
0
Policy Count
<-$100
<-$50 to -$100
$0 to -$50
>$0 to $50
>$50 to $100
>$100 to $120
>$120 to $200
>$200 to $250
>$250 to $300
>$300
Annual Premium Change



Proposed Rate Filing - Total Annual Premium Change (%)
Renters
Year 1
Year 2
Year 3
25,000
20,000
15,000
10,000
5,000
0
Policies in Force
< - 25%
< - 10% TO -25%
0% TO -10%
> 0% TO 5%
> 5% TO 10%
> 10% TO 15%
> 15% TO 20%
> 20% TO 25%
> 25%
Annual Premium Change

Governing Board Memorandum

January 23, 2018

Agenda Item 5:	Discussion lead by Advisory Panel Chair Mark Simmonds on Advisory Panel member Pius Lee’s concepts for potential structural and legislative adjustments affecting the CEA
Recommended Action:	No action required—information only

Advisory Panel Chair Mark Simmonds will lead a discussion on Advisory Panel member Pius Lee’s concepts for potential structural and legislative adjustments affecting the CEA.

Aug. 29, 2017.

Mr. Chairman Mark Simmonds.

Dear Chirman Simmonds:
I respectfully ask you to place these 4 items for consideration at our next meeting agenda on Sept. 7, 2017.
It is time to develop plans to provide affordable earthquake to the general publics.
After waiting for the last 6 years for the Congress to pass guarantee bills. So far, nothing occurs. It is time to take other actions.

Pius Lee.

Based on Commissioner Jones's letter of Nov. 21,2014, (see attached letter) all the recommendations require to change and or to amend the existing laws, such as

1) recommend that all new buildings including homes in the known earthquake areas be built to withstand an 8 magnitude earthquake which require legislature action.

2). Recommend to lower the earthquake premium by 50% if the property owners of a 1 to 4 unit (including commercial stores)building retrofits the building at his/her expenses. Require to amend existing laws.

3). Recommend that CEA offer earthquake insurance to property owners whose buildings are larger than 4 units, as long as their buildings have been seismic updated. It requires a change of law. and

4). Recommend that CEA drops its reinsurance (223 millions cost per year for $3.1 billions in claims paying capacity) and instead use those funds for mitigation or lower the premium. This requires change of laws and a new law will be created to guarantee the payment of claims. The reasoning is the CEA has enough funds to pay for the claims. In the history of California there were no big earthquake occurring at the same time in the entire State of California . Usually , earthquake occurs in the Southern, Central or Northern of California. CEA has enough funds to pay the

claims.

DAVE JONES
Insurance Commissioner

November 21, 2014

Pius Lee
California Realty & Land
916 Stockton St, 2nd Floor
San Francisco, CA 94108

Dear Mr. Lee:

The Department of Insurance appreciates your participation on the California Earthquake (CEA) Advisory Board and as Commissioner, I value your wise counsel. I write to respond to the issues you raise in your letter and memo.

You recommend that all new buildings be built to withstand an 8 magnitude earthquake in California earthquake areas. The CEA does not have authority over building standards, but it is working to improve building standards for residential properties so that it may be able to provide residential earthquake insurance at lower rates. This is an issue that the Legislature and the Seismic Safety Commission should take on.

You recommend lowering the earthquake insurance premium by 50% if the property owner of a 1-4 unit building retrofits the building at his/her own expense. The CEA is subject to Insurance Code provisions governing rates (Ins. Code Section 1851 and 10089.40) and these rates must be actuarially sound (Ins. Code Section 10089.40). The CEA's rates also must be based on the best available scientific information for assessing the risk of earthquake frequency, severity and loss (Ins. Code Section 10089.40), and the board must consider the presence of earthquake hazard reduction factors (i.e. retrofitting) (Ins. Code Section 10089.40). Currently, the CEA offers residential property insurance owners a 5% discount for mitigation. The CEA has initiated a study to determine whether it can increase its mitigation discount. There is currently no actuarial or scientific justification for providing a 50% premium discount for retrofitting. I agree with you that a bigger mitigation discount would lead to more policy sales, and is desirable.

You recommend that the CEA offer earthquake insurance to property owners whose buildings are larger than four units, as long as their buildings have been seismic upgraded. The CEA currently has no authority to offer earthquake insurance to commercial property

300 Capitol Mall, Suite 1700
Sacramento, California 95814
Phone (916) 492-3500 • Facsimile (916) 445-5280

owners. This would require a change to the law. Expanding the CEA's exposure would also require the CEA to purchase additional risk transfer, and there may be capacity constraints in the reinsurance and catastrophe bond markets if the CEA were to grow considerably.

You recommend that the CEA should not force property owners to purchase earthquake insurance at the same amount as their fire and liability insurance. The CEA has obtained approval from the Department of Insurance to offer a Choice product that allows the insured to pick and choose coverages (Ins. Code Section 10089(c)). CEA research indicates that consumers are more likely to purchase earthquake insurance when it may pick and choose coverages and amounts. I understand the CEA is working to expand the options in its Choice product so that more consumers will purchase earthquake insurance.

You recommend that CEA drop its reinsurance ($223 million cost for $3.1 billion in claims paying capacity) and instead use those funds for mitigation. State law (Insurance Code Section 10089.10) requires that the CEA to purchase reinsurance at rates and on terms the board considers reasonable and appropriate. If the CEA did not purchase reinsurance, the claims paying capacity of the CEA would be significantly reduced. With no reinsurance (or other risk transfer), CEA's sustainability would be at risk, and with no history of risk transfer prior to a major event, post event financing may be extremely difficult (if not impossible) to obtain. For these reasons, the Board has determined that the CEA's purchase of reinsurance is reasonable and appropriate. I am working closely with Senator Bill Monning, the chair of the Senate Insurance Committee, to identify a permanent source of funding for retrofit activities. It is my hope this will assist both residential and commercial property owners.

You recommend a new slogan for the California Earthquake Authority: "Save your life, save your home and save your money – retrofit your homes and insure with the California Earthquake Authority." The CEA's current marketing program is based on extensive consumer research. I will recommend your proposed slogan be researched for effectiveness.

I truly appreciate your ideas about improving the California Earthquake Authority. If you have any questions, please contact me, or Deputy Commissioner Chris Shultz, at 916 492-3500.

Sincerely

Dave Jones

DAVE JONES
California Insurance Commissioner

CC: Chris Shultz, Deputy Insurance Commissioner
Glenn Pomeroy, California Earthquake Authority

March 7, 2015.

Honorable Dave Jones
California Insurance Commissioner and Board Member of CEA
Sacramento California

Dear Commissioner Jones:

Thank very much for taking the time to respond to my recommendations as to how to offer affordable earthquake insurance to the property owners.

1) My recommendation to you as Board Member of CEA and Insurance Commissioner is that all new buildings including residential areas be built to withstand an 8.0 magnitude earthquake in California earthquake areas. Your answer is as follow: "the CEA does not have the authority over building standard but requires to change the laws"
In order to save lives and properties, I strongly request you to take the leadership to amend the building code to meet the standard.

2) My recommendation of lower the earthquake insurance premium by 50% if the property owner of 1-4 unit buildings would retrofits the buildings at their expense. Your answer was as follows: "CEA is subject to insurance Code provision governing rates (insurance code section 1851 and 10089.40). Please take the leadership to change those insurance codes to meet the market demands. Those codes are out of date. If those buildings would have been retrofitted to withstand an 8.0 magnitude earthquake, lives and properties would have been saved. This would result in fewer damages needed to be paid out by the CEA. The 10% or the 15% deductible may have been enough to cover the damages. If the homes or buildings are not strong enough, buildings will be destroyed and people will be hurt by the earthquake. The Federal, State & City government will spend hundred millions dollars to take care the problems after the earthquake. The victims will not have to pay property tax & income tax.

3) My recommendation is for the CEA to offer earthquake insurance to property owners whose buildings are larger than four units (including commercial stores) as long as their buildings have been seismic upgraded up to local city requirements. Your answer was as follow: "The CEA currently has no authority to offer earthquake insurance to commercial property and property over 4 units". Again I respectfully ask you to change the laws to offer protection to property owners whose buildings have over 4 units and to including commercial units. It does not make any sense to exclude commercial building from purchasing earthquake insurance from CEA. An earthquake is not selective in which building it will damage. The City of San Francisco has already passed an ordinance to force all property owners with 5 units or more to retrofit their units within 7 years.

4) My recommendation to you is that the CEA should not force property owners to purchase earthquake insurance at the same amount as their fire and liability insurance. Your answer was as follow: "The CEA has obtained approval from Department of Insurance to offer a Choice product that allows the insured to pick and choose coverage (insurance code section 10089(c). If it is true how come I am being forced to purchase the

same amount as my liability insurance? The cost to purchase earthquake insurance is so high that not too many people can afford to buy it. I am glad that you mention that CEA is working to expend the options in its choice product so that more consumers will purchase earthquake insurance.

5) My most important recommendation to you is that the CEA drop its reinsurance of $223 million cost for $3.1 billion in claims paying capacity and instead use those funds for mitigation. Again your answer was as follows: "State law (Insurance Code Section 10089.10) requires that the CEA to purchase reinsurance at rates and in terms the board considers reasonable and appropriate. My recommendation to you again is to change the laws to drop the reinsurance. The reasoning is the CEA has enough funds to pay for the claims. In the history of California there were no big earthquakes occurring at the same time in the entire state of California. Usually the earthquakes occurs in the southern or central or northern of California. CEA has enough funds to pay the claims such as the Napa earthquake in the amount of $325,000(read in the news). Currently CEA has been working with the Congress to introduce S.886 Catastrophe Obligation Guarantee Act and H.R4014: Catastrophe Obligation Guarantee Act of 2009 for the pass four years. If we can get the Law pass, we will drop the reinsurance. It seems that the chance of passing law will be difficult. According to a report, the CEO of CEA Glenn Pomeroy is going to ask the State Legislature to pass such guarantee law. Please work together with Glenn and Senator Bill Monning to pass such Guarantee Bill, so that we can save the $223 million dollars each year. I strongly support your plan to offer affordable earthquake insurance to both residential and commercial property owners. If you can drop the reinsurance, both the residential and commercial earthquake insurance will be affordable similar to the current fire and liability insurance.
Thank you for considering my recommendations.

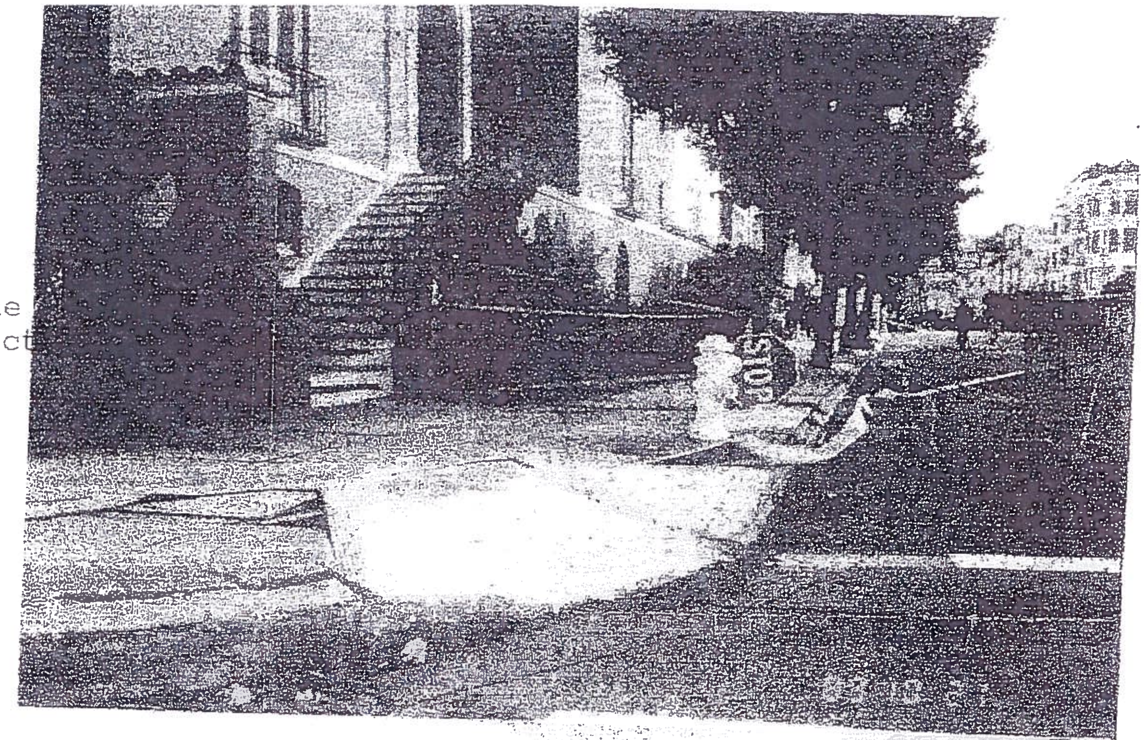
Respectfully Yours:

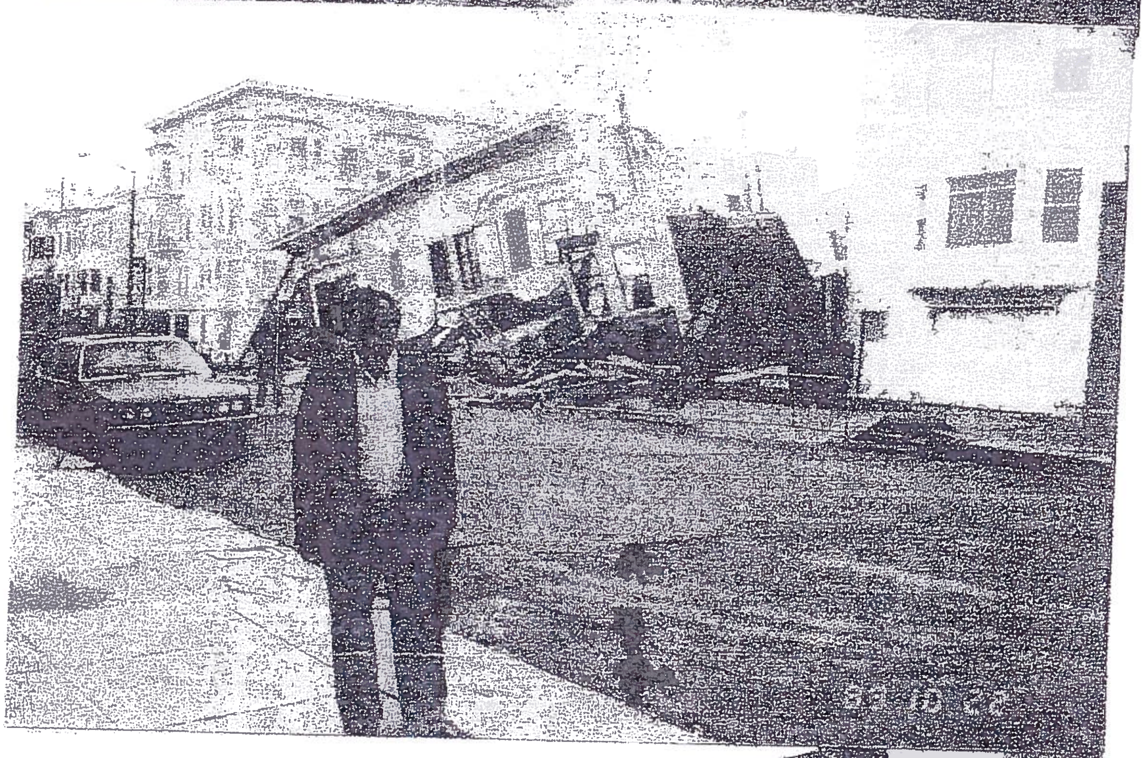
Pius Lee
Member Advisory Panel & Chair Chinatown Neighborhood Ass.
415-699-1010. (piuslee33@yahoo.com)
916 Stockton Street, 2nd. Floor,
San Francisco, Ca 94108.
CC: Chris Schultz, Deputy Insurance Commissioner.
CEO Glenn Pomeroy, CEA.

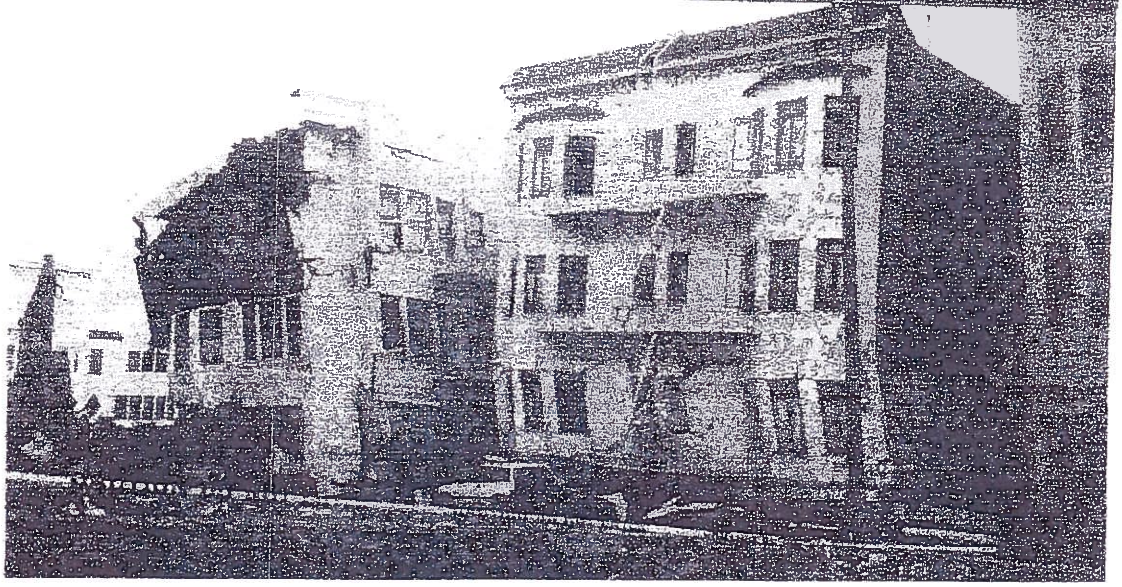
Enclosed: San Francisco Soft Story Program 2013.

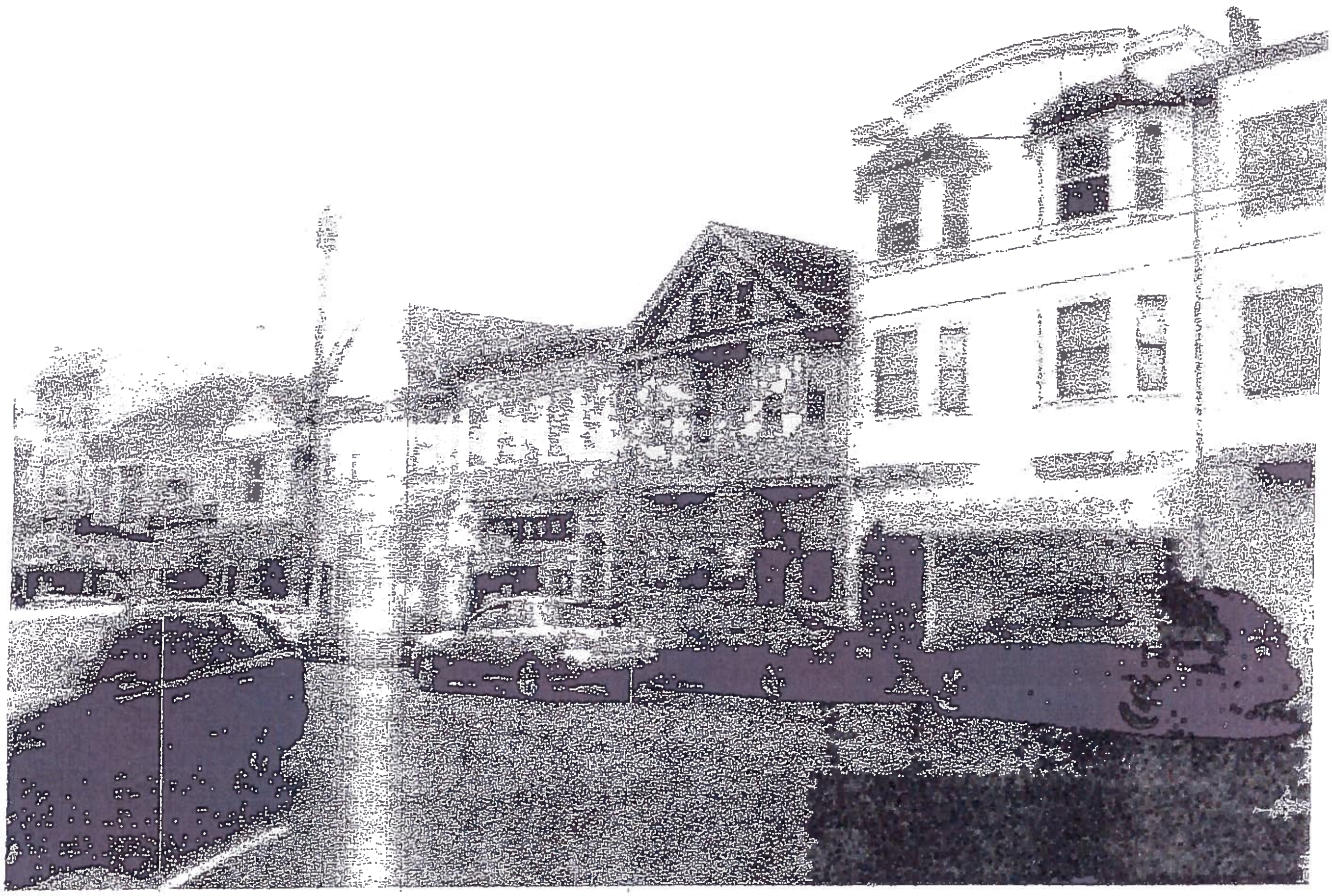
1989 San Francisco Earthquake.

Damages in the Marina District









Pius Lee California Realty & Land inc. 916 Stockton St San Francisco, CA 94108 Cell: (415)699-1010 Fax: (415)397-2110
Piuslee33@yahoo.com

Under the current rules of California Earthquake Authority the above mentioned buildings will not qualifed to purchase earthquake insurance because, ground level is commercial and upper level is residential, eventhough, it is only a 2 units buildings.
CEA covers up to 4 units.

Because of this restriction, CEA has and will lose lot of clients.

No choice for seismic retrofits

Voluntary program for soft-story buildings to become mandatory

By Mike Aldax
Examiner Staff Writer

A renewed effort to urge property owners to seismically retrofit thousands of buildings in The City will now move from voluntary to mandatory, according to Mayor Gavin Newsom, as buildings failed to get upgraded.

About one-third of San Franciscans live in soft-story buildings, which are wood-framed and have a store, restaurant or parking garage on the first floor that are structurally weaker than the upper stories.

Newsom introduced legislation in recent years that would mandate the retrofits — which can cost between $79,000 and $132,000 per structure — but it was killed by the Board of Supervisors.

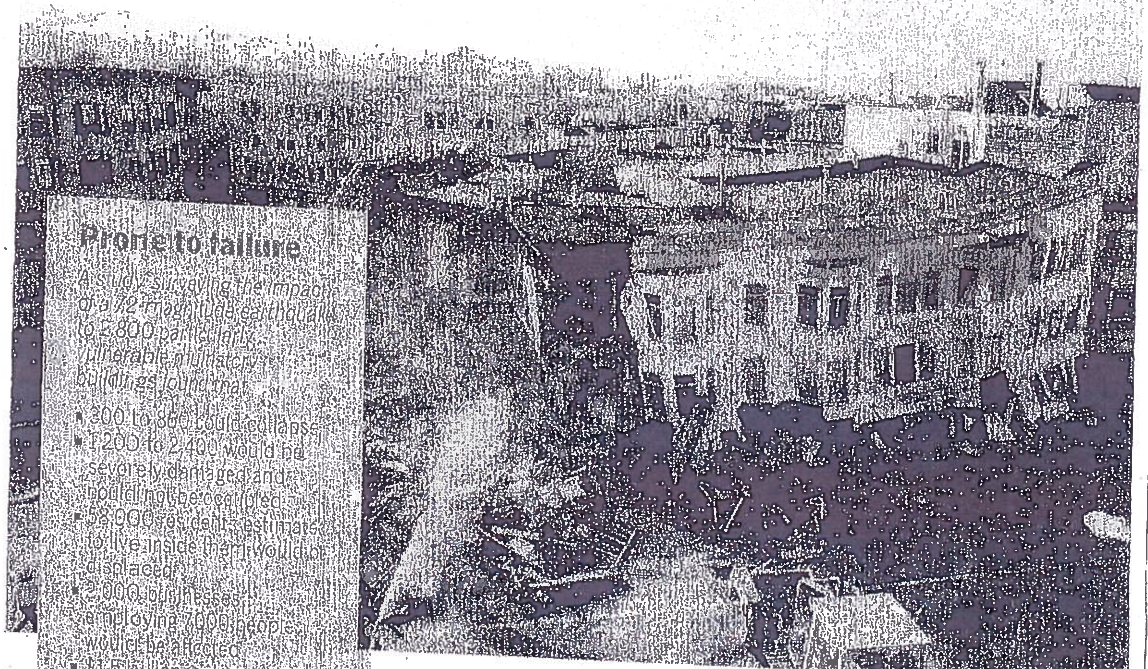
However, more recent legislation designed to encourage voluntary retrofits with small tax incentives has been called ineffective by analysts, since the incentives paid for only a small percentage of the costs.

Newsom said he "always intended" to make the improvements mandatory due to the probability of a major earthquake, but wanted to give owners time to capitalize on incentives before the retrofits became required.

"Clearly they're not taking advantage of the voluntary, so that will allow us to now move forward [with mandatory]," he said, adding that the Board of Supervisors would now support the measure.

Board President David Chiu said he would support the idea. The "tragic catastrophe in Haiti" and the ineffectiveness of the voluntary plan signal a need for a more drastic approach, he said.

To make certain they are retrofitted, Newsom said his new approach will be multipronged: setting up incentives, requirements and deadlines and establishing financing options for property owners.



Not so safe and sound: About one-third of San Francisco residents live in soft-story buildings, which are particularly susceptible to earthquake damage.

AP FILE PHOTO

Prone to failure

A study surveying the impact of a 7.2 magnitude earthquake to 2,800 particularly vulnerable multistory buildings found that:

- 200 to 800 could collapse
- 1,200 to 2,400 would be severely damaged and could not be occupied
- 58,000 residents estimated to live inside them would be displaced
- 2,000 businesses employing 7,000 people would be affected
- $1.5 billion in damage could be expected, with cost for retrofitting buildings to withstand quake estimated at $260 million

Source: San Francisco Department of Building Inspection

The Newsom administration is mulling ways to provide low-interest loans to building owners to pay for the upgrades. Among the strategies include a general obligation bond or the reconstitution of unused bond money from the Loma Prieta earthquake. Those strategies would have to go before voters on the June ballot.

"We were hoping to get it in by [the] June [ballot]," Newsom said.

Representatives of property owners aren't happy about the suggestion of mandatory retrofits, saying it would financially cripple some owners who are already struggling with draconian rent restrictions.

"We are bombarded with unfunded mandates and it's not easy to recoup our costs," said Noni Richen, board president of the Small Property Owners of San Francisco Institute.

Janan New, executive director of the San Francisco Apartment Association, said The City needs to set guidelines before mandating retrofits.

New said her association would not support mandatory retrofits if The City requires expensive "gold-plate standards," but may approve if the standards include "simple, cost-effective life-safety methods."

maldax@sfexaminer.com

Page 9.

March 18, 2010

圖：智利雖[illegible]8.8級強震，但大部分建築都完好。 美聯社

抗震有方 智利建築擋9級強震

［揭秘］智利警方調查機構17日宣布，初步統計結果顯示，2·27大地震和海嘯在智利各地已造成至少630人遇難，其中已確認身分的有500餘人。智利地震的破壞性堪比100個海地地震，但死亡人數卻遠遠低於海地，其中一個重要原因在於，智利所有建築都按照抗擊9級地震的標準來設計。

祖籍廣州的智利華僑李國偉在智利首都聖地亞哥市西南邊的卡雷拉探戈小鎮自建了一棟別墅，經歷了8.8級強震和一系列強烈餘震後，屋裏擺放的陶瓷器具完好無損，整棟房子沒有出現一條裂縫。實際上，巨震之後聖地亞哥99%的房屋都成功地躲過一劫。

《廣州日報》報道，智利所有新房建設都有嚴格的建造程式和監督流程。李國偉說，自1985年地震後，智利政府就要求所有建築都按照抗9級地震的標準來設計。智利防震設計的理念不是建造堅不可摧的建築，而是儘可能緩衝、釋放地震能量，並最大限度保全建築。不要建太高的房子，也是智利經驗之一。

此外，智利有效防禦大地震的原因還有強有力的事後監督，確保了一整套制度的實施到位。智利是全世界地震最頻發的國家，智利人普遍擁有防震意識，這也是傷亡較少的重要因素之一。

在經歷了一場特大地震後，智利人平和的心態，使得災區的社會秩序迅速恢復了正常。在受災最嚴重的康塞普西翁市，震後人們心態平和。地震後10天，前往復活節島的遊客又多了起來，智利人樂天的性格在一位遊客的口中得到了印證：「地震這樣的事情誰都可能遇到，沒有人知道明天會發生甚麼。」

March 18, 2010.

After Chile big earthquake in 1985, Chile government passed a law, requiring all new construction, strong enough to resist up to magnitude 9 earthquakes. That was the reason why majority of the buildings are still standing with only some damages during the recent 8.8 magnitude earthquake. Many lives and buildings were saved because because of the higher building standards.

WEDNESDAY,
JUNE 9, 2010

The Examiner
SAN FRANCISCO

PROPOSITION 13

Quake-safety tax hike blocked

Property owners who renovate their buildings to withstand earthquakes won't have to pay property taxes on the improvements.

Proposition 13 changes the state constitution so that counties can no longer raise property taxes until a building is sold to a new owner.

Proposition 13
Pass

Current law allows county assessors to increase property taxes after owners make significant upgrades or additions to their buildings. Earthquake improvements were exempt from assessments for 15 years.

Supporters say the change in the law will encourage property owners to make improvements to unreinforced buildings that are most prone to collapse in earthquakes. Prop. 13 replaces that with a single reassessment rule for earthquake-safety upgrades.

State Sen. Roy Ashburn, who carried the bill in the Legislature, says the change was needed because it's the older, unreinforced buildings that are in greatest need of safety upgrades.

PROPOSITION A

Schools tax renewed for two decades

A special property tax to fund capital improvements for the San Francisco Unified School District — including seismic work, fire and safety upgrades and other maintenance — was approved.

Measure A is a 20-year extension of a tax previously approved by voters in June 1990. The renewed tax is not to exceed $32.20 per parcel for single-family residential and nonresidential parcels, and $16.10 per dwelling unit for mixed-use and multifamily residential parcels.

Proposition A
Pass

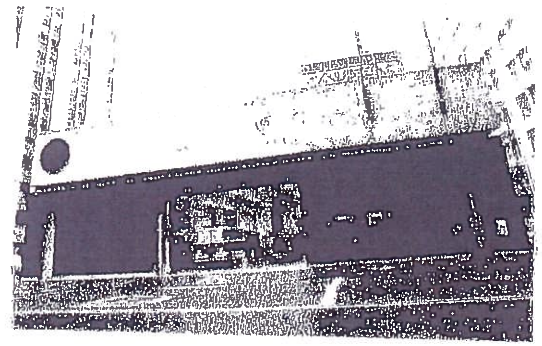
Unlike the previous tax, the maximum rate will be adjusted for inflation. Also, the district will be able to spend $16 million a year of the tax revenue rather than the previous $12 million.

Homes with residents 65 years and older are eligible for an exemption.

— Mike Aldax

PROPOSITION B

Protection package: A $412 million bond will go toward upgrading public safety infrastructure citywide, including fire stations, in the event of a major earthquake.



New bond boosts quake safety

The nearly 100-year-old water system under the streets of San Francisco that helps douse fires will receive a major structural upgrade after a bond measure that will also refurbish firehouses and spur construction of a new police headquarters passed Tuesday.

The passage of Proposition B, a $412 million project billed as the Earthquake Safety and Emergency Response Bond, is the first step in protecting public safety buildings from a major temblor. Another major bond measure is expected in the next five years.

About half the money will be used to build a new police command center at Third and Mission Rock streets in the Mission Bay neighborhood.

Prop. B originally contained an additional $240 million for a new forensic sciences center that would have housed a state-of-the-art crime lab, but was stripped by the Board of Supervisors in February.

Proposition B
Pass

The project required a two-thirds majority to pass and will be funded through property taxes. A city controller's statement estimated that the average tax rate for the bond from fiscal year 2010-11 through 2039-40 would be $10.60 per $100,000 of assessed value on properties.

Landlords are allowed to pass on 50 percent of their increases to tenants.

— Brent Begin

Federal Legislation:

S.886: Catastrophe Obligation Guarantee Act

Florida: Bill Nelson

California: Dianne Feinstein and Barbara Boxer

Louisiana: Mary Landrieu

H.R.4014: Catastrophe Obligation Guarantee Act of 2009

California: Loretta Sanchez, John Campbell, Lois Capps, Judy Chu, Jim Costa, Sam Farr, John Garamendi, Zoe Lofgren, Grace Napolitano, Laura Richardson, Lucille Roybal-Allard, Linda Sanchez, Adam Schiff, Jackie Speier, Mike Thompson, and Lynn Woolsey

Louisiana: Charlie Melancon

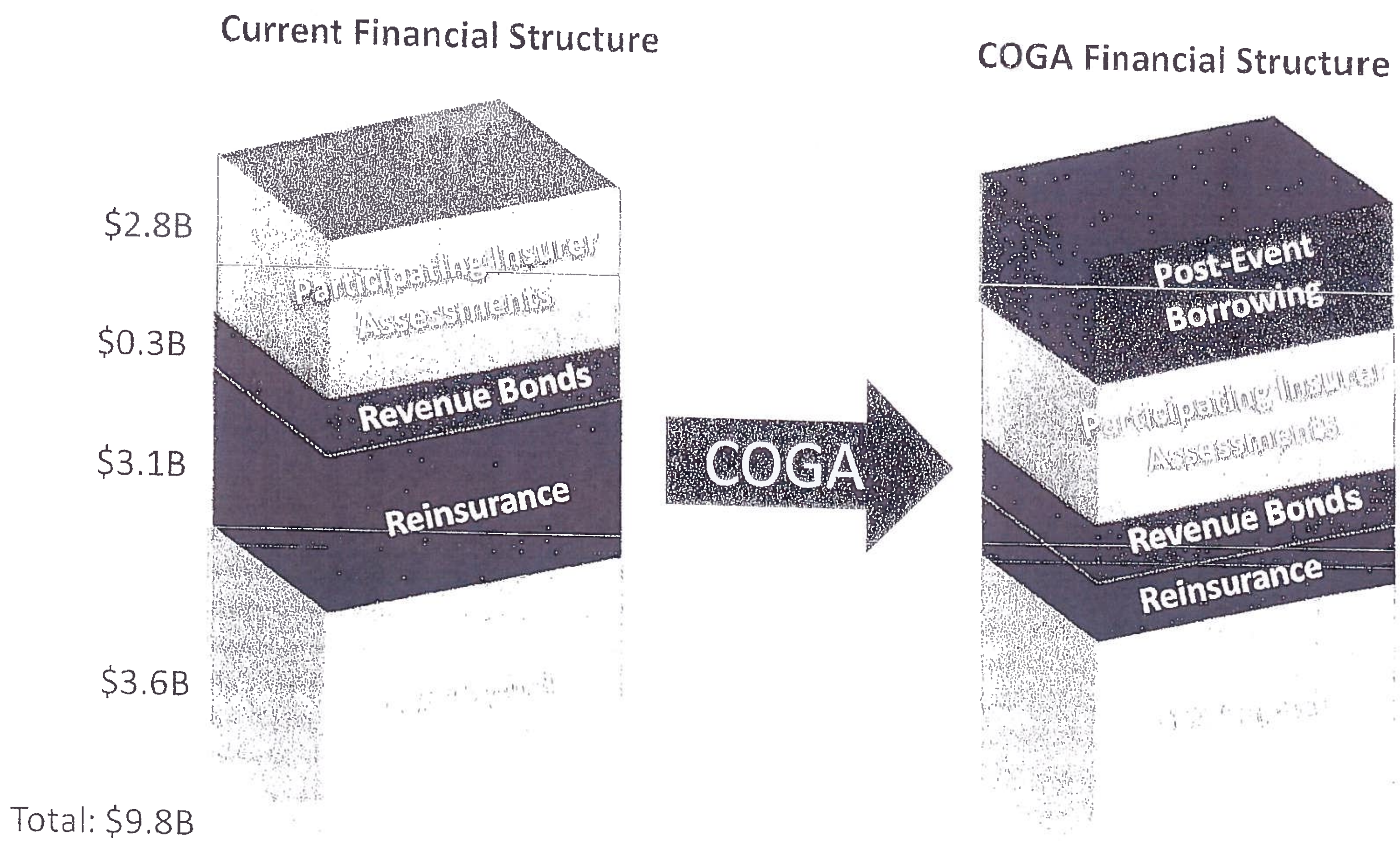
H.R.2555: Homeowners' Defense Act of 2009

Ron Klein (FL) and others

- National Catastrophe Risk Consortium
- COGA (Title II)
- Federal reinsurance
- Mitigation

Key: Reduce dependence on reinsurance

Federally guaranteed post-event borrowing capability



Claims Paying Capacity:
1-in-545 year event

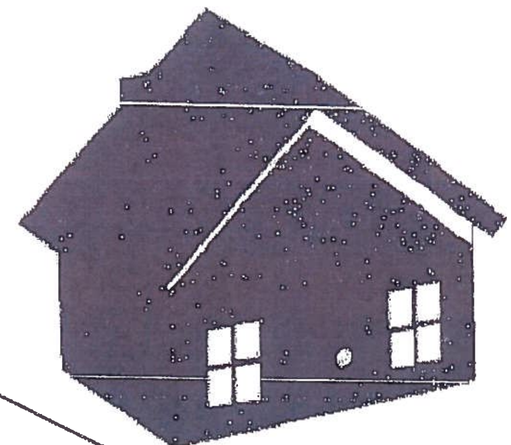
RECOMMEND TO USE THE SAVINGS FROM THE REINSURANCE MONEY, TO ASSIST PROPERTY OWNERS TO RETROFIT THEIR HOMES FIRST AND LOWER THE COSTS OF INSURANCE AFTER THE COMPLETION OF THE RETROFIT WORKS.

COGA: Reducing costs

COGA would lower policyholder premiums

Example: $400,000 Dwelling / $50,000 Contents

Current Rate: $920



35% Rate Reduction

COGA Rate: $600

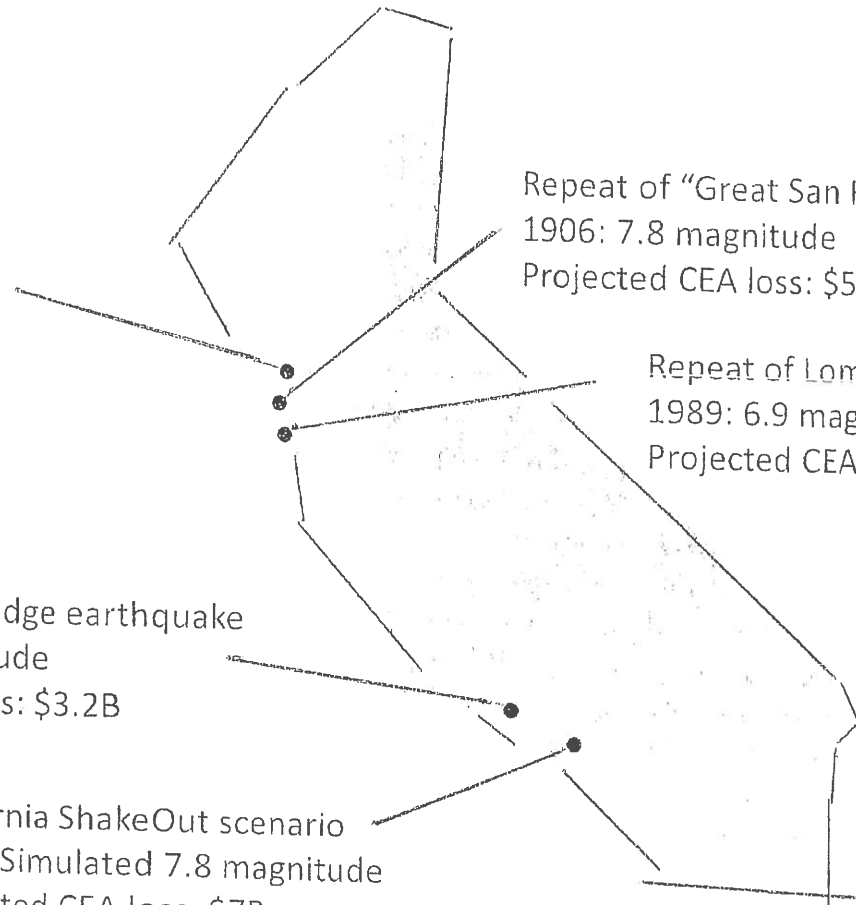
Page 14.

With COGA, the CEA could still pay all claims for any of the events below—without the need to borrow.

Hayward Fault scenario
Modeled 7.2 magnitude
Projected CEA loss: $3.9B

Repeat of "Great San Francisco Earthquake"
1906: 7.8 magnitude
Projected CEA loss: $5-$6B

Repeat of Loma Prieta "World Series Earthquake"
1989: 6.9 magnitude
Projected CEA loss: $.5B

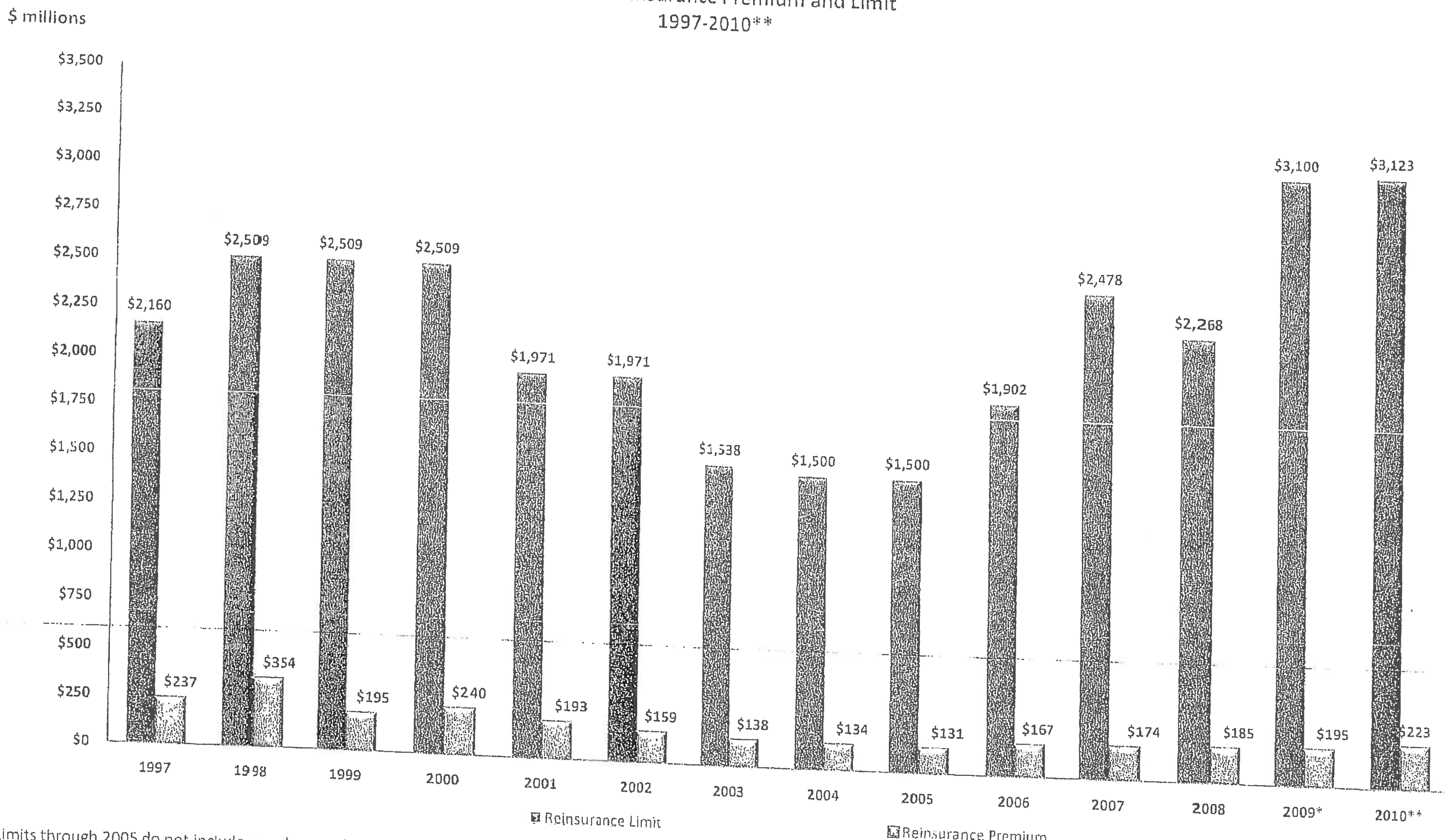


Repeat of Northridge earthquake
1994: 6.7 magnitude
Projected CEA loss: $3.2B

California ShakeOut scenario
2008: Simulated 7.8 magnitude
Projected CEA loss: $7B

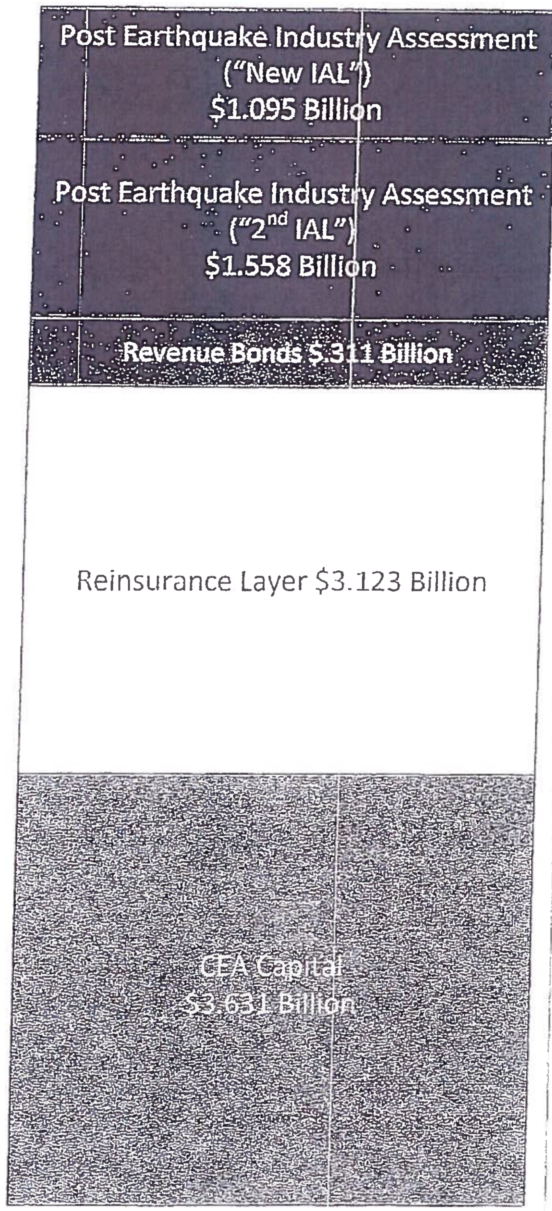
Probability of need to borrow is less than 1%.

California Earthquake Authority
Annual Reinsurance Premium and Limit
1997-2010**



Limits through 2005 do not include supplemental coverage while 2006 forward include supplemental coverage.
* per CEA 2010 reinsurance contracts

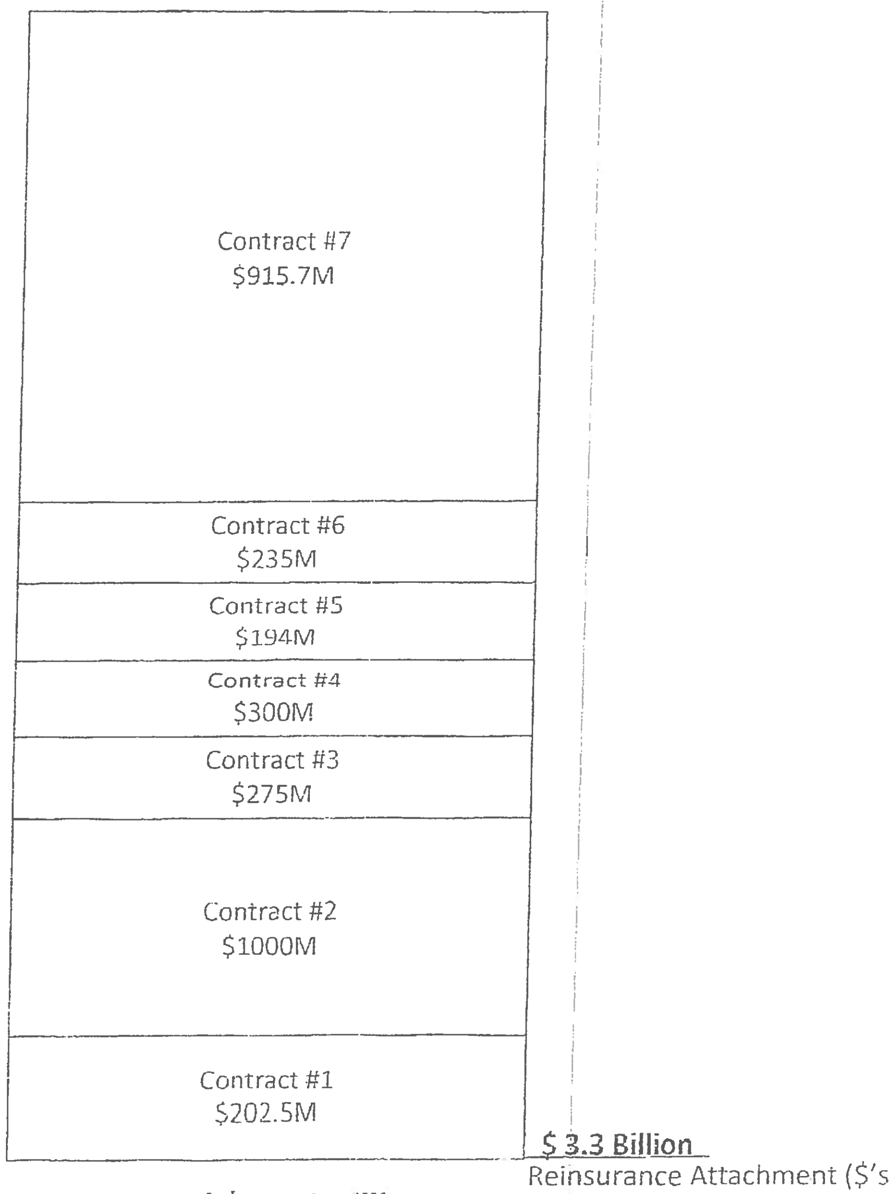
California Earthquake Authority
Claim-Paying Capacity
as of April 1, 2010



Total $9.718 Billion

Page 17.

California Earthquake Authority
Reinsurance Capacity
as of January 1, 2010



Total $3.123 Billion

COGA: Reducing deductibles

COGA would dramatically lower deductibles

Example: $400,000 Dwelling / $50,000 Contents

Without COGA

Current Policy

Deductible: $60,000

Contents: NA

****Contents not covered until dwelling loss exceeds $60,000***

Premium: $924

With COGA

50% reduction in dwelling deductible

***Lower* Premium**

Deductible: $60,000

Contents: NA

****Contents not covered until dwelling loss exceeds $60,000***

Premium: $600

***Lower* Deductible**

Deductible: $30,000

Contents: $7,500

****15% content deductible***

Premium: $767

LOMA PRIETA QUAKE *20 Years Later*

Cities lag in raising standards for homes

By Robert Selna
CHRONICLE STAFF WRITER

In the 20 years since the Loma Prieta earthquake, some of the Bay Area's most dangerous schools, roadways and buildings have been shored up. And while hospitals have a long way to go, most have plans to undergo retrofitting.

But when it comes to housing – where people spend most of their time — many Bay Area cities have done little to prepare for a major temblor that scientists say has a 62 percent chance of striking the region in the next 30 years.

Only a handful of cities have provided even basic information or minimal incentives to help owners retrofit their properties. And although most experts agree that mandatory programs are the only way to ensure widespread retrofits, such mandates are just now being considered.

Earthquake engineers say that ignoring the homes' seismic danger is particularly risky because a high percentage of residents live in housing constructed before the mid-1970s, when building codes were made stricter.

If the most susceptible buildings are not retrofitted, thousands of residents could be killed and scores more displaced by a major quake, stretching emergency shelter and social services to a breaking point, experts say.

"We have been retrofitting public infrastructure, but in the Bay Area and California, we have done a miserable job of retrofitting where we live," said

Earthquake from page A1 A8

Peter Yanev, a seismic engineer and author who sits on engineering advisory councils at UC Berkeley and the Massachusetts Institute of Technology. "In San Francisco, there are hundreds and hundreds of buildings that are not retrofitted, and they are a risk to people's lives."

Other experts say it makes some sense that officials largely have ignored the potential danger presented by shaky housing. Government mandates instead have focused on critical institutions as well as unreinforced brick buildings, which cause the most deaths in earthquakes worldwide.

Quake resources

- San Francisco's Community Action Plan for Seismic Safety: www.sfcapss.org
- SPUR think tank article on San Francisco housing risk: links.sfgate.com/ZIIS
- Locate recent quakes: www.earthquake.usgs.gov

we've dealt with these killer buildings (made of unreinforced masonry) and required owners to retrofit them so they don't kill anyone, and we've come up with really high standards for hospitals, but then there's everything in the middle," said David Bonowitz, a local earthquake engineer and member of a citizen committee that has advised San Francisco on seismic safety.

Under a statewide edict, most cities have required owners of unreinforced masonry buildings to retrofit their structures. In such buildings, masonry serves as the frame as opposed to wood or steel, which is much safer. In San Francisco, 90 percent of the city's 1,700 risky brick buildings have been fixed.

San Francisco and several other Bay Area cities also have conducted detailed seismic assessments of their school buildings.

Hospitals, meanwhile, are expensive to retrofit, and many have lagged behind state deadlines for major repair work. Several San Francisco hospitals are undergoing retrofit work or plan to complete it no later than 2015. San Francisco General Hospital, for instance, will be replaced in the coming years.

But the housing risk looms large.

Unsafe construction

Two building types are of particular concern to engineers: wood-frame, "soft-story" buildings and concrete-frame structures that lack sufficient steel reinforcement.

The thousands of soft-story buildings in San Francisco include the classic apartment building with a store or restaurant on the first floor, as well as the Sunset District home built over a garage. They feature a space — a glass window or a garage door — on the ground floor where a wall might otherwise be, making their wood frames prone to twisting and buckling in an earthquake.

About 120 such buildings were damaged in Loma Prieta. But engineers say that destruction could be 100 times worse after the big temblor that scientists say has a more than 60 percent chance of hitting the Bay Area within the next three decades.

Also at risk are precarious concrete-frame structures erected before building code changes in the mid-1970s. Those changes demanded more steel reinforcement in and around beams and columns and stronger walls. They include everything from Nob Hill condominiums to former printing houses.

Among Bay Area cities, Berkeley has done the most to encourage soft-story building owners to retrofit. Among other things, the city requires owners to get an engineering study to identify retrofit solutions and costs. Landlords must post warning signs if deficiencies are confirmed.

In San Francisco, a city-sponsored report in February recommended mandatory retrofits for about 2,800 of the city's largest soft-story buildings — those have three stories or more, at least five residential units, and are considered to be the most dangerous.

Risky types of buildings

Soft-story: San Francisco has identified 2,800 soft-story buildings that are the most dangerous. They have three stories or more, at least five residential units and large ground-floor openings.

- Retrofits include adding plywood shear walls, steel frames and columns.
- Cost to retrofit: $9,000 to $28,000 per residential unit.
- Potential quake damage that could be prevented by retrofitting: $1.5 billion.

Concrete-frame: Engineers estimate that there are several hundred in San Francisco. They are dangerous because they lack steel reinforcement in beams and columns. San Francisco-sponsored studies on these structures are expected in the coming months.

- Lack of steel in columns causes them to crumble or explode under seismic pressure.
- Collapsed in big earthquakes in Northridge (Los Angeles County), Mexico, Japan and Turkey.
- Retrofits include wrapping columns with steel rebar or carbon fiber or adding steel braces.

Voluntary retrofits

Almost 100,000 more soft-story buildings are in the city, such as the homes built over garages in the Sunset District.

In September, Mayor Gavin Newsom introduced legislation to encourage property owners to voluntarily retrofit the buildings, including expediting the permit process and waiving fees. Newsom directed the city's Department of Building Inspection in February to craft a law requiring soft-story retrofits, and he has said that a task force will be convened to make recommendations about how to design and implement the program.

Consultants hired by the city building department plan to provide recommendations regarding the dangerous concrete buildings in coming months.

E-mail Robert Selna at rselna@sfchronicle.com.

A collapsed Marina building could be just a hint of

DEFINITIONS

Soft Story (Weak Story) Building

Buildings with weak first story walls, which have been weakened by large numbers of openings such as garages or storefront windows.

Underfloor Area

This term is used to describe floor areas below grade that are utilized, excluding vent shafts. This may include basements, crawl spaces, cellars, and storage. As long as this space provides some function to the building or is habitable, then it is considered an underfloor area.

Basement

The California Building Code defines a basement as "a *story* that is not a *story above grade plane*".

Story Above Grade Plane

Any story having its finished floor surface entirely above grade plane, or in which the finished surface of the floor next above is:
1. More than 6 feet above grade plane; or
2. More than 12 feet above the finished ground level at any point.

To submit completed forms or receive additional information, please contact:

Department of Building Inspection
1660 Mission Street
San Francisco, CA 94103

Contacts for Information:
-Help Desk/ Information Counter
-Soft Story Program

Phone:
415-558-6699

Email:
softstory@sfgov.org

Website:
www.sfdbi.org

To find out more about the San Francisco Soft Story Program, go to our website and select the "Earthquake Preparedness" option under the "Most Requested" tab.

San Francisco Soft Story Program 2013

Stronger Seismic Safety to Protect the Public and San Francisco's Future

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

SFDBI.org

The Soft Story Retrofit Program is vital to public safety and a sound investment in San Francisco's future.

Introduction

San Francisco adopted unanimously a new ordinance, No. 66-13, signed by Mayor Ed Lee on April 18th, 2013, and which established a Mandatory Soft Story Retrofit Program. The Department of Building Inspection (DBI) is responsible for implementing these new ordinance and compliance timelines.

This new ordinance was adopted to guide property owners on seismic strengthening in order to better protect highly vulnerable buildings from collapse during the next major earthquake. Extensive research has found that buildings in the 'soft-story' category are highly susceptible to major structural damage – making the seismic strengthening of such buildings a civic priority to protect those living or doing business in such buildings.

The Association of Bay Area Governments estimates that soft-story residential buildings will be responsible for 66 percent of the uninhabitable housing following a seismic event on the Hayward fault.

A City-Wide Problem

The ordinance applies to wood-frame buildings of three or more stories or two stories over a basement or underfloor area that have any portion extending above grade, and containing five or more residential dwelling units where the permit to construct was applied for prior to January 1, 1978, and where the building has not yet been seismically strengthened.

While these types of buildings and their associated risks are found in every neighborhood in San Francisco, they are most commonly found in the following districts: Mission, Western Addition, Richmond, North Beach, Marina District.

Building Owners' Responsibility

In September, 2013, the Department of Building Inspection will begin sending notices to building owners who will be required to complete and submit a mandatory screening form, per San Francisco Building Code Chapter 34B.

The building owner must have a California-licensed architect, or civil or structural engineer complete, and return to DBI within one year, the mandatory screening form that will be part of the notification package, providing the following information (Please note there is no fee for submitting the screening form.):

- All information and building characteristics required by DBI to determine if the building requires a retrofit;
- For buildings that have done previous retrofitting per SFBC Section 3402B Exception 1 or if the building does not have a soft story condition, an optional evaluation form may be submitted. This is a more detailed evaluation which is not required but can be completed and submitted to the Department with the required plan review fee.
- A declaration of the appropriate Compliance Tier

Exceptions

1. A building that has been seismically strengthened to meet or exceed the standards of Section 1604.11 of the San Francisco Building Code or its predecessor provisions within 15 years prior to the operative date of Chapter 34B of the San Francisco Building Code is exempt if work is shown to be properly permitted and completed.
2. A building that has completed voluntary seismic strengthening under the provisions of Administrative Bulletin AB-094. (The building owner can complete the screening form for ONLY this instance.)

Scope of Work

Construction is limited to the ground floor where large openings such as garages or commercial storefronts take away the shear walls of the building.

Compliance Tiers

Tier I. Buildings that contain a Group A, E, R-2.1, R-3.1 or R-4 occupancy on any story

Tier II. Buildings containing 15 or more dwelling units, except for buildings assigned to Tier I or Tier IV

Tier III. Building not falling within the definition of another tier.

Tier IV. Buildings that contain a Group B or M occupancy on the first story or in a basement or underfloor area that has any portion extending above grade, and buildings that are in mapped liquefaction zones, except for buildings assigned to Tier 1.

Compliance Tier	Submission of Screening Form and Optional Evaluation Form	Submittal of Permit Application with Plans for Seismic Retrofit Work	Completion of Work and Issuance of Certificate of Completion and Occupancy
I	1 Year	2 Years	4 Years
II	1 Year	3 Years	5 Years
III	1 Year	4 Years	6 Years
IV	1 Year	5 Years	7 Years