CCCERA
Contra Costa County Employees' Retirement Association

# AGENDA

## RETIREMENT BOARD MEETING

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|---|---|
| REGULAR MEETING | Board Conference Room |
| September 11, 2024 | 1200 Concord Avenue, Suite 350 |
| 9:00 a.m. | Concord, California |

THE RETIREMENT BOARD MAY DISCUSS AND TAKE ACTION ON THE FOLLOWING:

1. Pledge of Allegiance.

2. Public Comment (3 minutes/speaker).

3. Recognition of Renee Flores for 5 years of service.

***CONSENT ITEMS***

4.A All Consent Items are to be approved by one action unless a Board Member requests separate action on a specific item. (Action Item)

I. Approve minutes from the August 14, 2024 meeting.

II. Authorize Vice-Chair MacDonald to attend the scheduled SACRS Board of Directors and Program Committee Meetings, September 16-17, 2024, and October 15, 2024, Sacramento, CA.

III. Approve the following routine items:
   a. Certifications of membership.
   b. Service and disability allowances.
   c. Death benefits.
   d. Investment liquidity report.

IV. Accept the following routine items:
   a. Disability applications and authorize subpoenas as required.
   b. Investment asset allocation report.

4.B Consider and take possible action on Consent Items previously removed, if any. (Action Item)

***CLOSED SESSION***

5. The Board will go into closed session pursuant to Govt. Code Section 54957 to consider recommendations from the medical advisor and/or staff regarding the following disability retirement applications:

| Member | Type Sought | Recommendation |
|---|---|---|
| a. Todd Roach | Service Connected | Service Connected |
| b. John Archuleta | Service Connected | Service Connected |
| d. Samuel Transue | Service Connected | Service Connected |
| e. Nick Galvan | Service Connected | Service Connected |

***OPEN SESSION***

6. Presentation of the Actuarial Audit Report by Cheiron. (Presentation Item)

7. Consider and take possible action to adopt the December 31, 2023 Valuation Report and contribution rates for the period July 1, 2025—June 30, 2026. (Action item)

8. Miscellaneous
   a. Staff Report
   b. Outside Professionals' Report
   c. Trustees' comments

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*Meeting Date*
***09/11/2024***
*Agenda Item*
***#4.A-I***

Contra Costa County Employees' Retirement Association

**RETIREMENT BOARD MEETING MINUTES**

REGULAR MEETING
August 14, 2024
9:00 a.m.

Board Conference Room
1200 Concord Avenue, Suite 350
Concord, California

Present: Candace Andersen, Dennis Chebotarev, Donald Finley, Scott Gordon, Jerry Holcombe, Louis Kroll, Jay Kwon, David MacDonald, Dan Mierzwa, John Phillips, Mike Sloan and Samson Wong

Absent: None

Staff: Christina Dunn, Chief Executive Officer; Karen Levy, General Counsel; and Tim Price, Chief Investment Officer

Outside Professional Support: Representing:
None

1. **Pledge of Allegiance**
The Board, staff and audience joined in the *Pledge of Allegiance.*

2. **Accept comments from the Public**
No member of the public offered comment.

3. **Recognition of Gary Wayne for 35 years of service**
Gordon recognized Gary Wayne for 35 years of service.

4A. **Consider and take possible action on Consent Items if previously removed, if any**
It was **M/S/C** to approve all consent items of the August 14, 2024, meeting. (Yes: Andersen, Chebotarev, Gordon, Holcombe, Kroll, MacDonald, Mierzwa, Phillips, and Wong).

4B. **Consider and take possible action on Consent Items if previously removed, if any**
No consent items were removed.

**CLOSED SESSION**

The Board moved into Closed Session pursuant to Govt. Code Section 54957 to consider recommendations from the medical advisor and/or staff regarding disability retirement applications.

The Board moved into open session and reported the following:

5. **Disability Applications:**

   a. It was **M/S/C** to accept the Medical Advisor's recommendation and grant the following disability benefits: Elizabeth Stewart – Service Connected (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Mierzwa, and Phillips).
   b. It was **M/S/C** to accept the Medical Advisor's recommendation and grant the following disability benefits: Cecelia Parrish Barruel – Service Connected (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Mierzwa, and Philips).
   c. It was **M/S/C** to accept the Medical Advisor's recommendation and grant the following disability benefits: Timothy Robertson – Service Connected (Yes: Andersen, Chebotarev, Gordon, Holcombe, Kroll, MacDonald, Mierzwa, Phillips and Wong).
   d. It was **M/S/C** that there was insufficient evidence to grant the following disability benefits: James Martin – Service Connected (Yes: Andersen, Chebotarev, Gordon, Holcombe, Kroll, MacDonald, Mierzwa, Phillips and Wong).
   e. It was **M/S/C** to accept the Medical Advisor's recommendation and grant the following disability benefits: Kevin Dotts – Service Connected (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Mierzwa, and Phillips).

6. It was **M/S/C** to approve and adopt the recommendation regarding the disability application for Mark Spaulding. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Mierzwa, and Phillips).

7. **Presentation of investment annual funding plan**

   Price presented the investment annual funding plan.

8. **Consider authorizing attendance of the Board:**

   a. There was no action was taken on this item. NCPERS Accredited Fiduciary Program (NAF), October 26-27, 2024, Palm Springs, CA.

   b. It was **M/S/C** to authorize the attendance of 1 Board member at the NCPERS Program for Advanced Trustee Studies (PATS), October 26-27, 2024, Palm Springs, CA. (Yes: Andersen, Chebotarev, Gordon, Holcombe, Kroll, MacDonald, Mierzwa, Phillips, and Wong).

c. There was no action was taken on this item. CSDA's Special District Leadership Academy, November 3-6, 2024, San Rafael, CA.

**9. Miscellaneous:**

a. Staff Report – Dunn announced that Colin Bishop will join CCCERA August 20, 2024 as the Deputy CEO. She also reported on the first Employer Workshop, which was well received and provided highlights from this year's Staff Development Day.

   Price reported on recent commitments CCCERA has made to private equity buyout funds.

b. Outside Professionals' Report – None

c. Trustees' Comments – Sloan will resend a draft of the upcoming CCCREA conference. MacDonald requested that we adjourn today's meeting in honor of two County Doctors that recently passed.

It was **M/S/C** to adjourn the meeting in honor of the memory of Dr. Charles Berletti and Dr. Stephen Daniels who both served Contra Costa County for many years. (Yes: Andersen, Chebotarev, Gordon, Holcombe, Kroll, MacDonald, Mierzwa, Phillips, and Wong)

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|---|---|
| ___________________________ | ___________________________ |
| Scott W. Gordon, Chairperson | Jerry R. Holcombe, Secretary |

Meeting Date
09/11/2024
Agenda Item
#4.A-IIIa.

# CERTIFICATION OF MEMBERSHIPS

| Name | Employee Number | Tier | Membership Date | Employer |
|---|---|---|---|---|
| Abbott, Nicole | 94300 | P5.2 | 07/01/24 | Contra Costa County |
| Ablao, Nina | 95310 | P5.2 | 07/01/24 | Contra Costa County |
| Aguilar Lopez, Armando | 95188 | P5.2 | 07/01/24 | Contra Costa County |
| Aguilar, Martin | 86169 | P5.2 | 07/01/24 | Contra Costa County |
| Allen, Read | 95182 | P5.2 | 07/01/24 | Contra Costa County |
| Andrade, Aaron Paule | 94357 | P5.2 | 07/01/24 | Contra Costa County |
| Anduha, Javier | 95290 | P5.2 | 07/01/24 | Contra Costa County |
| Angelini Texeira Dos Santos, Ricardo | 95272 | S/E | 07/01/24 | Contra Costa County |
| Antonio, Lawrence | 95168 | P5.2 | 07/01/24 | Contra Costa County |
| Armani, Mona | 95157 | P5.2 | 07/01/24 | Contra Costa County |
| Baez, Emmanuel | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Bail Castanon, Milton | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Basker, Taylor | 95289 | P5.2 | 07/01/24 | Contra Costa County |
| Bautista, Derrick | 95230 | P5.2 | 07/01/24 | Contra Costa County |
| Beardsley, Cynthia | 95128 | P5.2 | 07/01/24 | Contra Costa County |
| Bell, Robert | 95139 | P5.2 | 07/01/24 | Contra Costa County |
| Bennett, Ryan | 95247 | P5.2 | 07/01/24 | Contra Costa County |
| Bernal, Juan | 95318 | P5.2 | 07/01/24 | Contra Costa County |
| Borja, Issa Cassandra | 95156 | P5.2 | 07/01/24 | Contra Costa County |
| Branch, Robert | 95179 | S/E | 07/01/24 | Contra Costa County |
| Breismeister, Banu | 95150 | P5.2 | 07/01/24 | Contra Costa County |
| Brelland, Tiffany | 95220 | P5.2 | 07/01/24 | Contra Costa County |
| Brunner, Johanna | 95239 | P5.2 | 07/01/24 | Contra Costa County |
| Camacho, Angelina | 95248 | P5.2 | 07/01/24 | Contra Costa County |
| Campos, Jaahaira | 95206 | P5.2 | 07/01/24 | Contra Costa County |
| Censoplano, Jessica | 92919 | P5.2 | 07/01/24 | Contra Costa County |
| Dang, Hoang | 95210 | P5.2 | 07/01/24 | Contra Costa County |
| Day, Hana | 95320 | P5.2 | 07/01/24 | Contra Costa County |
| De Rivera Salonga, Camille | 94259 | P5.2 | 07/01/24 | Contra Costa County |
| Delchiaro, Richard | 95197 | P5.2 | 07/01/24 | Contra Costa County |
| Do, Bong | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Duplessis III, Carel | 94348 | P5.2 | 07/01/24 | Contra Costa County |
| Durrenberger, Joseph | 95228 | I | 07/01/24 | Contra Costa County Fire Protection District |
| Ellis, Maya | 95246 | P5.2 | 07/01/24 | Contra Costa County |

**Key:**

| | | |
|---|---|---|
| I = Tier I | P4.2 = PEPRA Tier 4 (2% COLA) | S/A = Safety Tier A |
| II = Tier II | P4.3 = PEPRA Tier 4 (3% COLA) | S/C = Safety Tier C |
| III = Tier III | P5.2 = PEPRA Tier 5 (2% COLA) | S/D = Safety Tier D |
| | P5.3 = PEPRA Tier 5 (3% COLA) | S/E = Safety Tier E |

## *CERTIFICATION OF MEMBERSHIPS*

| *Name* | *Employee Number* | *Tier* | *Membership Date* | *Employer* |
|---|---|---|---|---|
| Erickson, Lindsay | 93442 | P5.2 | 07/01/24 | Contra Costa County |
| Everett, Kenneth | 95215 | P5.2 | 07/01/24 | Contra Costa County |
| Fajardo, Rosanna | 95302 | P5.2 | 07/01/24 | Contra Costa County |
| Fasanya, Nihinlola | 95311 | P5.2 | 07/01/24 | Contra Costa County |
| Flores, Kiaria | 95300 | P5.2 | 07/01/24 | Contra Costa County |
| Freitas, Isaac | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Galvan, Mary | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Garibay, Andres | 95187 | P5.2 | 07/01/24 | Contra Costa County |
| Garibay, Antonio | 80260 | S/E | 07/01/24 | Contra Costa County Fire Protection District |
| Ghufran, Arjumand | 95231 | P5.2 | 07/01/24 | Contra Costa County |
| Gibson, Kobe | 95192 | P5.2 | 07/01/24 | Contra Costa County |
| Giroux, Jason | 95218 | P5.2 | 07/01/24 | Contra Costa County |
| Gomez III, Jeremias | 95255 | P5.2 | 07/01/24 | Contra Costa County |
| Guillen, Roxana | 95292 | P5.2 | 07/01/24 | Contra Costa County |
| Guillen, Victor | 88815 | P5.2 | 07/01/24 | Contra Costa County |
| Gutierrez, Angelica | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Halvorson, Tiffany | 95229 | I | 07/01/24 | Contra Costa County Fire Protection District |
| Harris, Samantha | 95135 | P5.2 | 07/01/24 | Contra Costa County |
| Hernandez Jimenez, Miguel | 90539 | P5.2 | 07/01/24 | Contra Costa County |
| Hernandez Santos, Luis | 95198 | P5.2 | 07/01/24 | Contra Costa County |
| Hernandez, Laura | 95312 | P5.2 | 07/01/24 | Contra Costa County |
| Hilahan, Tristan | 95123 | P5.2 | 07/01/24 | Contra Costa County |
| Hill, Arlee | D3414 | P4.3 | 07/01/24 | Rodeo Sanitary District |
| Hollister, Travis | 95173 | P5.2 | 07/01/24 | Contra Costa County |
| Holterman, Alex | 95180 | P5.2 | 07/01/24 | Contra Costa County |
| Howard-Gibbon, Charlotte | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Huerta, Michelle | 94377 | P5.2 | 07/01/24 | Contra Costa County |
| Huffstutler, Sabrina | 95309 | P5.2 | 07/01/24 | Contra Costa County |
| Hughes, Carizma | 95256 | P5.2 | 07/01/24 | Contra Costa County |
| Irasga, Irene Anne  Jewel | 95153 | P5.2 | 07/01/24 | Contra Costa County |
| Iyra, Puja | 95194 | P5.2 | 07/01/24 | Contra Costa County |
| Jayawickrama, Shehani | 95189 | P5.2 | 07/01/24 | Contra Costa County |
| Jimenez, Jose | 95277 | S/E | 07/01/24 | Contra Costa County |

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| **III = Tier III** | **P5.2 = PEPRA Tier 5 (2% COLA)** | **S/D = Safety Tier D** |
| | **P5.3 = PEPRA Tier 5 (3% COLA)** | **S/E = Safety Tier E** |

## *CERTIFICATION OF MEMBERSHIPS*

| *Name* | *Employee Number* | *Tier* | *Membership Date* | *Employer* |
|---|---|---|---|---|
| Jones, Victoria | 95299 | P5.2 | 07/01/24 | Contra Costa County |
| Khashitsang, Tsering | 95087 | P5.2 | 07/01/24 | Contra Costa County |
| Klug, Emma | 95233 | P5.2 | 07/01/24 | Contra Costa County |
| Krulj, Nemanja | 95190 | P5.2 | 07/01/24 | Contra Costa County |
| Krutzsch, Robin | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Law, Hiu Suen | 95258 | P5.2 | 07/01/24 | Contra Costa County |
| Lawson, Morgan | 95276 | S/E | 07/01/24 | Contra Costa County |
| Leadebal, Rosana | 95119 | P5.2 | 07/01/24 | Contra Costa County |
| Lee, Linus | 95307 | P5.2 | 07/01/24 | Contra Costa County |
| Leggett, Cindy | 95208 | P5.2 | 07/01/24 | Contra Costa County |
| Leon, Jimmy | 93920 | P5.2 | 07/01/24 | Contra Costa County |
| Lewis, John | 95165 | P5.2 | 07/01/24 | Contra Costa County |
| Lopez, Natalie | 95303 | P5.2 | 07/01/24 | Contra Costa County |
| Machado De Sousa, Adriana | 95223 | P5.2 | 07/01/24 | Contra Costa County |
| Marez, Zachary | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Maristany, Sumiko | 95238 | P5.2 | 07/01/24 | Contra Costa County |
| Masarira, Godfrey | 95282 | P5.2 | 07/01/24 | Contra Costa County |
| McAusland, Jessica | 95298 | P5.2 | 07/01/24 | Contra Costa County |
| McGuire, Kailey | 95183 | P5.2 | 07/01/24 | Contra Costa County |
| McMurrian, Venus | 95265 | P5.2 | 07/01/24 | Contra Costa County |
| Mendez Morales, Luis | 93928 | P5.2 | 07/01/24 | Contra Costa County |
| Mendoza, Martha | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Muiruri, Catherine | 94871 | P5.2 | 07/01/24 | Contra Costa County |
| Mullarkey, Andrea | 95267 | III | 07/01/24 | Contra Costa County |
| Muzac, Teresa | 95149 | P5.2 | 07/01/24 | Contra Costa County |
| Nicholas, Webaza | 95244 | P5.2 | 07/01/24 | Contra Costa County |
| Ormerod, Joseph | 92597 | S/E | 07/01/24 | Contra Costa County Fire Protection District |
| Padilla, Anthony | 95304 | S/E | 07/01/24 | Contra Costa County |
| Parella, Madison | 95250 | P5.2 | 07/01/24 | Contra Costa County |
| Partain, Chloe | 95137 | P5.2 | 07/01/24 | Contra Costa County |
| Peavy, KeAndre | 95262 | P5.2 | 07/01/24 | Contra Costa County |
| Peon Del Valle, Michelle | D3406 | P4.3 | 07/01/24 | Central Contra Costa Sanitary District |
| Peralta, Dexter | 95319 | P5.2 | 07/01/24 | Contra Costa County |

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| **III = Tier III** | **P5.2 = PEPRA Tier 5 (2% COLA)** | **S/D = Safety Tier D** |
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## *CERTIFICATION OF MEMBERSHIPS*

| *Name* | *Employee Number* | *Tier* | *Membership Date* | *Employer* |
|---|---|---|---|---|
| Perez III, Exequiel | 94670 | P5.2 | 07/01/24 | Contra Costa County |
| Pierce, Andrew | 84607 | P5.2 | 07/01/24 | Contra Costa County |
| Prince, Jamaria | 89295 | P5.2 | 07/01/24 | Contra Costa County |
| Putnam, Cory | 95164 | P5.2 | 07/01/24 | Contra Costa County |
| Quintero, Stephanie | 95199 | P5.2 | 07/01/24 | Contra Costa County |
| Rahimi, Roshun | 95236 | P5.2 | 07/01/24 | Contra Costa County |
| Raj, Romit | 95291 | P5.2 | 07/01/24 | Contra Costa County |
| Range, Kweli | 95141 | P5.2 | 07/01/24 | Contra Costa County |
| Ren, Megan | 95196 | P5.2 | 07/01/24 | Contra Costa County |
| Rivera Hernandez, Diego | 95288 | P5.2 | 07/01/24 | Contra Costa County |
| Rodacker, Tiffany | 95294 | P5.2 | 07/01/24 | Contra Costa County |
| Rojas-Melendez, Natalie | 95144 | P5.2 | 07/01/24 | Contra Costa County |
| Sabale-Love, Rolyn | 95148 | P5.2 | 07/01/24 | Contra Costa County |
| Salazar Rodriguez, Denis | 95142 | P5.2 | 07/01/24 | Contra Costa County |
| Saldana, Adrian | 95185 | P5.2 | 07/01/24 | Contra Costa County |
| Samayoa, Christopher | 95169 | P5.2 | 07/01/24 | Contra Costa County |
| Sanchez, David | 95186 | P5.2 | 07/01/24 | Contra Costa County |
| Sayavong, Phongsy | D3414 | P4.3 | 07/01/24 | Rodeo Sanitary District |
| Scipi, Keith | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Sellote, Francilyn | 95212 | P5.2 | 07/01/24 | Contra Costa County |
| Seoane, Allison | 95251 | P5.2 | 07/01/24 | Contra Costa County |
| Serrano Archundia, Edwin | 95266 | P5.2 | 07/01/24 | Contra Costa County |
| Sevilla, Dante | 95271 | P5.2 | 07/01/24 | Contra Costa County |
| Shaw, Riley | 92409 | S/E | 07/01/24 | Contra Costa County Fire Protection District |
| Simonds, Jessica | D9500 | III | 07/01/24 | Contra Costa County Superior Courts |
| Smith, Chelsea | 95200 | P5.2 | 07/01/24 | Contra Costa County |
| Spassova, Cherry Rose | 95118 | P5.2 | 07/01/24 | Contra Costa County |
| Spivack, Sarah | 95235 | P5.2 | 07/01/24 | Contra Costa County |
| Steininger, Cornelia | 95120 | P5.2 | 07/01/24 | Contra Costa County |
| Takeda, Caitlin | 95237 | P5.2 | 07/01/24 | Contra Costa County |
| Tang, Eric | 95284 | P5.2 | 07/01/24 | Contra Costa County |
| Taper, Crystal | 78744 | III | 07/01/24 | Contra Costa County |
| Teasley, Da Vina | 95270 | P5.2 | 07/01/24 | Contra Costa County |
| Thomas, Dorte | 95201 | P5.2 | 07/01/24 | Contra Costa County |
| Thompson, Shalon | 95273 | P5.2 | 07/01/24 | Contra Costa County |

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## *CERTIFICATION OF MEMBERSHIPS*

| *Name* | *Employee Number* | *Tier* | *Membership Date* | *Employer* |
|---|---|---|---|---|
| Tonne, Tia | 95301 | P5.2 | 07/01/24 | Contra Costa County |
| Torrez, Amanda | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Tran-Mortel, Kevin | 95152 | P5.2 | 07/01/24 | Contra Costa County |
| Tune, Shauna | 92835 | P5.2 | 07/01/24 | Contra Costa County |
| Valle, Damian | 95249 | P5.2 | 07/01/24 | Contra Costa County |
| Vescio, Gianna | 95269 | P5.2 | 07/01/24 | Contra Costa County |
| Vo, Joanne | 86779 | P5.2 | 07/01/24 | Contra Costa County |
| Vorous, Alanna | 95122 | P5.2 | 07/01/24 | Contra Costa County |
| Wada, Robin | 95172 | P5.2 | 07/01/24 | Contra Costa County |
| Wahl-Polivka, Elizabeth | 95313 | P5.2 | 07/01/24 | Contra Costa County |
| Walker, Alexandria | 95184 | P5.2 | 07/01/24 | Contra Costa County |
| West, Kristiana | D9500 | P5.3 | 07/01/24 | Contra Costa County Superior Courts |
| Wildman, Marina | 95147 | P5.2 | 07/01/24 | Contra Costa County |
| Williams, Breanna | 95242 | P5.2 | 07/01/24 | Contra Costa County |
| Wirbick, Cody | 95191 | P5.2 | 07/01/24 | Contra Costa County |
| Wong, Annjulie | 95278 | P5.2 | 07/01/24 | Contra Costa County |
| Woods, Danyeil | 95232 | P5.2 | 07/01/24 | Contra Costa County |
| Yang, Yihui | 95234 | P5.2 | 07/01/24 | Contra Costa County |
| Young, Tamarraa | 95217 | P5.2 | 07/01/24 | Contra Costa County |

**Key:**

| | | |
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| **III = Tier III** | **P5.2 = PEPRA Tier 5 (2% COLA)** | **S/D = Safety Tier D** |
| | **P5.3 = PEPRA Tier 5 (3% COLA)** | **S/E = Safety Tier E** |

## *TIER CHANGES*

| *Name* | *Employee Number* | *Old Tier* | *New Tier* | *Effective Date* | *Employer* | *Reason for Change* |
|---|---|---|---|---|---|---|
| Dillion, Travis | D3406 | P4.3 | I | 6/1/2024 | Central Contra Costa Sanitary District | Rehire - Age & Tier Correction |

**Key:**

| | | |
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| III = Tier III | P5.2 = PEPRA Tier 5 (2% COLA) | S/D = Safety Tier D |
| | P5.3 = PEPRA Tier 5 (3% COLA) | S/E = Safety Tier E |

Meeting Date
09/11/2024
Agenda Item
#4.A-IIIb.

# *SERVICE & DISABILITY RETIREMENT ALLOWANCES*

| *Name* | *Number* | *Effective Date* | *Option Type* | *Tier* | *Selected* |
|---|---|---|---|---|---|
| Ames, Trisha | D7830 | 07/01/24 | SR | I | Unmodified |
| Badler, Scott | 70230 | 07/01/24 | SR | I | Unmodified |
| Crenshaw, Kendra | 64124 | 06/26/24 | SR | II and III | Unmodified |
| Draper, Shelly | 65281 | 06/29/24 | SR | II and III | Unmodified |
| Encarnacion, Carmen | 72256 | 07/01/24 | SR | III | Unmodified |
| Hill, Barbara | 81889 | 06/20/24 | SR | PEPRA 5.2 | Unmodified |
| Holmes, Nichelle | 77088 | 07/01/24 | SR | III | Unmodified |
| Horsfield, Christopher | 70328 | 02/04/23 | SR | III | Option 1 |
| Isidro, Joselito | 65736 | 06/30/24 | SR | III | Unmodified |
| Jung, Kathryn | 49748 | 06/29/24 | SR | I | Unmodified |
| Kim, Vivian | 79445 | 06/29/24 | SR | PEPRA 5.3 | Unmodified |
| Linan, Jose | 51271 | 06/11/24 | SR | II | Unmodified |
| Linan, Roda | 54060 | 06/11/24 | SR | II and III | Unmodified |
| Lozano, Vikki | D3406 AP | 06/01/24 | SR | I | Unmodified |
| Manalo, Zenaida | 78047 | 05/28/24 | SR | PEPRA 5.3 | Unmodified |
| Mills, Brittanie | 61684 | 06/15/24 | SR | II and III | Unmodified |
| Monahan, Patricia | 43879 | 06/29/24 | SR | II | Unmodified |
| Moreland, Andrea | 55494 | 06/03/24 | SR | Safety A | Unmodified |
| Tilley, Wayne | 74215 | 05/16/24 | SR | III | Unmodified |
| Woodhouse, Dave | 67244 | 06/30/24 | SR | III | Unmodified |

**Option Type**
NSP = Non-Specified
SCD = Service Connected Disability
SR = Service Retirement
NSCD = Non-Service Connected Disability
* = County Advance Selected w/option

**Tier**
I = Tier I
II = Tier II
III = Tier III
S/A = Safety Tier A
S/C = safety Tier C
Pepra 4.2 = Pepra Tier 4 (2% COLA)
Pepra 4.3 = Pepra Tier 4 (3% COLA)
Pepra 5.2 = Pepra Tier 5 (2% COLA)
Pepra 5.3 = Pepra Tier 5 (3% COLA)
S/D = Pepra Safety Tier D
S/E = Pepra Safety Tier E

Meeting Date
09/11/2024
Agenda Item
#4.A-IIIc.

# *DEATHS*

| *Name* | *Date of Death* | *Employer as of Date of Death* |
|---|---|---|
| Bedgood, Calvin | 07/16/24 | Contra Costa County Fire Protection District |
| Bittenbender, Lauri | 07/11/24 | Contra Costa County |
| Douglas, Keith | 07/29/24 | Contra Costa County |
| Khoury, George | 07/31/24 | Contra Costa County |
| King, Lee | 08/04/23 | Contra Costa County |
| Lang, Margory | 07/31/24 | Contra Costa County |
| Marlow, Darlene | 07/28/24 | Contra Costa County |
| Perona, John | 07/15/24 | Contra Costa County |
| Peyrucain, Eugene | 08/05/24 | Central Contra Costa Sanitary District |
| Phillipson, Shirley | 08/11/24 | Contra Costa County |
| Wessel, Janet | 07/11/24 | Contra Costa County |
| Woods, Ralph | 07/01/24 | Contra Costa County |

Meeting Date
09/11/2024
Agenda Item
#4.A-IIId.

CCCERA
Contra Costa County Employees' Retirement Association

**Contra Costa County Employees' Retirement Association**
**Liquidity Report – July 2024**

### July 2024 Performance

| | Cash Flow | Coverage Ratio |
|---|---|---|
| Benefit Cash Flow Projected by Model | $52,250,000 | |
| Liquidity Sub-Portfolio Cash Flow | $52,250,000 | 100% |
| Actual Benefits Paid | $52,864,645 | 98.8% |
| *Next Month's Projected Benefit Payment* | *$53,500,000* | |

### Monthly Manager Positioning – July 2024

| | Beginning Market Value | Liquidity Program Cash Flow | Market Value Change/Other Activity | Ending Market Value |
|---|---|---|---|---|
| DFA | $367,733,492 | ($11,500,000) | $2,107,341 | $358,340,832 |
| Insight | $599,621,524 | ($19,500,000) | $5,588,327 | $585,709,851 |
| Sit | $630,005,024 | ($21,250,000) | $10,994,917 | $619,749,941 |
| **Liquidity** | **$1,597,360,040** | **($52,250,000)** | **$18,690,584** | **$1,563,800,624** |
| Cash | $242,019,365 | ($614,645) | $352,376,730 | $593,781,450 |
| **Liquidity + Cash** | **$1,839,379,405** | **($52,864,645)** | **$371,067,315** | **$2,157,582,074** |

### Functional Roles

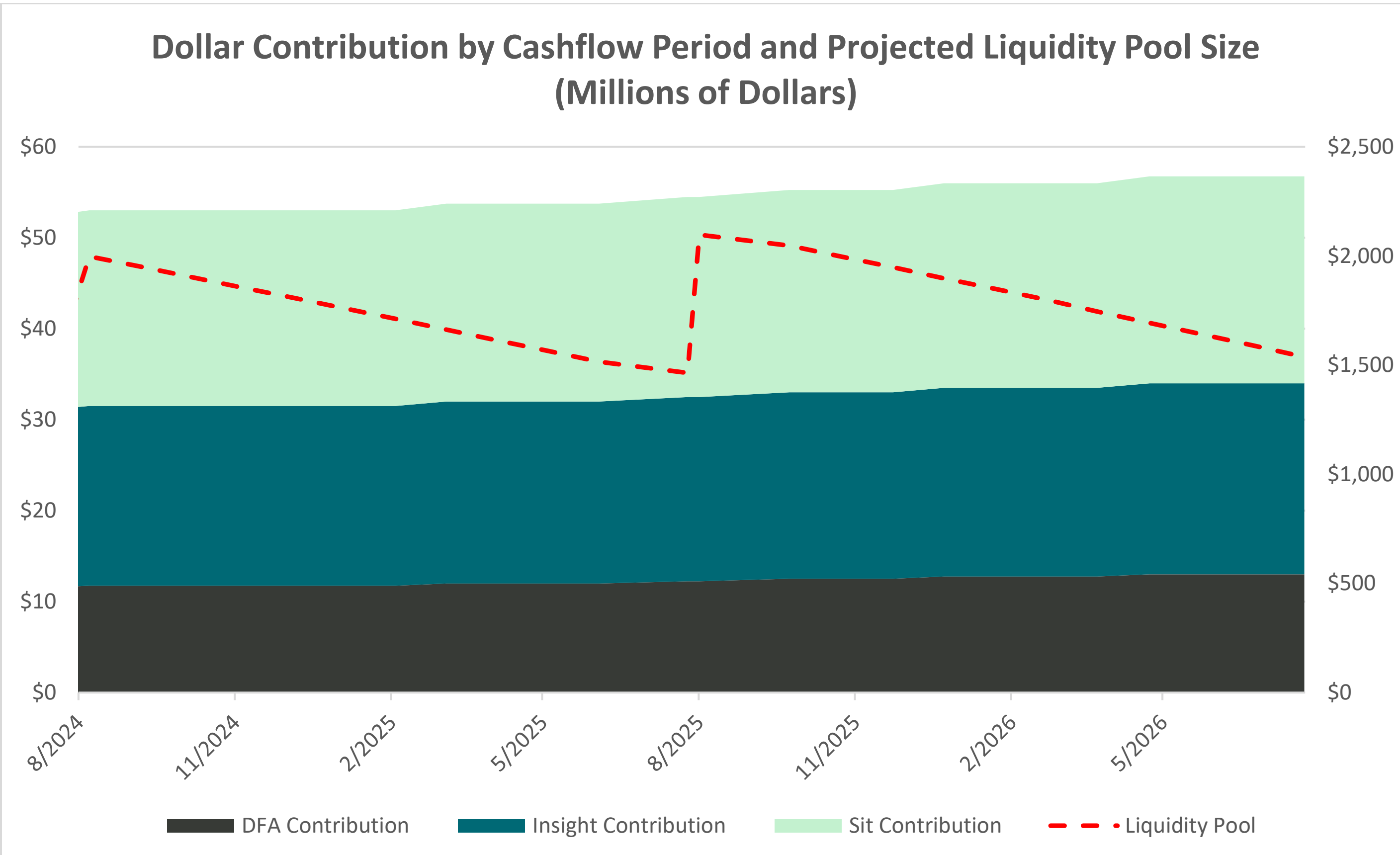
| Manager | Portfolio Characteristics | Liquidity Contribution |
|---|---|---|
| Sit | High quality portfolio of small balance, government guaranteed mortgages with higher yields. | Pays out net income on monthly basis. |
| DFA | High quality, short duration portfolio of liquid, low volatility characteristics. | Pays out a pre-determined monthly amount. DFA sources liquidity from across their portfolio. |
| Insight | Buy and maintain (limited trading) portfolio of high quality, short duration, primarily corporates. | Completion portfolio makes a payment through net income and bond maturities that bridges the gap between other managers and projected payment. |
| Cash | STIF account at custodial bank. | Buffer in the event of any Liquidity shortfall/excess. |

### Notes

The seventh cash flow for 2024 from the liquidity program was completed on July 23rd. The actuarial model cash flow was lower than actual experience, producing $614 thousand less than the actual benefits paid.

**Cash Flow Structure**

The chart below shows the sources of cash flow for the next three years of CCCERA's projected benefit payments. This table will change slightly as the model is tweaked and as the portfolios receive new rounds of funding each July as part of the Annual Funding Plan.



Meeting Date
09/11/2024
Agenda Item
#4.A-IVa.

# DISABILITY RETIREMENT APPLICATIONS

*The Board's Hearing Officer is hereby authorized to issue subpoenas in the following cases involving disability applications:*

| *Name* | *Number* | *Filed* | *Type* |
|---|---|---|---|
| Childs, Dwight | 84754 | 07/31/24 | SCD |
| Hooker, Mary | 78529 | 08/15/24 | SCD |
| Viernes, Neila | 78928 | 08/23/24 | SCD |

**Option Type**
NSP = Non-Specified
SCD = Service Connected Disability
SR = Service Retirement
NSCD = Non-Service Connected Disability
* = County Advance Selected w/option

**Tier**
I = Tier I
II = Tier II
III = Tier III
S/A = Safety Tier A
S/C = safety Tier C
Pepra 4.2 = Pepra Tier 4 (2% COLA)
Pepra 4.3 = Pepra Tier 4 (3% COLA)
Pepra 5.2 = Pepra Tier 5 (2% COLA)
Pepra 5.3 = Pepra Tier 5 (3% COLA)
S/D = Pepra Safety Tier D
S/E = Pepra Safety Tier E

Meeting Date
09/11/2024
Agenda Item
#4.A-IVb.

**Contra Costa County Employees' Retirement Association**
**Asset Allocation as of July 31, 2024**

| | Market Value | Percentage of Total Fund | Current Target* Percentage | Current Target Over/(Under) | Long Term Target | Long Term Over/(Under) |
|---|---|---|---|---|---|---|
| **Liquidity** | | | | | | |
| Dimensional Fund Advisors | 358,340,832 | 3.0% | 4.0% | -1.0% | | |
| Insight | 585,709,851 | 5.0% | 6.5% | -1.5% | | |
| Sit | 619,749,941 | 5.3% | 6.5% | -1.2% | | |
| **Total Liquidity** | **1,563,800,624** | **13.3%** | **17.0%** | **-3.7%** | **17.0%** | **-3.7%** |
| | | **Range 11-22%** | | | | |
| **Growth** | | | | | | |
| **Domestic Equity** | | | | | | |
| Boston Partners | 443,120,564 | 3.8% | 3.0% | 0.8% | | |
| BlackRock Index Fund | 1,305,202,423 | 11.1% | 10.0% | 1.1% | | |
| Emerald Advisers | 235,355,493 | 2.0% | 1.5% | 0.5% | | |
| Ceredex | 218,287,072 | 1.9% | 1.5% | 0.4% | | |
| **Total Domestic Equity** | 2,201,965,552 | 18.7% | 16.0% | 2.7% | 13.0% | 5.7% |
| **Global & International Equity** | | | | | | |
| Pyrford (Columbia) | 515,801,241 | 4.4% | 4.0% | 0.4% | | |
| William Blair | 485,791,922 | 4.1% | 4.0% | 0.1% | | |
| First Eagle | 631,001,409 | 5.4% | 5.0% | 0.4% | | |
| Artisan Global Opportunities | 628,880,960 | 5.3% | 5.0% | 0.3% | | |
| PIMCO/RAE Emerging Markets | 274,983,019 | 2.3% | 2.0% | 0.3% | | |
| TT Emerging Markets | 258,146,074 | 2.2% | 2.0% | 0.2% | | |
| **Total Global & International Equity** | 2,794,604,625 | 23.8% | 22.0% | 1.8% | 19.0% | 4.8% |
| **Private Equity**** | 1,115,724,165 | 9.5% | 13.0% | -1.8% | 15.0% | -5.5% |
| **Real Assets/Infrastructure**** | 201,302,759 | 1.7% | 0.0% | | 3.0% | -1.3% |
| **Private Credit** | 1,171,789,299 | 10.0% | 10.0% | -0.0% | 13.0% | -3.0% |
| **Real Estate - Value Add** | 260,366,424 | 2.2% | 4.0% | -1.8% | 5.0% | -2.8% |
| **Real Estate - Opportunistic & Distressed** | 316,334,597 | 2.7% | 4.0% | -1.3% | 5.0% | -2.3% |
| **Real Estate - REIT** | | | 2.0% | -0.1% | 0.0% | 1.9% |
| Adelante | 102,683,207 | 0.9% | | | | |
| Invesco | 123,187,772 | 1.0% | | | | |
| **High Yield** | 164,455,420 | 1.4% | 2.0% | -0.6% | 0.0% | 1.4% |
| **Risk Parity** | | | 3.0% | 0.0% | 3.0% | 0.0% |
| AQR GRP EL | 187,774,867 | 1.6% | | | | |
| PanAgora | 170,819,225 | 1.5% | | | | |
| **Total Other Growth Assets** | 3,814,437,734 | 32.4% | 38.0% | -5.6% | 44.0% | -11.6% |
| **Total Growth Assets** | **8,811,007,911** | **74.9%** | **76.0%** | **-1.1%** | **76.0%** | **-1.1%** |
| | | **Range 65-85%** | | | | |
| **Risk Diversifying** | | | | | | |
| AFL-CIO | 224,728,193 | 1.9% | 2.5% | -0.6% | 2.5% | -0.6% |
| BH-DG Systematic | 189,138,660 | 1.6% | 2.0% | | 2.5% | |
| Sit LLCAR | 383,617,798 | 3.3% | 2.5% | 0.8% | 2.0% | 1.3% |
| **Total Risk Diversifying** | **797,484,651** | **6.8%** | **7.0%** | -0.2% | **7.0%** | **-0.2%** |
| | | **Range 0% - 10%** | | | | |
| **Cash and Overlay** | | | | | | |
| Overlay (Parametric) | 136,655,380 | 1.2% | | 1.2% | | |
| Cash | 457,126,069 | 3.9% | | 3.9% | | |
| **Total Cash and Overlay** | **593,781,450** | **5.0%** | **0.0%** | 5.0% | **0.0%** | **5.0%** |
| **Total Fund** | **11,766,074,636** | **100%** | **100%** | | **100%** | |

*Current targets and ranges reflect asset allocation targets accepted by the Board on April 24, 2024 (BOR Resolution 2024-3).
**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

# Private Market Investments
## As of July 30, 2024

| REAL ESTATE - Value Add | Inception Date | Target Termination | # of Extension | Discretion by GP/LP | New Target Termination | Funding Commitment | Market Value | % of Total Asset | Outstanding Commitment |
|---|---|---|---|---|---|---|---|---|---|
| Blackstone Strategic Partners Real Estate VIII | 11/18/22 | 11/18/32 | | | | 80,000,000 | 18,246,283 | 0.16% | 63,136,759 |
| EQT Exeter Industrial Value Fund VI | 06/02/23 | 06/02/31 | | | | 60,000,000 | 13,862,806 | 0.12% | 45,000,000 |
| Invesco IREF IV | 12/01/14 | 12/01/21 | | | | 35,000,000 | 102,165 | 0.00% | 4,453,599 |
| Invesco IREF V | 09/11/18 | 09/11/25 | | | | 75,000,000 | 57,133,237 | 0.49% | 6,581,100 |
| Invesco IREF VI | 09/21/21 | 09/22/29 | | | | 100,000,000 | 49,956,994 | 0.42% | 40,854,740 |
| Long Wharf FREG IV | 08/14/13 | 09/30/21 | | | | 25,000,000 | 107,487 | 0.00% | |
| Long Wharf FREG V | 10/31/16 | 09/30/24 | | | | 50,000,000 | 25,015,078 | 0.21% | |
| Long Wharf LREP VI | 02/05/20 | 02/05/28 | | | | 50,000,000 | 33,474,748 | 0.28% | 361,552 |
| Long Wharf LREP VII | 05/15/23 | 03/31/32 | | | | 50,000,000 | 13,651,003 | 0.12% | 35,166,246 |
| LaSalle Income & Growth Fund VI | 01/31/12 | 01/31/19 | | | | 75,000,000 | 11,502,890 | 0.10% | 3,946,000 |
| LaSalle Income & Growth Fund VII | 10/31/16 | 09/30/24 | | | | 75,000,000 | 22,868,035 | 0.19% | 87,245 |
| Stockbridge Value Fund V | 04/19/24 | 04/19/34 | | | | 60,000,000 | 14,445,698 | 0.12% | 45,554,302 |
| | | | | | | **980,000,000** | **260,366,424** | **2.21%** | **245,141,543** |
| | **Outstanding Commitments** | | | | | | **245,141,543** | | |
| | **Total** | | | | | | **505,507,967** | | |

| REAL ESTATE -Opportunistic & Distressed | Inception Date | Target Termination | # of Extension | Discretion by GP/LP | New Target Termination | Funding Commitment | Market Value | % of Total Asset | Outstanding Commitment |
|---|---|---|---|---|---|---|---|---|---|
| Blackstone BREP X | 06/30/22 | 06/30/32 | | | | 100,000,000 | 25,104,241 | 0.21% | 76,922,178 |
| Cross Lake Real Estate Fund IV | 04/11/23 | 04/11/33 | | | | 60,000,000 | 2,019,431 | 0.02% | 57,008,212 |
| DLJ Real Estate Capital Partners, L.P. III | 06/30/05 | 06/30/14 | in full liq. | | | 75,000,000 | 11,272,264 | 0.10% | 4,031,338 |
| DLJ Real Estate Capital Partners, L.P. IV | 12/31/07 | 09/30/18 | | | | 100,000,000 | 35,422,822 | 0.30% | 1,876,084 |
| DLJ Real Estate Capital Partners, L.P. V | 07/31/13 | 12/31/22 | | | | 75,000,000 | 12,259,819 | 0.10% | 535,678 |
| DLJ Real Estate Capital Partners, L.P. VI | 02/28/19 | 01/31/29 | | | | 50,000,000 | 14,770,144 | 0.13% | 7,508,205 |
| KSL Capital VI | 10/24/23 | 10/24/33 | | | | 50,000,000 | 8,441,560 | 0.07% | 40,270,596 |
| Oaktree Real Estate Opportunities Fund V | 02/01/11 | 02/01/21 | | | | 50,000,000 | 307,098 | 0.00% | 25,750,000 |
| Oaktree Real Estate Opportunities Fund VI | 09/30/13 | 09/30/20 | | | | 80,000,000 | 16,756,778 | 0.14% | 18,400,000 |
| Oaktree Real Estate Opportunities Fund VII | 02/28/15 | 02/28/23 | | | | 65,000,000 | 37,717,749 | 0.32% | 16,120,000 |
| PCCP Equity IX | 04/11/22 | 04/01/30 | | | | 75,000,000 | 67,259,199 | 0.57% | 16,031,770 |
| Siguler Guff Distressed Real Estate Opp. Fund | 07/30/11 | 07/30/22 | | | | 75,000,000 | 11,181,174 | 0.10% | 5,625,000 |
| Siguler Guff Distressed Real Estate Opp. Fund II | 08/31/13 | 08/31/25 | | | | 70,000,000 | 24,738,654 | 0.21% | 8,015,000 |
| Siguler Guff Distressed Real Estate Opp. II Co-Inv | 01/31/16 | 10/31/25 | | | | 25,000,000 | 11,620,699 | 0.10% | 3,722,138 |
| Paulson Real Estate Fund II | 11/10/13 | 11/10/20 | | | | 20,000,000 | 12,566,601 | 0.11% | 654,377 |
| Angelo Gordon Realty Fund VIII | 12/31/11 | 12/31/18 | | | | 80,000,000 | 8,618,767 | 0.07% | 12,334,302 |
| Angelo Gordon Realty Fund IX | 10/10/14 | 10/10/22 | | | | 65,000,000 | 16,277,597 | 0.14% | 7,572,500 |
| | | | | | | **1,115,000,000** | **316,334,597** | **2.46%** | **302,377,378** |
| | **Outstanding Commitments** | | | | | | **302,377,378** | | |
| | **Total** | | | | | | **618,711,975** | | |

| PRIVATE CREDIT | Inception Date | Target Termination | # of Extension | Discretion by GP/LP | New Target Termination | Funding Commitment | Market Value | % of Total Asset | Outstanding Commitment |
|---|---|---|---|---|---|---|---|---|---|
| Torchlight Debt Opportunity Fund IV | 08/01/12 | 08/30/20 | | | | 60,000,000 | 3,450,275 | 0.03% | 0 |
| Torchlight Debt Opportunity Fund V | 12/31/14 | 09/17/22 | | | | 75,000,000 | 7,525,040 | 0.06% | 15,000,000 |
| Angelo Gordon Energy Credit Opportunities | 09/10/15 | 09/10/20 | | | | 16,500,000 | 328,410 | 0.00% | 2,319,783 |
| CCCERA StepStone | 12/01/17 | 11/30/27 | | | | 1,170,000,000 | 1,160,485,574 | 9.86% | 259,588,449 |
| | | | | | | **1,321,500,000** | **1,171,789,299** | **9.96%** | **276,908,232** |
| | **Outstanding Commitments** | | | | | | **276,908,232** | | |
| | **Total** | | | | | | **1,448,697,531** | | |

## Private Market Investments
## As of July 30, 2024

| PRIVATE EQUITY | Inception Date | Target Termination | # of Extension | Discretion by GP/LP | New Target Termination | Funding Commitment | Market Value | % of Total Asset | Outstanding Commitment |
|---|---|---|---|---|---|---|---|---|---|
| Adams Street Partners | 12/22/95 | 12/22/25 | | | | 269,565,614 | 108,124,013 | 0.92% | 16,200,628 |
| Adams Street Secondary II | 12/31/08 | 12/31/20 | | | | 30,000,000 | 3,223,082 | 0.03% | 1,635,000 |
| Adams Street Secondary V | 10/31/12 | 10/31/22 | | | | 40,000,000 | 10,173,649 | 0.09% | 9,154,125 |
| Adams Street Venture Innovation Fund | 03/09/16 | 03/09/28 | | | | 75,000,000 | 157,150,606 | 1.34% | 5,719,749 |
| AE Industrial Partners Fund II | 05/18/18 | 05/18/28 | | | | 35,000,000 | 36,569,603 | 0.31% | 7,831,761 |
| Altaris Health Partners VI | 07/28/23 | 07/28/33 | | | | 50,000,000 | 0 | 0.00% | 50,000,000 |
| Arbor Investments VI | 07/01/24 | 07/01/34 | | | | 50,000,000 | 0 | 0.00% | 50,000,000 |
| Bay Area Equity Fund | 06/14/04 | 12/31/14 | 2nd 2 YR | LP | 12/31/2017 | 10,000,000 | 0 | 0.00% | 0 |
| Bay Area Equity Fund II | 2/29/09 | 12/31/19 | | | | 10,000,000 | 13,078,593 | 0.11% | 0 |
| Carpenter Community BancFund | 10/31/09 | 10/31/19 | | | | 30,000,000 | 0 | 0.00% | 0 |
| EQT X | 11/17/22 | 11/17/32 | | | | 100,000,000 | 13,763,327 | 0.12% | 83,603,094 |
| Genstar Capital Partners IX | 02/18/19 | 02/18/29 | | | | 50,000,000 | 70,351,040 | 0.60% | 6,870,140 |
| Genstar Capital Partners X | 04/01/21 | 04/01/31 | | | | 42,500,000 | 41,936,868 | 0.36% | 2,263,973 |
| Genstar Capital Partners XI | 04/26/23 | 04/26/33 | | | | 75,000,000 | 696,637 | 0.01% | 74,682,312 |
| GTCR XIII | 10/27/20 | 12/31/36 | | | | 50,000,000 | 38,405,070 | 0.33% | 13,287,247 |
| GTCR XIV | 01/12/23 | 01/12/33 | | | | 100,000,000 | 118,131 | 0.00% | 100,000,000 |
| Hellman & Friedman Capital Partners X | 05/10/21 | 05/10/31 | | | | 75,000,000 | 59,965,031 | 0.51% | 24,705,082 |
| Hellman & Friedman Capital Partners XI | 12/16/22 | 12/16/32 | | | | 100,000,000 | 0 | 0.00% | 100,000,000 |
| Leonard Green - Green Equity Investors IX | 03/01/22 | 02/28/32 | | | | 60,000,000 | 20,753,827 | 0.18% | 42,773,807 |
| Leonard Green - Jade Equity Investors II | 03/01/22 | 02/28/32 | | | | 15,000,000 | 0 | 0.00% | 15,000,000 |
| Oaktree Private Investment Fund 2009 | 02/28/10 | 12/15/19 | | | | 40,000,000 | 325,151 | 0.00% | 6,308,961 |
| Ocean Avenue Fund II | 05/07/14 | 05/07/24 | | | | 30,000,000 | 16,731,465 | 0.14% | 3,000,000 |
| Ocean Avenue Fund III | 12/09/15 | 12/09/25 | | | | 50,000,000 | 50,014,703 | 0.43% | 3,500,000 |
| Paladin III | 08/15/08 | 08/15/18 | | | | 25,000,000 | 6,672,193 | 0.06% | 387,482 |
| Pathway | 11/09/98 | 05/31/21 | | | | 125,000,000 | 1,522,044 | 0.01% | 10,512,398 |
| Pathway 2008 | 12/26/08 | 12/26/23 | | | | 30,000,000 | 9,232,733 | 0.08% | 2,589,761 |
| Pathway 6 | 05/24/11 | 05/24/26 | | | | 40,000,000 | 22,853,280 | 0.19% | 3,642,788 |
| Pathway 7 | 02/07/13 | 02/07/23 | | | | 70,000,000 | 54,935,379 | 0.47% | 5,359,393 |
| Pathway 8 | 11/23/15 | 11/23/25 | | | | 50,000,000 | 62,668,742 | 0.53% | 3,135,546 |
| Siguler Guff CCCERA Opportunities | 06/03/14 | 05/31/25 | | | | 200,000,000 | 81,288,681 | 0.69% | 28,597,500 |
| Siguler Guff Secondary Opportunities | 12/31/16 | 12/31/26 | | | | 50,000,000 | 0 | 0.00% | 0 |
| Siris Partners IV | 05/18/18 | 05/18/28 | | | | 35,000,000 | 43,090,938 | 0.37% | 3,412,566 |
| Symphony Technology Group VII | 12/21/22 | 12/21/32 | | | | 50,000,000 | 4,832,800 | 0.04% | 43,931,601 |
| TA XIV | 05/27/21 | 05/27/31 | | | | 50,000,000 | 45,506,834 | 0.39% | 3,750,000 |
| TA XV | 03/30/23 | 03/31/33 | | | | 90,000,000 | 0 | 0.00% | 90,000,000 |
| TPG Healthcare Partners, L.P. | 06/27/19 | 06/27/29 | | | | 24,000,000 | 24,622,200 | 0.21% | 3,098,020 |
| TPG Healthcare Partners II | 06/30/22 | 06/30/32 | | | | 60,000,000 | 15,211,913 | 0.13% | 46,233,847 |
| TPG Partners IX | 06/30/22 | 06/30/32 | | | | 65,000,000 | 20,395,229 | 0.17% | 45,898,482 |
| Trident VIII, L.P. | 05/24/19 | 05/24/29 | | | | 40,000,000 | 50,117,112 | 0.43% | 4,699,142 |
| Trident IX, L.P. | 09/17/21 | 09/17/31 | | | | 50,000,000 | 31,393,290 | 0.27% | 21,273,524 |
| **Total: Private Equity** | | | | | | **2,486,065,614** | **1,115,724,165** | **9.48%** | **933,057,929** |

| Real Assets/Infrastructure | Inception Date | Target Termination | # of Extension | Discretion by GP/LP | New Target Termination | Funding Commitment | Market Value | % of Total Asset | Outstanding Commitment |
|---|---|---|---|---|---|---|---|---|---|
| Aether III & III Surplus | 11/30/13 | 11/30/20 | | | | 75,000,000 | 51,398,240 | 0.44% | 1,125,374 |
| Aether IV | 01/01/16 | 01/01/28 | | | | 50,000,000 | 46,719,938 | 0.40% | 5,367,254 |
| Commonfund Capital Natural Resources IX | 06/30/13 | 06/30/20 | | | | 50,000,000 | 35,042,524 | 0.30% | 2,250,007 |
| EIF USPF II | 06/15/05 | 06/15/15 | 3rd 1 YR | LP | 06/15/18 | 50,000,000 | 16,362 | 0.00% | 0 |
| EIF USPF III | 02/28/07 | 02/28/17 | 1st 1 YR | LP | 02/28/18 | 65,000,000 | 2,302,288 | 0.02% | 0 |
| EIF USPF IV | 06/28/10 | 06/28/20 | | | | 50,000,000 | 17,180,911 | 0.15% | 4 |
| Ares EIF V | 09/09/15 | 11/19/25 | | | | 50,000,000 | 28,847,615 | 0.25% | 5,512,350 |
| EQT Infrastructure | 11/15/23 | 11/15/35 | | | | 125,000,000 | 18,122,584 | 0.15% | 99,796,766 |
| Wastewater Opportunity Fund | 12/31/15 | 11/30/22 | | | | 25,000,000 | 1,672,297 | 0.01% | 521,541 |
| **Totall: Real Assets/Infrastructure** | | | | | | **540,000,000** | **201,302,759** | **1.71%** | **114,573,297** |
| **Total: Private Equity and Real Assets/Infrastructure** | | | | | | **3,026,065,614** | **1,317,026,923** | **11.19%** | **1,047,631,225** |

| | |
|---|---|
| **Outstanding Commitments** | **1,047,631,225** |
| **Total** | **2,364,658,149** |

Market value equals the most recent reported net asset value, plus capital calls after net asset value date, less distributions after net asset value date.

## Private Market Investments
## As of July 30, 2024

The Target Termination column is the beginning of liquidation of the fund, however, some funds may be extended for an additional two or three years.

Contra Costa County Employees' Retirement Association

## MEMORANDUM

Date: September 11, 2024

To: CCCERA Board of Retirement

From: Christina Dunn, Chief Executive Officer

Subject: Presentation of Actuarial Audit Report by Cheiron.

---

**Background**

At the February 14, 2024 Board meeting, the Board authorized the issuance of a request for proposals for actuarial auditing services. At the April 22, 2024 Board meeting, the Board selected Cheiron to perform actuarial auditing services, including an audit of the triennial experience and assumptions study prepared by Segal Consulting. Cheiron has concluded their audit of this study and will be presenting their report.

**Recommendation**

Presentation only. No action is necessary at this time.

Classic Values, Innovative Advice

Meeting Date
09/11/2024
Agenda Item
#6

# Contra Costa County Employees' Retirement Association

## Replication Audit of the December 31, 2023 Actuarial Valuation and the December 31, 2020 Experience Study

**Produced by Cheiron**
**September 2024**

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***Via Electronic Mail***

September 3, 2024

Board of Retirement
Contra Costa County Employees' Retirement Association
1200 Concord Avenue, Suite 300
Concord, California 94520

Members of the Board:

Cheiron is pleased to present the results of our actuarial audit of the December 31, 2023 Actuarial Valuation for Contra Costa County Employees' Retirement Association (CCCERA) performed by Segal Consulting (Segal). We would like to thank Segal for providing us with information and explanations that facilitated the actuarial audit process and ensured that our findings are accurate and benefit CCCERA.

We direct your attention to the executive summary section of our report that highlights the key findings of our review. The balance of the report provides details in support of these findings along with supplemental data, background information, and discussion of the process used in the evaluation of the work performed by Segal.

In preparing our report, we relied on information (some oral and some written) supplied by CCCERA and Segal. This information includes, but is not limited to, actuarial assumptions and methods adopted by CCCERA, the plan provisions, employee data, and financial information.

We performed an informal examination of the obvious characteristics of the data for reasonableness in accordance with Actuarial Standard of Practice No. 23. A detailed description of all information provided for this review is provided in the body of our report.

We trained and used a machine learning model developed by Dataiku to perform an independent analysis of the retirement rates proposed by Segal. We have relied on Dataiku as the developer of the model. We have reviewed the model and have a basic understanding of it and have used it in accordance with its original intended purpose. We have not identified any material inconsistencies in the assumptions or other output of the model that would affect this report.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared exclusively for the Contra Costa County Employees' Retirement Association for the purpose described herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other users.

Sincerely,
Cheiron

Anne D. Harper, FSA, EA, MAAA
Principal Consulting Actuary

Graham A. Schmidt, FSA, EA, MAAA, FCA
Principal Consulting Actuary

### SECTION I – EXECUTIVE SUMMARY (Valuation Audit)

## Scope of Assignment

Cheiron performed a complete independent replication of the CCCERA December 31, 2023 Actuarial Valuation. We reviewed the census data provided by CCCERA staff and compared it to the information used by Segal in their draft valuation report dated July 10, 2024. We then performed a full parallel valuation, including the calculation of the projected benefits, Actuarial Liability, and normal cost for all CCCERA members, as well as the employers and employee contribution rates and compared the results to those shown in Segal's actuarial valuation report.

This audit provides CCCERA confirmation that:

- The results reported by Segal can be relied upon,
- The actuarial methods comply with Actuarial Standards of Practice (ASOP), and
- The communication of the actuarial valuation results is complete and reasonable.

## Key Findings and Recommendations

The liabilities and costs computed in the valuation as of December 31, 2023 are materially accurate and were computed in accordance with generally accepted actuarial principles. For the scope of this audit, materiality means the results in the aggregate are within industry standards of plus or minus 5%. Our replication of the measures of plan liabilities and costs is summarized in Table I-1 below. We note that all results are within 5% of Segal's calculation and that the key measurements – the comparison of the Present Value of Future Benefits and the total employer contribution rates – are within 1.5%.

**Table I-1**
**Summary of Valuation Results as of December 31, 2023**
**($ in thousands)**

| | Segal | Cheiron | Ratio |
|---|---|---|---|
| Present Value of Future Benefits | $ 14,728,745 | $ 14,687,517 | 100% |
| Actuarial Liability (AL) | $ 12,438,710 | $ 12,381,570 | 100% |
| Valuation Value of Assets (VVA) | 11,323,477 | 11,323,477 | 100% |
| Unfunded Actuarial Liability (UAL) | $ 1,115,233 | $ 1,058,093 | 95% |
| Funded Percentage on VVA basis | 91.0% | 91.5% | 100% |
| **Contribution Rate by Component** | | | |
| Net Employer Normal Cost Rate | 15.07% | 15.15% | 100% |
| UAL Payment Rate | 13.48% | 13.01% | 97% |
| Total Employer Contribution | 28.55% | 28.15% | 99% |

## SECTION I – EXECUTIVE SUMMARY (Valuation Audit)

We have adjusted our calculations of the Present Value of Benefits and Actuarial Liabilities consistent with the asset transfers that occurred for members who have moved between cost groups as shown on pages 173-175 of Segal's December 31, 2023 actuarial valuation report.

In our audit of the December 31, 2018 valuation, we recommended that Segal modify their methodology for determining the entry age used to allocate costs between future normal costs and the actuarial liability for actives members. Segal had been including reciprocal service as service with CCCERA. With this approach, a member has an actuarial liability the moment they are hired at CCCERA if they have reciprocal service. As part of the prior audit we recommended *not* including reciprocal service in determining a member's entry age, and as part of the current audit we confirmed that Segal now uses this approach.

Also as part of the prior audit, we suggested that Segal include projections of the employer contribution rate and funded status in their report to help the CCCERA Board and stakeholders understand the dynamics of their actuarial funding policies and the impact of the new PEPRA benefit tiers on the future costs of the system. CCCERA staff provided us with Segal's post valuation letters from the December 31, 2022 valuation that show 5-year projected changes to the employer contribution rates for in total and by cost group. We commend Segal for providing these projections. However, we strongly suggest that Segal modify their projections to include an assumption of a transition to the PEPRA tiers, based on a level active population which is consistent with the level percentage of payroll amortization policy and their assumed payroll growth rate.

**SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS**

## Valuation Procedures

Overall, we find that the December 31, 2023 actuarial valuation procedures applied in the reporting of the funded status and the determination of the funding requirements based on the current funding policies and adopted assumptions are reasonable and conform to the ASOPs. This conclusion is based on our review of: the valuation report, the census data used in the valuation, and our parallel valuation using the information described above.

## Valuation Results

Our independent replication of the December 31, 2023 actuarial valuation found no material difference in calculations of plan liabilities, normal costs, Valuation Value of Assets, and overall contribution rates from the amounts calculated by Segal based on the adopted assumptions and methods. Consequently, we conclude that the valuation prepared by Segal for CCCERA as of December 31, 2023 is reasonable and can be relied on by the Board for its intended purpose.

Present Value of Future Benefits

The comparison of the present value of future benefits calculated by Segal and Cheiron indicates how closely we match the application of the assumptions to the census data in the valuation. To confirm that the match is close across all cost groups, a comparison of the Present Value of Benefits for each cost group is shown below in Table II-1. We note that all results are within 2% - a very close match and well below the 5% threshold.

**Table II-1**
**Present Value of Benefits Comparison by Cost Group**
**($ in thousands)**

| | Segal | Cheiron | Ratio |
|---|---|---|---|
| **General** | | | |
| Cost Group 1 - County, Superior Court and Small Districts (Tier 1 and 4) | $ 1,467,319 | $ 1,468,550 | 100% |
| Cost Group 2 - County, Superior Court and Small Districts (Tier 3 and 5) | 6,972,123 | 6,935,912 | 99% |
| Cost Group 3 - Central Contra Costa Sanitary District | 596,444 | 594,683 | 100% |
| Cost Group 4 - Contra Costa Housing Authority | 91,718 | 91,436 | 100% |
| Cost Group 5 - Contra Costa County Fire Protection District | 97,868 | 95,971 | 98% |
| Cost Group 6 - Small Districts (Non-Enhanced Tier 1 and 4) | 11,564 | 11,457 | 99% |
| **Safety** | | | |
| Cost Group 7 - County (Tier A and D) | $ 2,455,518 | $ 2,458,460 | 100% |
| Cost Group 8 - Contra Costa and East Fire Protection Districts | 1,506,782 | 1,503,881 | 100% |
| Cost Group 9 - County (Tier C and E) | 484,107 | 481,000 | 99% |
| Cost Group 10 - Moraga-Orinda Fire District | 265,587 | 266,101 | 100% |
| Cost Group 11 - San Ramon Valley Fire District | 653,057 | 653,408 | 100% |
| Cost Group 12 - Rodeo-Hercules Fire Protection District | 67,503 | 67,027 | 99% |

## SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS

Actuarial Liability

The entry age actuarial cost method attributes the Present Value of Future Benefits between time periods. The portion attributed to periods before the valuation date is the Actuarial Liability and is used as a funding target in developing contribution rates. We note that the Actuarial Liability for each cost group is within 1% - a very close match and well below the 5% threshold.

**Table II-2**

**Actuarial Liability Comparison by Cost Group**

**($ in thousands)**

| | Segal | Cheiron | Ratio |
|---|---|---|---|
| **General** | | | |
| Cost Group 1 - County, Superior Court and Small Districts (Tier 1 and 4) | $ 1,429,081 | $ 1,430,146 | 100% |
| Cost Group 2 - County, Superior Court and Small Districts (Tier 3 and 5) | 5,534,581 | 5,472,784 | 99% |
| Cost Group 3 - Central Contra Costa Sanitary District | 517,533 | 516,349 | 100% |
| Cost Group 4 - Contra Costa Housing Authority | 80,479 | 80,122 | 100% |
| Cost Group 5 - Contra Costa County Fire Protection District | 79,591 | 78,586 | 99% |
| Cost Group 6 - Small Districts (Non-Enhanced Tier 1 and 4) | 9,048 | 9,012 | 100% |
| **Safety** | | | |
| Cost Group 7 - County (Tier A and D) | $ 2,357,624 | $ 2,361,326 | 100% |
| Cost Group 8 - Contra Costa and East Fire Protection Districts | 1,287,697 | 1,289,547 | 100% |
| Cost Group 9 - County (Tier C and E) | 211,574 | 211,217 | 100% |
| Cost Group 10 - Moraga-Orinda Fire District | 237,282 | 237,963 | 100% |
| Cost Group 11 - San Ramon Valley Fire District | 576,659 | 576,861 | 100% |
| Cost Group 12 - Rodeo-Hercules Fire Protection District | 58,404 | 58,024 | 99% |

## SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS

Normal Costs

The Normal Cost represents the portion of the Present Value of Future Benefits that is attributed to the current year of service. Under the entry age method, it is designed to be a level percent of pay throughout an individual's career. We note that the Employer Normal Cost for each cost group in Table II-3 below is within 5%.

**Table II-3**
**Employer Normal Cost Comparison by Cost Group**

| | Segal | Cheiron | Ratio |
|---|---|---|---|
| **General** | | | |
| Cost Group 1 - County, Superior Court and Small Districts (Tier 1 and 4) | 15.2% | 15.7% | 104% |
| Cost Group 2 - County, Superior Court and Small Districts (Tier 3 and 5) | 12.6% | 12.5% | 99% |
| Cost Group 3 - Central Contra Costa Sanitary District | 15.2% | 15.6% | 103% |
| Cost Group 4 - Contra Costa Housing Authority | 14.3% | 14.6% | 102% |
| Cost Group 5 - Contra Costa County Fire Protection District | 15.9% | 15.9% | 100% |
| Cost Group 6 - Small Districts (Non-Enhanced Tier 1 and 4) | 15.0% | 14.7% | 98% |
| **Safety** | | | |
| Cost Group 7 - County (Tier A and D) | 29.8% | 30.1% | 101% |
| Cost Group 8 - Contra Costa and East Fire Protection Districts | 25.3% | 25.8% | 102% |
| Cost Group 9 - County (Tier C and E) | 19.5% | 19.7% | 101% |
| Cost Group 10 - Moraga-Orinda Fire District | 26.5% | 26.6% | 101% |
| Cost Group 11 - San Ramon Valley Fire District | 24.6% | 25.5% | 104% |
| Cost Group 12 - Rodeo-Hercules Fire Protection District | 23.7% | 24.6% | 104% |

Valuation Value of Assets

We reviewed the actuarial smoothing calculations based on the statement of changes in fiduciary net positions and related backup information and agree with the Valuation Value of Assets for each cost group.

Segal's asset smoothing method recognizes actuarial losses and gains on the market value of assets over a five-year period, which complies with the Actuarial Standards of Practice.

Employer Contributions

As part of our replication, we verified the calculations of the employer contribution rates by cost group and by employer. We reviewed CCCERA's new Actuarial Funding Policy adopted by the Board on May 1, 2024 and effective starting with the December 31, 2023 valuation. We determined that the new policy complies with Actuarial Standards of Practice (ASOP).

The policy resets the remaining amortization period for UAL layers established as of December 31, 2012 through December 31, 2018 to six years which minimizes the contribution rate volatility in future years. All future actuarial gains or losses and assumption or method changes will continue to be amortized over a closed 18-year period as a percentage of payroll.

## SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS

Our replication of the employer contribution rates by cost group is shown below in Table II-4 and are all within 3% of Segal's.

**Table II-4**
**Employer Contribution Rate Comparison by Cost Group**

| | Segal | Cheiron | Ratio |
|---|---|---|---|
| **General** | | | |
| Cost Group 1 - County, Superior Court and Small Districts (Tier 1 and 4) | 24.00% | 23.93% | 100% |
| Cost Group 2 - County, Superior Court and Small Districts (Tier 3 and 5) | 21.41% | 20.73% | 97% |
| Cost Group 3 - Central Contra Costa Sanitary District | 17.80% | 17.97% | 101% |
| Cost Group 4 - Contra Costa Housing Authority | 27.50% | 27.30% | 99% |
| Cost Group 5 - Contra Costa County Fire Protection District | 39.81% | 38.84% | 98% |
| Cost Group 6 - Small Districts (Non-Enhanced Tier 1 and 4) | 15.13% | 14.86% | 98% |
| **Safety** | | | |
| Cost Group 7 - County (Tier A and D) | 59.75% | 60.21% | 101% |
| Cost Group 8 - Contra Costa and East Fire Protection Districts | 60.55% | 61.24% | 101% |
| Cost Group 9 - County (Tier C and E) | 49.46% | 49.82% | 101% |
| Cost Group 10 - Moraga-Orinda Fire District | 91.22% | 91.99% | 101% |
| Cost Group 11 - San Ramon Valley Fire District | 48.58% | 49.54% | 102% |
| Cost Group 12 - Rodeo-Hercules Fire Protection District | 76.09% | 76.09% | 100% |

## SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS

Below in Tables II-5 and II-6, we show the employer contributions rate comparisons on a more granular level, by Tier, since discrepancies in the calculations can sometimes be masked when reviewing on the broader basis. Our results match Segal's within the 5% threshold for all Tiers.

**Table II-5**
**Employer Contribution Rate Comparison by Tier - General**

| | | Segal | Cheiron | Ratio |
|---|---|---|---|---|
| Cost Group 1 | Tier 1 - Non-LAFCO | 25.73% | 26.08% | 101% |
| | Tier 1 - LAFCO | 21.03% | 21.38% | 102% |
| | Tier 4 (3% COLA) - Non LAFCO | 21.66% | 21.04% | 97% |
| | Tier 4 (3% COLA) - LAFCO | 16.96% | 16.34% | 96% |
| | Tier 4 (2% COLA) | 20.03% | 19.42% | 97% |
| Cost Group 2 | Tier 3 - Non IHSS | 24.10% | 23.13% | 96% |
| | Tier 3 - IHSS | 23.46% | 22.50% | 96% |
| | Tier 5 (3%/4% COLA) - Non IHSS | 20.14% | 19.75% | 98% |
| | Tier 5 (3%/4% COLA) - IHSS | 19.50% | 19.11% | 98% |
| | Tier 5 (2% COLA) - Non IHSS | 19.23% | 18.80% | 98% |
| | Tier 5 (2% COLA) - IHSS | 18.59% | 18.16% | 98% |
| Cost Group 3 | Tier 1 | 19.97% | 20.40% | 102% |
| | Tier 4 (3% COLA) | 14.12% | 13.85% | 98% |
| Cost Group 4 | Tier 1 | 29.65% | 29.77% | 100% |
| | Tier 4 (3% COLA) | 25.43% | 24.98% | 98% |
| Cost Group 5 | Tier 1 | 43.72% | 42.87% | 98% |
| | Tier 4 (3% COLA) | 39.05% | 37.72% | 97% |
| | Tier 4 (2% COLA) | 36.30% | 35.27% | 97% |
| Cost Group 6 | Tier 1 | 16.57% | 16.31% | 98% |
| | Tier 4 (3% COLA) | 13.72% | 13.49% | 98% |

**Table II-6**
**Employer Contribution Rate Comparison by Tier - Safety**

| | | Segal | Cheiron | Ratio |
|---|---|---|---|---|
| Cost Group 7 | Tier A | 60.53% | 61.04% | 101% |
| | Tier D | 50.62% | 50.61% | 100% |
| Cost Group 8 | Tier A | 67.15% | 68.18% | 102% |
| | Tier D | 53.57% | 53.45% | 100% |
| | Tier E | 51.80% | 52.13% | 101% |
| Cost Group 9 | Tier C | 56.41% | 56.52% | 100% |
| | Tier E | 47.49% | 47.92% | 101% |
| Cost Group 10 | Tier A | 93.94% | 94.75% | 101% |
| | Tier D | 83.61% | 84.26% | 101% |
| Cost Group 11 | Tier A | 55.90% | 57.61% | 103% |
| | Tier D | 40.54% | 40.69% | 100% |
| Cost Group 12 | Tier A | 78.60% | 79.00% | 101% |
| | Tier D | 73.27% | 72.81% | 99% |

## SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS

Employee Contribution Rates

As part of the audit, we replicated the calculations of the individual member contribution rates based on the applicable provisions of the County Employees' Retirement Law (the CERL). For the non-PEPRA cost groups, we understand the member contribution rates are made up of the following components:

- A Basic rate providing for an annuity equal to:
  - General Tier 1 and Tier 3 (Non-Enhanced): Entry-age rates that provide for ½ of the 31676.11 benefit payable at 55, or
  - General Tier 1 and Tier 3 (Enhanced): 1/120th of One-Year Final Average Compensation at a retirement age of 60, or
  - Safety Tier A (Non-Enhanced): ½ of the 31664 benefit payable at age 50, or
  - Safety Tier A (Enhanced): 1/100th of One-Year Final Average Compensation at a retirement age of 50, or
  - Safety Tier C (Enhanced): 1/100th of Three-Year Final Average Compensation at a retirement age of 50
- A COLA rate providing for ½ of the cost of the COLA.

Pre-PEPRA Safety members with 30 or more years of service are exempt from paying member contributions.

We have verified the calculations of the member contribution rates based on the applicable provisions of the CERL for sample ages and have found these rates to be correct. Our Basic (non-COLA) rates were well within 1% of Segal's rates for General Tiers 1 and 3, and Safety Tiers A and C.

We have verified the calculations of the COLA member rates for all 12 cost groups, and the resulting total member contribution rates are within 5% of Segal's calculations for all cost groups. The total contribution rates – Basic plus COLA – are all within 5%.

For the PEPRA members, the member contributions rates are equal to 50% of the total normal cost rates. Our comparison of the PEPRA member rates is shown in Table II-7 on the next page.

## SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS

**Table II-7**
**PEPR Member Rates by Tier**

| | Segal | Cheiron | Ratio |
|---|---|---|---|
| **General** | | | |
| Cost Group 1 - Tier 4 (3% COLA) - Non LAFCO | 12.8% | 12.8% | 100% |
| Cost Group 1 - Tier 4 (3% COLA) - LAFCO | 12.8% | 12.8% | 100% |
| Cost Group 1 - Tier 4 (2% COLA) | 11.2% | 11.2% | 100% |
| Cost Group 2- Tier 5 (3%/4% COLA) - Non IHSS | 11.3% | 11.5% | 102% |
| Cost Group 2 - Tier 5 (3%/4% COLA) - IHSS | 11.3% | 11.5% | 102% |
| Cost Group 2 - Tier 5 (2% COLA) - Non IHSS | 10.4% | 10.6% | 102% |
| Cost Group 2 - Tier 5 (2% COLA) - IHSS | 10.4% | 10.6% | 102% |
| Cost Group 3 - Tier 4 (3% COLA) | 11.5% | 11.5% | 100% |
| Cost Group 4 - Tier 4 (3% COLA) | 12.2% | 12.3% | 101% |
| Cost Group 5 - Tier 4 (3% COLA) | 15.1% | 14.8% | 98% |
| Cost Group 5 - Tier 4 (2% COLA) | 12.4% | 12.3% | 100% |
| Cost Group 6 - Tier 4 (3% COLA) | 13.6% | 13.4% | 98% |
| **Safety** | | | |
| Cost Group 7 - County Safety - Tier D | 20.7% | 20.5% | 99% |
| Cost Group 8 - Contra Costa Fire Protection District - Tier D | 18.3% | 18.0% | 99% |
| Cost Group 8 - Contra Costa Fire Protection District - Tier E | 16.5% | 16.7% | 101% |
| Cost Group 9 - County Safety - Tier E | 17.5% | 17.8% | 101% |
| Cost Group 10 - Moraga-Orinda Fire District - Tier D | 18.8% | 18.9% | 100% |
| Cost Group 11 - San Ramon Valley Fire District - Tier D | 16.5% | 16.6% | 101% |
| Cost Group 12 - Rodeo-Hercules Fire Protection District - Tier D | 20.9% | 21.4% | 102% |

We have also calculated a weighted-average member contribution rate for each cost group and compared the results to Segal's average member rates for consistency. The comparison is shown below in Table II-8 and all results are within 2% of Segal's, well within the 5% threshold.

**Table II-8**
**Average Member Contribution Rate Comparison by Cost Group**

| | Segal | Cheiron | Ratio |
|---|---|---|---|
| **General** | | | |
| Cost Group 1 - County, Superior Court and Small Districts (Tier 1 and 4) | 11.62% | 11.70% | 101% |
| Cost Group 2 - County, Superior Court and Small Districts (Tier 3 and 5) | 10.68% | 10.84% | 102% |
| Cost Group 3 - Central Contra Costa Sanitary District | 11.55% | 11.52% | 100% |
| Cost Group 4 - Contra Costa Housing Authority | 11.71% | 11.85% | 101% |
| Cost Group 5 - Contra Costa County Fire Protection District | 11.85% | 11.83% | 100% |
| Cost Group 6 - Small Districts (Non-Enhanced Tier 1 and 4) | 13.23% | 13.18% | 100% |
| **Safety** | | | |
| Cost Group 7 - County (Tier A and D) | 18.66% | 18.65% | 100% |
| Cost Group 8 - Contra Costa and East Fire Protection Districts | 17.60% | 17.73% | 101% |
| Cost Group 9 - County (Tier C and E) | 17.06% | 17.24% | 101% |
| Cost Group 10 - Moraga-Orinda Fire District | 18.19% | 18.21% | 100% |
| Cost Group 11 - San Ramon Valley Fire District | 17.46% | 17.58% | 101% |
| Cost Group 12 - Rodeo-Hercules Fire Protection District | 16.54% | 16.74% | 101% |

## SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS

### Census Data

The CCCERA Staff and Segal provided us with the data that was used in the December 31, 2023 actuarial valuation. We reviewed the information in both files and find that the data used in the valuation is valid, complete, and contain the necessary data elements for purposes of performing the actuarial valuation of CCCERA.

We also find that the methods and requirements provided in the Actuarial Standard of Practice No. 23 *Data Quality* have been adhered to, to the extent applicable for the valuation of pension plan obligations.

In Table II-9 below, we compare the raw December 31, 2023 data file provided by CCCERA to Segal's processed data file and found only minor differences between the files.

**Table II-9**
**Summary of Member Data Comparison as of December 31, 2023**

| | Segal | Cheiron | Ratio |
|---|---|---|---|
| Active Members | | | |
| Total Number | 10,349 | 10,349 | 100.0% |
| Average Age | 46.1 | 46.1 | 99.9% |
| Average Service | 9.9 | 9.9 | 100.1% |
| Projected Compensation | $1,155,129,563 | $1,163,147,749 | 100.7% |
| Average Compensation | $111,618 | $112,392 | 100.7% |
| Account Balances | $1,441,357,620 | $1,441,357,620 | 100.0% |
| Service Retirees | | | |
| Total Number | 8,407 | 8,418 | 100.1% |
| Average Age | 71.3 | 71.3 | 100.0% |
| Average Monthly Benefit | $4,720 | $4,704 | 99.7% |
| Disabled Retirees | | | |
| Total Number | 872 | 882 | 101.1% |
| Average Age | 68.3 | 68.0 | 99.6% |
| Average Monthly Benefit | $5,846 | $5,765 | 98.6% |
| Beneficiaries | | | |
| Total Number | 1,526 | 1,497 | 98.1% |
| Average Age | 73.1 | 73.4 | 100.4% |
| Average Monthly Benefit | $3,266 | $3,300 | 101.1% |
| Vested Terminated Members | | | |
| Total Number | 4,109 | 4,111 | 100.0% |
| Average Age | 46.5 | 46.5 | 100.0% |

## Review of Actual Benefit Calculations

CCCERA provided several retirement, disability and death benefit calculations for members with dates of retirement after December 31, 2023. We reviewed these calculations compared to the expected pension benefits from the December 31, 2023 valuation results. The actual benefit calculations were consistent with the projected benefits from our valuation software which verifies the accuracy of the census data and our liability modeling.

## Plan Provisions

We compared the summary of plan provisions shown in Section 4, Exhibit 2 of Segal's December 31, 2023 Valuation Report to the benefits in the County Employees' Retirement Law of 1937 (CERL). The plan provisions shown in Segal's exhibit match understanding of the applicable sections of the CERL, and based on our close match of the Segal liabilities as part of our parallel valuation, we conclude that Segal has appropriately reflected these provisions in the actuarial valuation.

## Contents of the Reports

We find the actuarial valuation report to be in compliance with Actuarial Standards of Practice. However, for clarity, we suggest Segal explain how the non-refundability factors shown on page 170 of their report are used and why they are developed.

***Projections***

CCCERA staff provided us with Segal's post valuation letters from the December 31, 2022 valuation that show 5-year projected changes to the employer contribution rates in total and by cost group. We understand that these additional letters are provided every year and we support the production of these disclosures. However, we strongly suggest that Segal modify their projections to include an assumption of a transition to the PEPRA tiers, based on a level active population which is consistent with the level percentage of payroll amortization policy and their assumed payroll growth rate.

The impact of the new PEPRA benefit tiers on the future costs of the system is not immaterial. For example, for General Cost Group #2, the Tier 3 employer normal cost rate is 15.25% compared to the PEPRA Tier 5 (2% COLA) employer normal cost rate of 10.38% (page 35 of Segal's December 31, 2023 valuation report). The same dynamic is true for the Safety Cost Group #8, where Tier A's employer normal cost is 31.87% compared to the PEPRA Tier E employer normal cost rate of 16.52% (page 39). Thus, the active population shift from the legacy to PEPRA tiers will have a significant impact on the average employer normal cost rate. Furthermore, the employer normal cost rate is currently more than 50% the total employer contribution rate - and projected to become a greater proportion when the UAAL payments begin to decline starting with the December 31, 2026 valuation - so any changes to the normal cost rates will have a material impact on the projected employer contribution rate.

**SECTION IV – EXECUTIVE SUMMARY (Experience Study Audit)**

## Summary of Findings

Overall, we found the recommendations made by Segal in the Actuarial Experience Study covering the period from January 1, 2018 to December 31, 2020 to be reasonable, and mostly agree with the rationales and processes that led to their recommendations. The actuarial assumptions recommended are in compliance with acceptable standards of actuarial practice. As part of our audit and review, we examined the raw demographic data provided by CCCERA, and found that our independent analysis of the Plan's experience matched Segal's within a reasonable range, and generally supported their proposed assumptions.

The following summarizes our key observations and recommendations (described in detail in this report), which we offer for Segal and CCCERA to consider in performing the next experience study:

- We recommend that Segal disclose exposures, actual and expected decrements, and calculate the actual to expected (A/E) ratios for retirement, termination, and disability. We commend Segal for showing the A/E ratios in total for the different types of mortality experience.
- We recommend that Segal consider how much credibility to assign to mortality experience in developing proposed adjustments to the standard base tables, in particular for General disabled members.
- We suggest Segal consider reducing the retirement rates if the experience continues to warrant the decrease.
- We suggest using at least six years of experience for termination experience. The most recent study was impacted by the pandemic while the upcoming study covers the period called "the great resignation" where significant numbers of the members either left the workforce or changed jobs at historically high rates. Reviewing the experience for either one of these 3-year periods independently may result in skewed results.
- We suggest using at least six years of disability experience in the next study to mitigate impact of the disability processing delays.
- We suggest that Segal closely monitor the percentage married assumption that determines the number of future retirees who will elect a 60% joint-and-survivor benefit compared to a single life annuity or its actuarial equivalent and perform the analysis using a benefits-weighted approach.

## Scope of Assignment

Cheiron performed a full replication audit of the assumptions recommended by Segal in the Actuarial Experience Study during the period from January 1, 2018 to December 31, 2020. For the demographic assumptions, we collected the same data used by Segal in their analysis and independently determined the number of actual decrements by type and the number of exposures to those decrements. Next, we compared this experience to the current and proposed assumptions to assess whether or not the recommended assumptions are reasonable.

## SECTION IV – EXECUTIVE SUMMARY (Experience Study Audit)

This review provides CCCERA confirmation that:

- Segal's analysis of the experience study data was accurate and we replicated their work within a reasonable tolerance level.
- Segal's recommendations comply with Actuarial Standards of Practice (ASOPs).

# SECTION V – DEMOGRAPHIC ASSUMPTIONS

This section summarizes our review of Segal's Actuarial Experience Study report and our recommendations.

## Demographic Assumptions

The first part of our analysis is simply to compare the number of actual decrements and exposures for each type of decrement as well as the average rate of decrement. If our independent analysis matches Segal's analysis within a reasonable range, CCCERA can be confident that the basis on which assumptions are proposed is valid.

There will inevitably be differences between our calculations and those produced by Segal. For actual decrements, some are clear-cut, but there are always data issues where, for example, an active member one year is reported as inactive the next year and the type of decrement is not clear. There are also members who are eligible for retirement, but decrement as a termination instead of a service retirement. The treatment of these different situations in the data can vary, resulting in differences in the determination of the actual decrements used in the experience analysis. Similar differences in the number of members exposed to each decrement can lead to differences in the number of expected decrements.

For the demographic assumptions, we determined the ratio of the actual number of decrements for each membership group compared to the expected number of decrements (A/E ratio or actual-to-expected ratio). If the assumption perfectly predicts the overall number of decrements, this ratio will be 100%. Otherwise, any recommended assumption change should generally move from the current A/E ratio towards 100% unless future experience is expected to be different than the experience during the period of study.

In the second part of our analysis, we use the observed rates from our independent analysis to develop a 90% confidence interval around the observed rate. The true rate during the study period falls within this range with 90% confidence. In general, we believe the assumption should fall within the 90% confidence interval unless there is reason to believe that the future experience will vary from the experience during the study period. Consequently, we compare the current and proposed assumptions to the confidence intervals to assess whether or not they are reasonable.

For some of the assumptions, we explore whether a different or more refined structure to the assumption may be appropriate, such as measuring the experience not just based on the number of individuals decrementing for a given cause (i.e., a headcount-based analysis) but rather by weighting the experience by some of other measure (such as the benefit amounts).

Finally, for the review of one of the assumptions – General member retirement rates – we developed and trained a machine learning (ML) model help inform our analysis and provide additional insights.

## SECTION V – DEMOGRAPHIC ASSUMPTIONS

# Mortality

Based on our independent analysis of the experience data, we believe the mortality assumptions proposed by Segal are reasonable. The base mortality rates were analyzed separately by gender and job classification for healthy retirees, disabled retirees, and active employees. The table below shows the comparison of the benefit-weighted actual, expected, and proposed deaths, and actual-to-expected ratios (A/E ratios) determined by Segal to the same statistics determined in our independent analysis. These ratios all appeared reasonable.

| | Segal Results | | | | | Cheiron Results | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Benefit-Weighted Deaths | | | A/E Ratios | | Benefit-Weighted Deaths | | | A/E Ratios | |
| | Actual | Expected | Proposed | Expected | Proposed | Actual | Expected | Proposed | Expected | Proposed |
| **Healthy Retirees** | | | | | | | | | | |
| General Males | $25.98 | $25.78 | $25.83 | 101% | 101% | $25.99 | $25.56 | $25.58 | 102% | 102% |
| General Females | 26.43 | 25.94 | 25.95 | 102% | 102% | 26.44 | 25.76 | 25.78 | 103% | 103% |
| Safety Males | 17.04 | 16.53 | 16.54 | 103% | 103% | 17.04 | 16.38 | 16.38 | 104% | 104% |
| Safety Females | 0.75 | 1.38 | 1.31 | 54% | 57% | 0.75 | 1.37 | 1.30 | 55% | 57% |
| **Disabled Retirees** | | | | | | | | | | |
| General Males | $2.48 | $2.29 | $2.29 | 108% | 108% | $2.45 | $2.26 | $2.26 | 108% | 108% |
| General Females | 3.51 | 3.45 | 3.44 | 102% | 102% | 3.51 | 3.42 | 3.42 | 103% | 103% |
| Safety Males | 6.50 | 6.36 | 6.36 | 102% | 102% | 6.50 | 6.31 | 6.31 | 103% | 103% |
| Safety Females | 0.22 | 0.31 | 0.31 | 71% | 71% | 0.22 | 0.31 | 0.31 | 71% | 71% |
| **Beneficiaries** | | | | | | | | | | |
| General Males | $3.09 | $2.59 | $2.60 | 119% | 119% | $2.93 | $2.46 | $2.46 | 119% | 119% |
| General Females | 15.93 | 14.58 | 14.62 | 109% | 109% | 12.40 | 11.37 | 11.39 | 109% | 109% |
| **Actives** | | | | | | | | | | |
| General Males | $2.95 | $3.25 | $3.27 | 91% | 90% | $3.66 | $3.13 | $3.14 | 117% | 117% |
| General Females | 3.62 | 4.06 | 4.04 | 89% | 90% | 4.15 | 3.97 | 3.98 | 105% | 104% |
| Safety Males | 1.13 | 1.11 | 1.13 | 102% | 100% | 1.21 | 1.05 | 1.06 | 115% | 114% |
| Safety Females | 0.00 | 0.14 | 0.14 | 0% | 0% | 0.00 | 0.13 | 0.13 | 0% | 0% |

Segal recommended the continued use of Pub-2010 mortality tables as published by the Society of Actuaries, which are based on large, aggregated amounts of data from public plan sponsors across the United States. To these published tables, their report recommends the following adjustments:

- For Safety healthy retirees, a factor of 105% applied to the published tables for males and a factor of 95% applied to the published tables for females. This was a change from the prior existing assumption for females.
- For all beneficiaries and disabled male retirees, a factor of 105% applied to the appropriate sex-distinct published tables. This was a continuation of the existing assumption.

## SECTION V – DEMOGRAPHIC ASSUMPTIONS

Segal recommended using the Pub-2010 Continent Survivor mortality table only for survivors and contingent beneficiaries after the member has died. We agree with this approach since it is consistent with how the published table was developed, using only data of surviving beneficiaries once the member died. Typically, beneficiaries have higher mortality rates after their spouses' death, sometimes referred to as the "widower" effect.

We support Segal's recommendation to use the MP-2021 mortality improvement scale on a generational basis, replacing the MP-2018 improvement scale.

***Benefit Weighting***

Because higher income individuals also typically have higher pension benefit amounts, it is important for a pension plan to use assumptions that are based on data that has been weighted by benefit amount to properly reflect the relative impact on liability. Otherwise, the mortality assumptions could accurately predict the number of deaths at each age, but still underestimate the liabilities, as members with higher benefits have an outsized effect on liabilities.

Segal took this factor into account by recommending standard tables that were developed using benefit-weighting and by using a benefit-weighted approach to analyze CCCERA's data, both of which we strongly support.

***Credibility***

Very few pension plans have sufficient experience to develop their own mortality tables. Most plans instead adjust a standard table. However, with approximately 1,000 deaths necessary for full credibility under a standard approach (defined by a 90% probability that the observed rate is within 5% of the true rate) and actual mortality rates quite low at most ages, many plans lack sufficient data to perform a full adjustment to a standard table (i.e., adjust the tables so the A/E ratio based on the plan's data is close or equal to 100%).

In general, Segal's adjustments to the standard tables seem reasonable. However, there does not appear to be credible experience among Safety and General male disabled retirees to support the proposed magnitude of adjustment to the standard mortality tables. Based on our calculations, the credibility we would have assigned to the data was fairly limited, with our calculated rate (based on the parameters described above) for the Safety disabled males at 22% and General disabled males at 19%. Under a partial credibility approach, this would have resulted in adjustments of 101.8% and 1.028%, respectively. Segal's adjustments were 105% and are close to our calculations, and still reasonable given CCCERA's experience. However, we recommend in the next experience study that Segal consider credibility when recommending adjustments to the standard tables.

## Retirement

Segal proposed rates that vary by age, service, and class (General and Safety). We support this approach, as it can help capture the impact of differences of behavior based on benefit levels determined by the different plan provisions and the members' demographics. The retirement experience was analyzed using six years of data covering 2015-2020.

The exhibit below shows the comparison of Segal's retirement rate analysis for the General members compared to Cheiron's analysis. The actual retirement rates are reasonably close for all groups which confirms that the basis on which assumptions were proposed is valid.

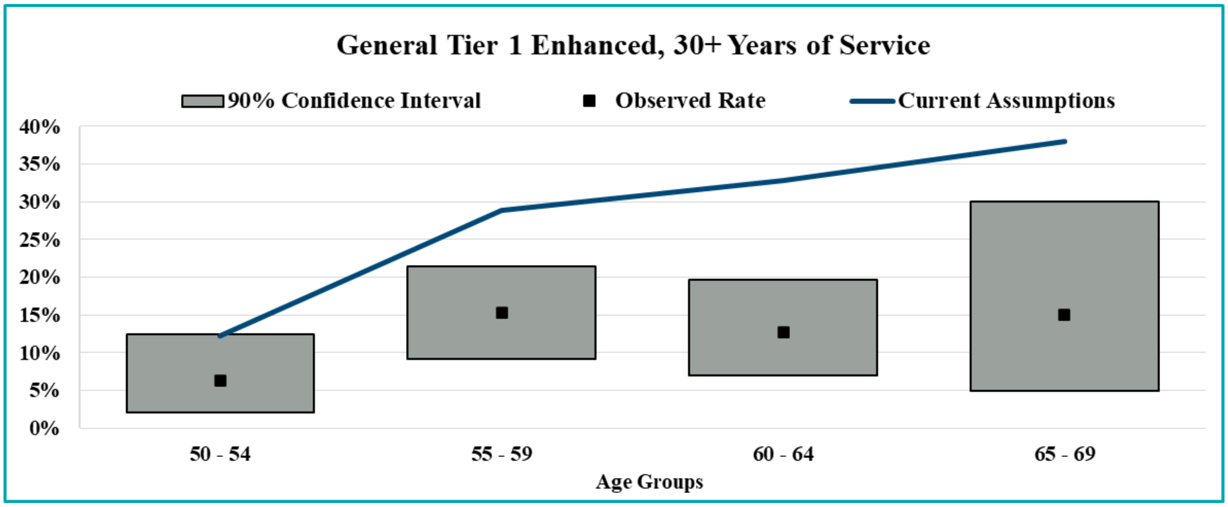
| Comparison of General Retirements, Exposures, and Rates | | | | | | |
|---|---|---|---|---|---|---|
| | Segal Data | | | Cheiron Data | | |
| | Actual | Exposures | Rate | Actual | Exposures | Rate |
| **Tier 1 Enhanced** | | | | | | |
| Less than 30 Years of Service | 139 | 1,273 | 10.9% | 136 | 1,272 | 10.7% |
| 30 or more Years of Service | 31 | 239 | 13.0% | 30 | 240 | 12.5% |
| **Tier 3 Enhanced** | | | | | | |
| Less than 30 Years of Service | 1,047 | 11,045 | 9.5% | 1,046 | 11,051 | 9.5% |
| 30 or more Years of Service | 121 | 829 | 14.6% | 121 | 827 | 14.6% |
| **PEPRA Tiers 4 and 5** | 35 | 396 | 8.8% | 35 | 399 | 8.8% |

The next exhibit shows how the actual retirements compared to the previous and current assumptions. Overall, the actual retirement rates were much lower than expected during the six-year period over which the retirement experience was studied. Segal recommended decreases to these assumptions, but the new rates still produced A/E ratios well below 100%.

| General Retirement Assumptions | | | | | |
|---|---|---|---|---|---|
| | Retirement Rates | | | | |
| | | Assumptions | | A/E Ratios | |
| | Actual | Previous | Current | Previous | Current |
| **Tier 1 Enhanced** | | | | | |
| Less than 30 Years of Service | 10.9% | 15.7% | 14.0% | 70% | 78% |
| 30 or more Years of Service | 13.0% | 27.6% | 23.1% | 47% | 56% |
| **Tier 3 Enhanced** | | | | | |
| Less than 30 Years of Service | 9.5% | 12.1% | 11.5% | 78% | 82% |
| 30 or more Years of Service | 14.6% | 16.6% | 16.4% | 88% | 89% |
| **PEPRA Tiers 4 and 5** | 8.8% | 14.4% | 13.6% | 61% | 65% |

## SECTION V – DEMOGRAPHIC ASSUMPTIONS

The graph below shows the detailed retirement experience for the General Tier 1 Enhanced group for members who had 30 are more years of service. The current assumptions that Segal proposed in the last experience study were well outside the 90% confidence interval ranges for ages 55-69. CCCERA staff informed us that there were significant increases in retirements in 2022, about 35% above the 5-year average. However, even considering these large increases, the current assumptions for this group would only result in an A/E ratio of 76%.




The relatively robust amount of retirement data available for the General members over a six-year period allowed us to use a different approach for generating retirement rate predictions. Using a subset of the data - specifically, a random selection of 80% of the member records for *those* who were eligible for a service retirement during 2015-2020 – we trained a Machine Learning (ML) model[1] to predict the expected likelihood of retirement given a number of factors: age, service, gender, Tier and compensation.

After training the model, we developed a set of predictions for the remaining randomly selected 20% of the records (the "test" data). The model produced a probability of retirement for each record, which was then used to develop an expected number of overall retirements for the test population. From these results we calculated an Actual to Expected ratio for the selected data from each year of the experience study, and compared the ratios to those that would have been generated for the selected population using Segal's proposed assumptions, as shown in the following table.

[1] A machine learning model is a type of Artificial Intelligence that uses algorithms to learn patterns in data and make predictions about a previously unseen dataset. The specific algorithm used in this analysis was the Extreme Gradient Boosting (XGB) algorithm.

## SECTION V – DEMOGRAPHIC ASSUMPTIONS

**Comparison of Actual/Expected Ratios for Randomly Selected 20% of Retirement-Eligible General Members**

| | | Segal Assumptions | | Machine-Learning Model | |
|---|---|---|---|---|---|
| **Year** | **Actual** | **Expected** | **A/E Ratio** | **Expected** | **A/E Ratio** |
| 2015 | 32 | 40.4 | 79.2% | 32.0 | 100.2% |
| 2016 | 39 | 43.8 | 89.1% | 36.5 | 93.5% |
| 2017 | 38 | 48.3 | 78.7% | 40.4 | 106.2% |
| 2018 | 54 | 57.6 | 93.8% | 50.1 | 92.8% |
| 2019 | 41 | 56.2 | 73.0% | 46.9 | 114.4% |
| 2020 | 53 | 61.0 | 86.9% | 50.7 | 95.6% |
| **Total** | 257 | 307.2 | 83.7% | 256.6 | 99.8% |

Several things are notable from this table. The predictions produced by the Machine Learning model were considerably more accurate than those based on Segal's assumptions for the overall selected data set, and were also more accurate for the randomly selected records from each year except one (2018), when the differences between the actual and expected number of retirements were very similar (3.6 for Segal vs. 3.9 for the ML model). This is notable because data used to *test* the ML model's predictions was not included in the data to *train* the model, whereas Segal's assumptions were developed using all of the experience, including that of the selected records.

Also, the ML model slightly underpredicted the number of retirements in some years (i.e., A/E ratios greater than 100%) and overpredicted the number in other years, which indicates an unbiased assumption, whereas the Segal assumptions overpredicted the number of retirements in all years. This provides additional support for our suggestion that Segal seriously consider reducing the retirement rates in the next experience study if the data continues to support this conclusion.

## SECTION V – DEMOGRAPHIC ASSUMPTIONS

The exhibit below shows the comparison of Segal's retirement rate analysis for the Safety members compared to Cheiron's analysis. The actual retirement rates are reasonably close for all groups which confirms that the basis on which assumptions were made is valid.

**Comparison of Safety Retirements, Exposures and Rates**

| | Segal Data | | | Cheiron Data | | |
|---|---|---|---|---|---|---|
| | Actual | Exposures | Rate | Actual | Exposures | Rate |
| **Tier A Enhanced** | | | | | | |
| Less than 30 Years of Service | 208 | 1,657 | 12.6% | 198 | 1,648 | 12.0% |
| 30 or more Years of Service | 15 | 60 | 25.0% | 14 | 60 | 23.3% |
| **Tier A Non-Enhanced/ PEPRA Tiers D and E** | 3 | 47 | 6.4% | 3 | 46 | 6.5% |

The next exhibit shows how the actual retirements compared to the previous and current assumptions. Overall, the actual retirement rates were much lower than expected during the six-year period over which the retirement experience was studied. Segal did recommend overall decreases to the rates, except for the Tier A Non-Enhanced/PEPRA Tiers D and E, but the recommendations produced A/E ratios well below 100%. In addition, Segal recommended overall rate increases for the PEPRA tiers that moved the A/E ratio further from 100%.

**Safety Retirement Assumptions**

| | Retirement Rates | | | A/E Ratios | |
|---|---|---|---|---|---|
| | | Assumptions | | | |
| | Actual | Previous | Current | Previous | Current |
| **Tier A Enhanced** | | | | | |
| Less than 30 Years of Service | 12.6% | 19.6% | 17.2% | 64% | 73% |
| 30 or more Years of Service | 25.0% | 30.0% | 28.0% | 83% | 89% |
| **Tier A Non-Enhanced PEPRA Tiers D and E** | 6.4% | 9.6% | 10.0% | 67% | 64% |

Similar to our suggestion for the General retirement rates, we strongly suggest Segal consider decreasing the retirement rates in the next experience study if the data continues to warrant the reductions. We note that we did not use the Machine Learning modeling approach for the Safety members, because of the smaller amount of data available to train the data.

## Disabilities

Segal provided us their determination of exposures to disability retirement and the actual number of disability retirements by age for General and Safety members during the three-year study period. The table below compares the actual disability retirements, exposures, and the average disability retirement rate determined by Segal to the same statistics determined in our independent analysis.

Based on our independent analysis of disability retirement rates as summarized below, we believe Segal's assumptions are reasonable and our results are reasonably close which confirms that the basis on which assumptions were made is valid. Our A/E ratios are somewhat lower than Segal's. However, this is due to differences in the calculation of only one to two actual disabilities and a limited amount of experience, which skews the ratios.

Segal slightly decreased the disability rates for General Tiers 3 and 5, increasing the A/E ratio. We support that the overall rate increases were not significant enough to bring the A/E ratio even closer to 100%, since large adjustment would not be warranted in this case based on the low number of actual disabilities. We also support the slight increase in disability rates for the Safety members given the experience.

**Comparison of Disabilities, Exposures, and Rates**

| | Segal Results | | | | | Cheiron Results | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A/E Ratios | | | | | A/E Ratios | |
| | Actual | Exposures | Rate | Previous | Current | Actual | Exposures | Rate | Previous | Current |
| **General** | | | | | | | | | | |
| Tiers 1 and 4 | 9 | 2,033 | 0.44% | 107% | 107% | 7 | 2,027 | 0.35% | 83% | 83% |
| Tiers 3 and 5 | 11 | 23,704 | 0.05% | 37% | 42% | 10 | 23,644 | 0.04% | 34% | 39% |
| **Safety** | 59 | 4,418 | 1.34% | 111% | 104% | 58 | 4,408 | 1.32% | 108% | 101% |

In the next study, we strongly suggest that Segal analyze the disability assumptions using more years of data, at least six years, to capture the variability in experience within each study cycle and to better capture the lag between when a member leaves employment and actually is granted a disability benefit.

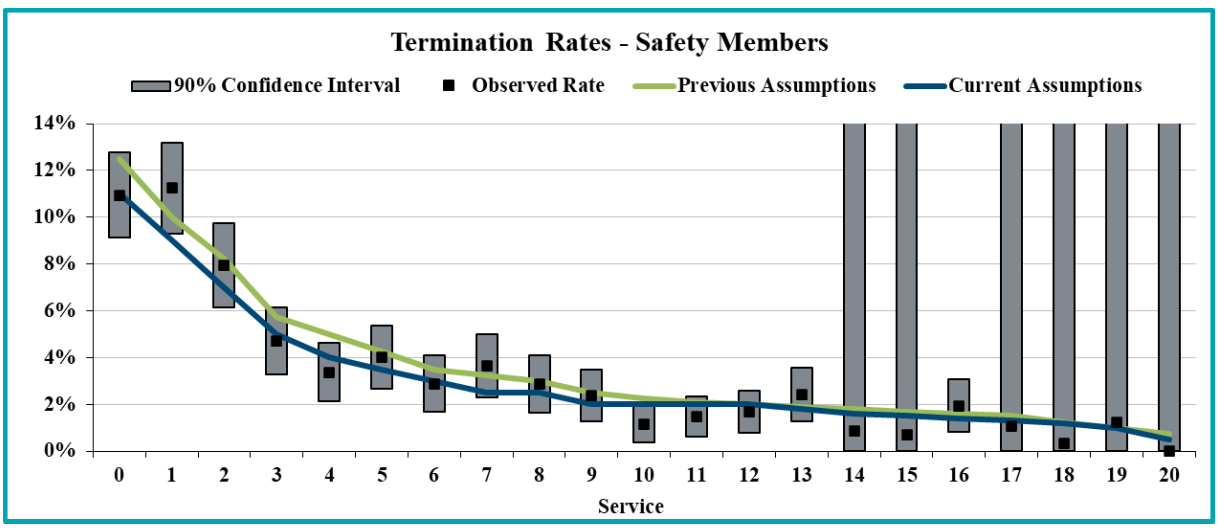
## Terminations

Segal provided us their determination of terminations by General and Safety members and by service for the three-year study period. Based on our independent analysis of the termination rates as summarized below, we believe Segal's assumptions are reasonable and our results are very close which confirms that the basis on which assumptions were made is valid.

**Comparison of Terminations, Exposures, and Rates**

| | Segal Results | | | | | Cheiron Results | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A/E Ratios | | | | | A/E Ratios | |
| | Actual | Exposures | Rate | Previous | Current | Actual | Exposures | Rate | Previous | Current |
| General | 1,238 | 18,185 | 6.8% | 101% | 100% | 1,268 | 18,176 | 7.0% | 103% | 102% |
| Safety | 82 | 3,371 | 2.4% | 54% | 63% | 84 | 3,426 | 2.5% | 55% | 63% |

Based only on the last three years' experience, the current termination assumptions for Safety members are much higher than the actual experience with an Actual to Expected (A/E) ratio of only 63%. However, the experience since 2012, illustrated in the graph below, shows that the current assumptions are reasonable. The actual termination rate for the Safety members during 2012-2017 was 4.8%, double the rate during 2018-2020, based on the 2015-2017 and 2012-2014 data Segal provided Cheiron as part of the 2018 audit. The General member termination experience has been very consistent since 2012, with an overall termination rate around 7%, for members not yet eligible for retirement.




We strongly suggest that Segal use more than three years of data when analyzing the termination assumptions, particularly for studies that cover periods that included unusual experience or significant events, such as the COVID pandemic and the related "Great Resignation", where significant numbers of the members either left the workforce or changed jobs at historically high rates.

## Miscellaneous Demographic Assumptions

**Merit Salary Increases:** The service-based assumptions for active members are reasonable based on our review of the experience. We also believe the recommendation to use an assumption equal to the wage growth assumption plus the ultimate assumed merit increase for the respective class is reasonable for members working for a reciprocal employer.

We suggest that Segal continues to monitor the salary merit increase for Safety members who have 13 or more years of service. These salary increases were slightly increased for the 2020 study, but are still below the actual experience shown in Segal's report on page 25 during the last three years and the last six years. Liabilities are more sensitive to salary merit increases later in an active members' career than in the first few years after they were hired.

**Reciprocity:** Segal used the data for all deferred vested members in the December 31, 2020 valuation to determine the percentage that went on to be covered by a reciprocal retirement system. Their analysis showed that 41% of General and 72% of Safety deferred members went to a reciprocal system. The current assumptions are 40% for General and 70% for Safety, which are reasonable and consistent with other '37 Act plans.

However, our experience with other '37 Act clients confirms that members with reciprocity sometimes do not report their service with another system until they file for retirement, which could result in underreporting of reciprocity to the original system; CCCERA appears to have reasonably robust information regarding deferred members with reciprocity since using the current deferred member population results in relatively high reciprocity rates.

**Probability of Eligible Survivor Under the Unmodified Option:** Segal's analysis showed 63% of male retirees and 52% of female retirees had an eligible spouse or domestic partner and chose the Unmodified benefit option. Based on this analysis, the percent married assumptions (65% for males and 50% for females) are reasonable but low when compared to other '37 Act systems.

However, our analysis of the data showed a slightly higher percentage for males at 68%. In addition to a headcount-weighted analysis, we also performed a benefits-weighted analysis – similar to that used for the mortality analysis - and the resulting percentages married were 75% for males and 56% for females, which are more consistent with other '37 Act systems. This assumption is used to predict how many active members will choose an Unmodified benefit with the "free" 60% joint-and-survivor annuity instead of the single life annuity or another actuarial equivalent benefit option. The more members who elect the Unmodified joint-and-survivor option, the more valuable the benefits are, resulting in higher Actuarial Liabilities.

We suggest that Segal closely monitor this assumption in the next experience study, comparing CCCERA's experience to other 37 Act systems and performing the analysis on a benefits-weighted basis.

## SECTION V – DEMOGRAPHIC ASSUMPTIONS

**Survivor Age Difference**: The current assumptions are reasonable based on Segal's disclosed analysis and our independent analysis of the data.

**Assumed Commencement Age for Deferred Vested Members:** These assumptions are reasonable based on Segal's analysis. We support the separate consideration of vested members with reciprocity, and recommend Segal continue to separately review this experience as available.

The experience for Safety deferred vested members without reciprocity showed that the average retirement age was 51.8 and Segal recommended an increase in the assumed retirement age for this group from 50 to 51. This is a reasonable recommendation for the Safety members who do not have the 3% at age 50 benefit formula: Tier A (Non-Enhanced), Tier D, and Tier E.

However, for Tier A (Enhanced) and Tier C who have the 3% at age 50 benefit formula, there is no incentive for an inactive member to wait an additional year to start receiving their benefit (i.e., at age 51 rather than age 50) since their initial retirement benefit would be the same as at age 51 as at age 50. In fact, they would miss out on one full year of benefit payments and an annual COLA if they retire at age 51.

We suggest that Segal carefully review this assumption in the next study, including reviewing the data to determine whether any of the members who retired from deferral status after age 50 had a specific reason for doing so that would not apply to most deferred members, such as a service-based eligibility provision that had not yet been met.

**Leave Cashouts:** The current assumptions by cost group are reasonable based on Segal's disclosed analysis and our independent analysis of the data.

**Service from Unused Sick Leave:** The current assumptions by healthy and disabled retirees and by General and Safety groups are reasonable based on Segal's disclosed analysis and our independent analysis of the data.

## Economic Assumptions

Overall, we believe Segal's recommendations with respect to the economic assumptions were reasonable given the data and conditions at the time of the study. Segal's Actuarial Experience Study report was issued on April 5, 2022 and our review is based on the economic environment at that time.

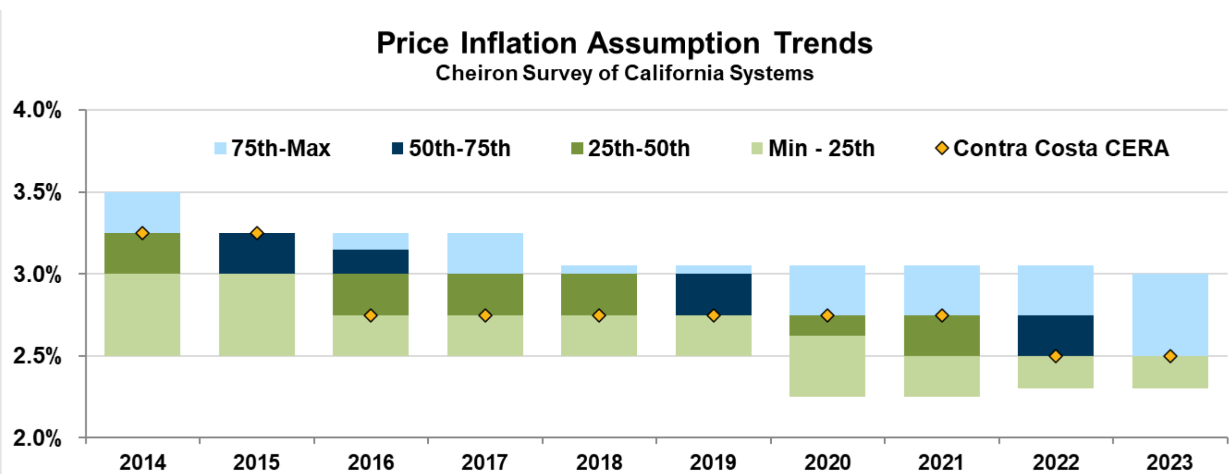
The inflation assumption, which is the building block of all other economic assumptions, was reduced from 2.75% to 2.50%. The decrease in inflation precipitated reductions in the all the other economic assumptions except for the post-retirement cost-of-living adjustments which remained unchanged.

## Inflation

Segal concluded that a 2.50% inflation assumption would be appropriate, based on a variety of factors including CCCERA's investment consultant's (Verus) long-term inflation expectation of 2.30% and a median assumption of 2.50% for large retirement systems in the Public Plans Database as of June 6, 2024. We concur that a 2.50% inflation assumption is reasonable.

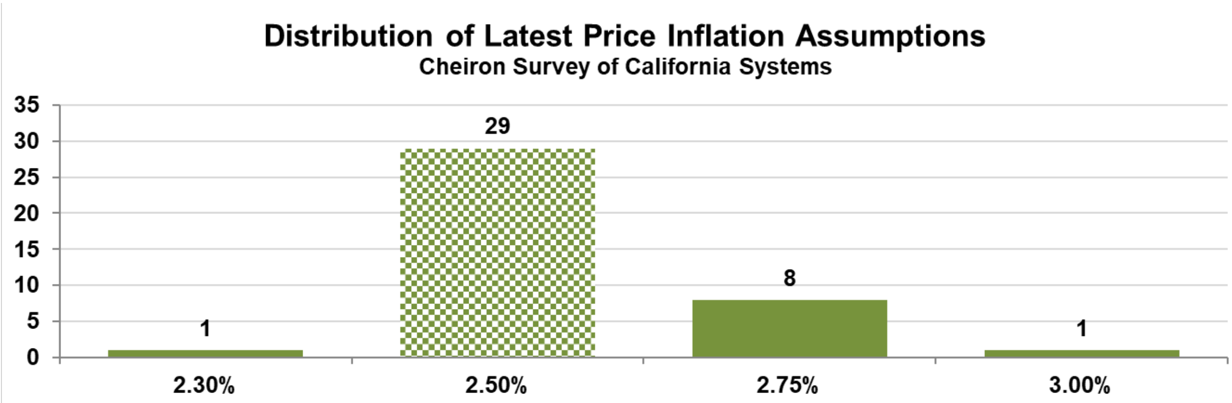
We also agree that the inflation forecasts derived from 30-year Treasury bonds (2.2%) as of February 2022 and the rate in the Social Security Administration's 2021 Trustees Report intermediate scenario (2.4%) are all compatible with the inflation assumption recommended Segal.

Cheiron annually performs a survey of 39 large retirement systems in California, including all the '37 Act Counties. The graph below shows the distribution of inflation assumptions for the last 10 years and the gold diamond in each year represents CCCERA's inflation assumption. The years shown at the bottom represent January 1 (or December 31 of the previous year) and July 1.



## SECTION VI – ECONOMIC ASSUMPTIONS

The distribution of inflation assumptions from the most recent actuarial valuations is shown below. The median and most common inflation assumption in California is 2.50%.




## Post-Retirement Cost-of-Living Adjustments (COLA)

Segal recommended maintaining the COLA assumptions for the three difference COLA groups, 2.00% for groups with a maximum COLA of 2.00% and 2.75% for groups with a maximum COLA of 3.00% or 4.00%.

We find these assumptions reasonable even though the inflation assumption decreased from 2.75% to 2.50%, since California typically has higher inflation than the U.S. average. We agree with a small margin of conservatism in anticipating future COLAs.

## Wage Growth

Segal recommended maintaining an assumption that wages will grow at a rate of 0.50% above price inflation over the long term. This assumption is used to project across-the-board wage growth for individuals. In addition, individual wages are projected to increase for merit, longevity, and other career-path based reasons. Overall, we concur with the recommended assumption as well as the rationale and process that led to the recommendation.

Segal cites one projection – from the Office of the Chief Actuary of the Social Security Administration – that indicates a significantly higher estimate (1.2% per year) of the ultimate long-term wage growth above price inflation than reflected in the current 0.50% assumption. However, we note that the Social Security Administration (SSA) assumption is based on increases in mean wages, which have consistently exceeded increases in median wages, due to the excess wage gains experienced by individuals at the highest levels of the U.S. wage scale, which is not likely to include CCCERA members. Based on Social Security data from 1991 to 2021, mean wages grew by an average of 0.4% per year more than median wages.

## Payroll Growth

Segal recommended continuing to use the same assumption for projected payroll growth as for wage growth (3.00%). We find this assumption to be reasonable.

Moreover, Segal notes that over time, the effect of the PEPRA wage cap may cause pensionable compensation/payroll to grow less quickly than wages. This is because the PEPRA cap is limited to increasing with changes in the CPI-U (2.50% based on Segal's assumption). Although the pensionable wage cap currently has a limited impact on the level of overall payroll growth due to the number of people affected, over time it should be expected that more members will be affected by the cap, if the cap continues to grow slower than wages as expected.

Segal noted (and we concur) that the impact on future payroll growth should be monitored going forward.

## Administrative Expenses

The current assumption is reasonable based on Segal's disclosed analysis using the actual administrative expenses for the prior year as a percentage of payroll for the prior year.

## Investment Rate of Return Assumption

The recommended assumed rate of investment return of 6.75%, net of investment expenses, was reasonable in April 2022 and remains reasonable in today's economic environment. Segal uses average expected arithmetic return with a "risk adjustment". They also included a comparison with an alternative model that incorporates forward looking expected geometric returns (which are lower than arithmetic returns) based on the capital market assumptions in the 2021 Horizon Survey. Cheiron and other actuaries working with California public plans typically use the expected geometric returns. Our understanding is that Segal has been transitioning to the geometric approach with their recent 1937 Act experience studies; we would support this change as well for CCCERA. Overall, we agree that both approaches are reasonable and lead to comparable outcomes.

On the next page is Cheiron's analysis of the expected return on CCCERA's portfolio in 2022 based on Verus' 2022 Capital Market Assumptions; and the expected return on the Newly Adopted Asset Allocation (on page 2 of Timothy Price's memo from the August 28, 2024 Board Packet) using Verus' 2024 Capital Market Assumptions. We understand that the Board adopted a Resolution at its August 28, 2024 meeting to set new investment asset allocation targets contained in the memo. However, the higher return expectations in 2024 are mostly due to overall increases in the capital market assumptions since 2022, rather than due to changes in the target portfolio.

## SECTION VI – ECONOMIC ASSUMPTIONS

**CCCERA Portfolio Return Expectations**

| Source | Nominal Geometric | Inflation | Real |
|---|---|---|---|
| **2022 Asset Allocation/ Capital Market Assumptions** | | | |
| Verus (10-year) | 6.7% | 2.5% | 4.2% |
| Verus (30-year) | 7.0% | 2.3% | 4.7% |
| **2024 Asset Allocation/ Capital Market Assumptions** | | | |
| Verus (10-year) | 7.7% | 2.5% | 5.2% |
| Verus (30-year) | 7.8% | 2.4% | 5.4% |
| **Current CCCERA Assumptions** | **6.75%** | **2.50%** | **4.25%** |

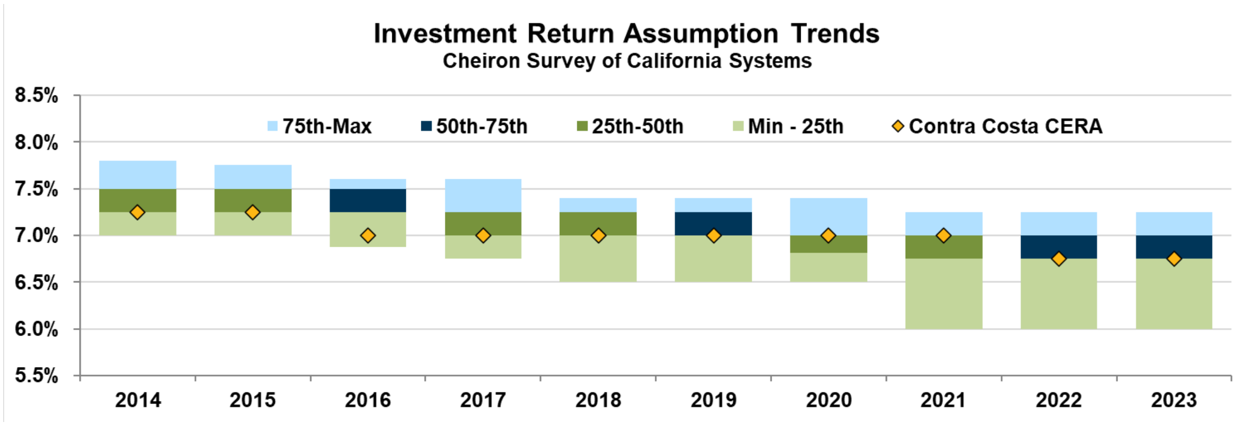
Our calculations show that the likelihood of achieving CCCERA's 6.75% return or higher were 53% in 2022 using Verus's 30-year capital market assumptions. In the current economic environment, the likelihood has increased to over 60%.

**Likelihood of Achieving Average Nominal Returns Over a 10-Year Period**

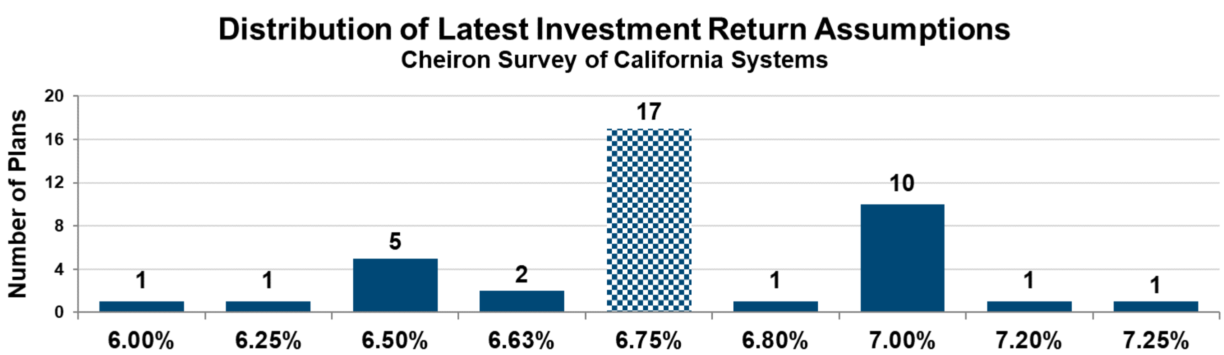
| | 2022 Asset Allocation/CMAs | | | 2024 Asset Allocation/CMAs | | |
|---|---|---|---|---|---|---|
| | 7.25% | 7.00% | 6.75% | 7.25% | 7.00% | 6.75% |
| **Verus (10-yr)** | 44% | 47% | 49% | 55% | 58% | 61% |
| **Verus (30-yr)** | 48% | 50% | 53% | 56% | 59% | 62% |

The following charts show a series of comparisons of the CCCERA return assumption based on Cheiron's survey of 39 large public pension plans in California, including all 20 of the 1937 Act Systems. The first chart shows the trend in the assumed rate of investment return from this survey. Prior to 2019, CCCERA' assumed rate of return has been on the lower end of the range, below the 50$^{th}$ percentile, of California systems. The last five years CCCERA's investment return assumption has been equal to the median.

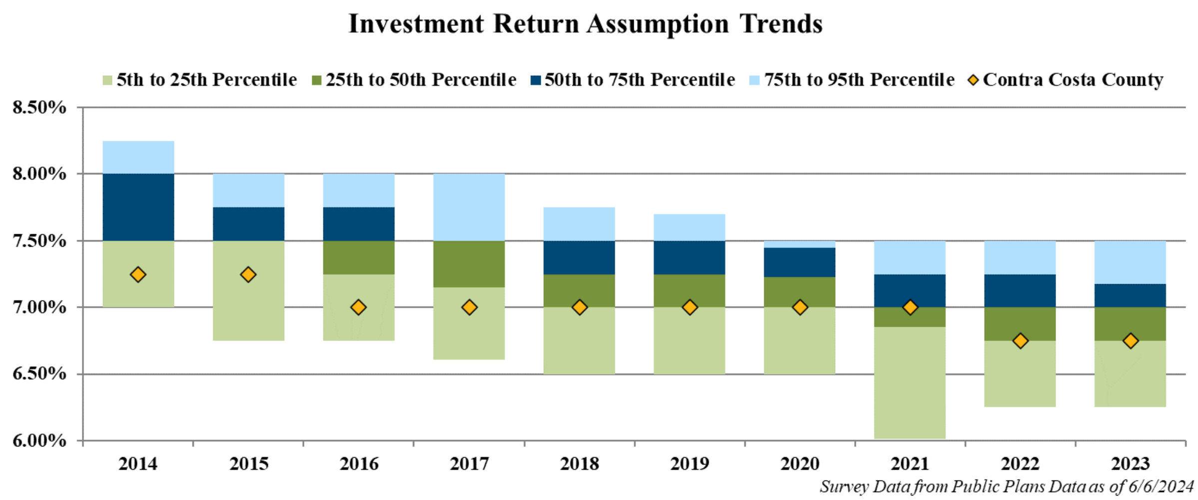
## SECTION VI – ECONOMIC ASSUMPTIONS




The chart below shows the distribution of the latest investment return assumptions, mostly from June 30, 2023 or January 1, 2023/December 31, 2022 actuarial valuations. The median and most common assumption for California systems is 6.75%, CCCERA's current assumption.




The chart below shows the trends in the assumed rate of return for over 200 public retirement systems nationwide. Over the last decade, CCCERA has been in the lowest 5th-25th percentile, with the exception of 2021.



# GAS 68

As part of the actuarial audit, we have performed a review of Segal's Government Accounting Standard Board Statement 68 (GAS 68) Actuarial Valuation, based on the December 31, 2022 Measurement Date for Employer Reporting as of June 30, 2023. Our review included a review of the following items from Segal's report:

- The calculation of the Total Pension Liability (TPL), including the roll-forward of the liability from the valuation date to the measurement date;
- The calculation of the discount rate;
- The Schedule of Changes in Net Pension Liability, including the calculation of the service cost, assumption changes, and differences between expected and actual experience;
- The calculation of the actuarially determined Pension Expense (Income), Deferred Outflows of Resources, and Deferred Inflows of Resources, both for CCCERA as a whole and for the individual employers;
- The calculations of the Net Pension Liability using a discount rate that is one percentage point higher and one percentage point lower than the stated rate used;
- The calculations of the proportionate shares for the participating employers; and
- All other actuarial calculations necessary for full compliance with GASB Statement No. 68, including a review of the employers' schedule

As part of our review process, we confirmed that the measurements for the items listed above as of the beginning of the measurement period were consistent with Segal's prior GAS 68 report (based on the December 31, 2021) measurement date. We then reviewed the roll-forward of the TPL from the valuation date to the measurement date for consistency with the December 31, 2021 actuarial funding valuation (upon which the roll-forward was based), and the Plan Fiduciary Net Position (PNFP) for consistency with the December 31, 2022 actuarial funding valuation and the supplementary asset schedules provided by CCCERA. Finally, we reviewed the schedules referenced above, based on the TPL and PFNP measurements and additional information provided by CCCERA, such as the payroll and contributions by employer.

Our review found that all items were calculated appropriately, and are consistent with prior GAS 68 reports, the actuarial funding reports, and the information provided by CCCERA.

## APPENDIX A - GLOSSARY OF TERMS

### 1. Actuarial Assumptions

Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, investment income, and salary increases. Demographic assumptions (rates of mortality, disability, turnover, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

### 2. Actuarial Gain (Loss)

The difference between actual experience and actuarial assumption anticipated experience during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial funding method.

### 3. Actuarial Liability

The Actuarial Liability is the present value of all benefits accrued as of the valuation date using the methods and assumptions of the valuation. It is also referred to by some actuaries as the "accrued liability" or "actuarial accrued liability."

### 4. Actuarial Present Value

The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payment.

### 5. Actuarial Value of Assets

The Actuarial Value of Assets equals the Market Value of Assets adjusted according to the smoothing method. The smoothing method is intended to smooth out the short-term volatility of investment returns in order to stabilize contribution rates and the funded status.

### 6. Actuarial Cost Method

A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal costs and the Actuarial Liability. It is sometimes referred to as the "actuarial funding method."

**APPENDIX A – GLOSSARY OF TERMS**

## 7. Funded Status

The Actuarial Value of Assets divided by the Actuarial Liability. The funded status can also be calculated using the Market Value of Assets.

## 8. Governmental Accounting Standards Board

The Governmental Accounting Standards Board (GASB) defines the accounting and financial reporting requirements for governmental entities. GASB Statement No. 67 defines the plan accounting and financial reporting for governmental pension plans, and GASB Statement No. 68 defines the employer accounting and financial reporting for participating in a governmental pension plan.

## 9. Market Value of Assets

The fair value of the Plan's assets assuming that all holdings are liquidated on the measurement date.

## 10. Normal Cost

The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. It is sometimes referred to as "current service cost." Any payment toward the Unfunded Actuarial Liability is not part of the normal cost.

## 11. Present Value of Projected Benefits

The estimated amount of assets needed today to pay for all benefits promised in the future to current members of the Plan, assuming all actuarial assumptions are met.

## 12. Present Value of Future Normal Costs

The actuarial present value of retirement association benefits allocated to future years of service.

## 13. Unfunded Actuarial Liability (UAL)

The difference between the Actuarial Liability and the Actuarial Value of Assets. This is sometimes referred to as the "unfunded accrued liability."

Classic Values, Innovative Advice

Meeting Date
09/11/2024
Agenda Item
#7

Contra Costa County Employees' Retirement Association

## MEMORANDUM

Date: September 11, 2024

To: CCCERA Board of Retirement

From: Christina Dunn, Chief Executive Officer

Subject: Consider and take possible action to adopt the December 31, 2023 Valuation Report and Contribution Rates for the period July 1, 2025—June 30, 2026.

---

**Background**
Segal Consulting has prepared the December 31, 2023 valuation report. The employer and member contribution rates shown in this report are effective July 1, 2025 to June 30, 2026.

**Recommendation**
Consider and take possible action to adopt the December 31, 2023 Valuation Report and Contribution Rates for the period July 1, 2025—June 30, 2026.

Meeting Date
09/11/2024
Agenda Item
#7

# Contra Costa County Employees' Retirement Association

**Actuarial Valuation and Review as of December 31, 2023**

This valuation report should only be copied, reproduced, or shared with other parties in its entirety as necessary for the proper administration of the Plan.



Segal

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July 19, 2024

Board of Retirement
Contra Costa County Employees' Retirement Association
1200 Concord Avenue, Suite 300
Concord, CA 94520

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of December 31, 2023. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal year 2025-2026.

This report has been prepared in accordance with generally accepted actuarial principles and practices for the exclusive use and benefit of the Board of Retirement, based upon information provided by the staff of CCCERA.

Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

The actuarial calculations were directed under the supervision of Andy Yeung, ASA, MAAA, FCA and Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. The assumptions used in this actuarial valuation were selected by the Board of Retirement based upon our analysis and recommendations. In our opinion, the assumptions are reasonable and take into account the experience of CCCERA and reasonable expectations. In addition, in our opinion, the combined effect of these assumptions is expected to have no significant bias.

Segal makes no representation or warranty as to the future status of the Plan and does not guarantee any particular result. This document does not constitute legal, tax, accounting or investment advice or create or imply a fiduciary relationship. The Board is encouraged to discuss any issues raised in this report with the Plan's legal, tax and other advisors before taking, or refraining from taking, any action.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal

Paul Angelo, FSA, MAAA, FCA, EA
Senior Vice President and Actuary

Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

Todd Tauzer, FSA, MAAA, FCA, CERA
Senior Vice President and Actuary

AW/jl

# Table of Contents

# Table of Contents

# Section 1: Actuarial Valuation Summary

## Purpose and basis

This report has been prepared by Segal to present a valuation of the Contra Costa County Employees' Retirement Association ("the Plan") as of December 31, 2023. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Plan, as administered by the Board of Retirement;
- The characteristics of covered active members,[1] inactive members and retired members and beneficiaries as of December 31, 2023, provided by the Retirement Association;
- The assets of the Plan as of December 31, 2023, provided by the Retirement Association;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board of Retirement for the December 31, 2023 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Board of Retirement for the December 31, 2023 valuation; and
- The funding policy adopted by the Board of Retirement.

Certain disclosure information required by Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 as of December 31, 2023 for the Plan is provided in a separate report.

One of the general goals of an actuarial valuation is to establish contributions which fully fund the Association's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

The contribution requirements are determined as a percentage of payroll. The Association's employer rates provide for both normal cost and a contribution to amortize any unfunded or overfunded actuarial accrued liabilities. In this valuation, we have applied the

[1] Similar to the disclosure we provided in our December 31, 2022 valuation report, the annual information for active members and, in particular, the service credit provided for active members was reported through November 30, 2023 instead of December 31, 2023. Based on prior discussions with CCCERA we understand that the Association is going to change its pension administration system so as to report service through December 31. This change will first be reflected in the valuation following the change in the pension administration system, and Segal will reflect the liability for that additional month of service at the same time.

funding policy adopted by the Board on February 26, 2014, updated on October 14, 2020 and September 13, 2023. Details of the funding policy are provided in *Section 4, Exhibit 1* starting on page 107.

The rates calculated in this report may be adopted by the Board of Retirement for the fiscal year that extends from July 1, 2025 through June 30, 2026.

## Valuation highlights

### Funding measures

1. The funded ratio (the ratio of valuation value of assets to the actuarial accrued liability) decreased slightly from 91.2% to 91.0%. This ratio is one measure of funding status, and its history is a measure of funding progress. Using the market value of assets, the funded ratio increased from 84.3% to 86.8%. These measurements are not necessarily appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for, or the amount of, future contributions. A history of the Association's funded ratios is provided in *Section 2, Subsection G* on pages 44 and 45.
2. The unfunded actuarial accrued liability (the difference between the actuarial accrued liability and the valuation value of assets) increased from $1.05 billion to $1.12 billion. The increase in unfunded actuarial accrued liability (UAAL) is primarily due to an investment return on the valuation value (i.e., after asset smoothing) less than the assumed rate of 6.75% and individual salary increases greater than expected by the assumptions used in the December 31, 2022 valuation. A reconciliation of the Association's UAAL from the prior year is provided in *Section 2, Subsection E* on page 29.

   Schedules of the current UAAL amortization balances and payments may be found in *Section 3, Exhibit H* starting on page 83. As discussed below, those schedules reflect recent Board action to adjust remaining UAAL amortization periods to six years for layers established as of December 31, 2012 through December 31, 2018. A graphical projection of the UAAL amortization balances and payments is provided in *Section 3, Exhibit I* on pages 105 and 106.

### Actuarial experience

3. The net actuarial loss of $154.9 million, or 1.24% of actuarial accrued liability, is due to an investment loss (after smoothing) of $155.4 million, or 1.25% of actuarial accrued liability, slightly offset by a net gain from sources other than investments of $0.6 million, or less than 0.01% of the actuarial accrued liability, prior to reflection of assumption changes, if applicable. For more details, see the complete reconciliation of the Association's UAAL from the prior year in in *Section 2, Subsection E* on page 29.

4. The rate of return on the market value of assets was 8.69% for the year ending December 31, 2023. The return on the valuation value of assets was 5.31% for the same period due to the recognition of prior years' investment gains and losses. This resulted in an actuarial loss when measured against the assumed rate of return of 6.75% used in the December 31, 2022 valuation. This actuarial investment loss (after asset smoothing) increased the average employer contribution rate by 1.03% of payroll.
5. As further discussed in *Section 2, Subsection D* on page 28, technical changes were made to the application of the Entry Age cost allocation method, which resulted in a decrease in the UAAL of $5.4 million. The impact of these changes is included in the net experience gain. Those changes include a computation of the normal cost rate reflecting the timing of the decrements (termination, death, disability and retirement) at the beginning of the year and approximating the entry age using years of service at the date of the valuation rounded down.
6. Effective with this December 31, 2023 valuation, we have implemented a process to transfer assets when a member changes from one cost group to another. This is done to ensure that there is no impact on the employer's UAAL contribution rate when such transfers occur. The amount of the asset transfer is equal to the actuarial accrued liability of the transferring members. Details can be found in *Appendix D, line 2* starting on page 173.

## Contributions

7. The Board approved an adjustment to the remaining amortization periods for certain amortization layers in order to minimize the contribution rate tail volatility associated with the UAAL layers established as of December 31, 2012 through December 31, 2018. This is done by setting the remaining amortization period for those UAAL layers to six years in the 2023 valuation. The tail volatility adjustment resulted in a decrease in the average employer rate of 1.50% of payroll, before taking into consideration other experience in the December 31, 2023 valuation.
8. The average employer rate calculated in this valuation has decreased from 30.01% to 28.55% of payroll. This decrease is primarily due to the tail volatility adjustments discussed above and amortizing the prior year's UAAL over a larger than projected total payroll, partially offset by the investment return on the valuation value (i.e., after asset smoothing) less than the assumed rate of 6.75% and individual salary increases greater than expected by the assumptions used in the December 31, 2022 valuation. A complete reconciliation of the Association's aggregate employer rate is provided in *Section 2, Subsection F* on page 32.

   Separate employer contribution rates are shown for members with membership dates before January 1, 2013 (non-PEPRA or "legacy" members) and on or after January 1, 2013 (PEPRA members). However, the average employer contribution rates shown in *Section 1* are based on all members regardless of their membership date. A detailed schedule of the employer contribution rates is provided in *Section 2, Subsection F* starting on page 34.

A schedule with the recommended employer contribution rates that will be used in preparing the contribution rate packet is provided in *Appendix E* starting on page 176.

9. The average member rate calculated in this valuation has decreased from 12.18% to 12.13% of payroll. A complete reconciliation of the Association's aggregate member rate is provided in *Section 2, Subsection F* on page 33.

   The detailed member rates by cost group are provided in *Section 4, Exhibit 3* starting on page 140.

10. This valuation reflects $288,000 in additional contributions made by San Ramon Valley Fire Department and $90,015 in additional contributions made by In-Home Supportive Services Authority towards their UAAL. These amounts have been amortized separately as a level percent of pay (a rate credit) over a period of 18 years beginning with the December 31, 2023 valuation to reduce the respective employers' UAAL contributions.

11. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the UAAL and the principal balance. The funding policy adopted by the Board of Retirement meets this standard.

## Future expectations

12. The total unrecognized net investment **loss** as of December 31, 2023 is $532 million as compared to an unrecognized net investment **loss** of $825 million in the previous valuation. This net deferred loss of $532 million will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years as shown in *Section 2, Subsection B* on page 22.

    The net deferred loss of $532 million represents about 4.9% of the market value of assets. Unless offset by future investment gains or other favorable experience, the recognition of the $532 million net market loss is expected to have an impact on the Association's future funded ratio and contribution rate requirements. This potential impact may be illustrated as follows:

    a. If the net deferred loss was recognized immediately in the valuation value of assets, the funded percentage would decrease from 91.0% to 86.8%.

       For comparison purposes, if the net deferred loss in the December 31, 2022 valuation had been recognized immediately in the December 31, 2022 valuation, the funded percentage would have decreased from 91.2% to 84.3%.

    b. If the net deferred loss was recognized immediately in the valuation value of assets, the average employer contribution rate would increase from 28.55% to 32.07% of payroll.

       For comparison purposes, if the net deferred loss in the December 31, 2022 valuation had been recognized immediately in the December 31, 2022 valuation, the average employer contribution rate would have increased from 30.01% to 35.87% of payroll.

## Risk

13. It is important to note that this actuarial valuation is based on plan assets as of December 31, 2023. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after December 31, 2023. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.
14. Because the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. While we have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Plan's future financial condition, we have included a brief discussion of some risks that may affect the Plan in *Section 2, Subsection I*, beginning on page 47. This discussion of risks is included to satisfy the disclosures required by the Actuarial Standard of Practice No. 51 (ASOP 51).
15. The risk assessment in *Section 2, Subsection I* includes the disclosure of a "Low-Default-Risk Obligation Measure" (LDROM). This disclosure, along with commentary on the significance of the LDROM, is a new requirement under Actuarial Standard of Practice No. 4 (ASOP 4) for all pension funding actuarial valuation reports and can be found starting on page 49.

## GASB

16. This report constitutes an actuarial valuation for the purpose of determining a reasonable actuarially determined contribution (ADC) under ASOP 4 and the Plan's funding policy, as well as measuring the progress of that funding policy. The Net Pension Liability and Pension Expense under GASB Statements No. 67 and No. 68, for inclusion in the Plan's and employer's financial statements as of December 31, 2023, will be provided separately. The accounting disclosures will utilize different methodologies from those employed in the funding valuation, as required by the GASB. However, the ADC in this valuation is expected to be used as the ADC for GASB financial reporting.

## Summary of key valuation results

### Average Employer Contribution[1] Calculated as of December 31

*($ in ‘000s)*

| Cost Group and Employer | 2023 Total Rate | 2023 Estimated Amount[2] | 2022 Total Rate | 2022 Estimated Amount[2] |
|---|---|---|---|---|
| **General** | | | | |
| • Cost Group 1 – County and Small Districts (Tiers 1 and 4) | 24.00% | $5,575 | 24.96% | $5,878 |
| • Cost Group 2 – County and Small Districts (Tiers 3 and 5) | 21.41% | 180,406 | 22.35% | 174,790 |
| • Cost Group 3 – Central Contra Costa Sanitary District | 17.80% | 7,504 | 16.56% | 6,713 |
| • Cost Group 4 – Contra Costa Housing Authority | 27.50% | 1,888 | 28.28% | 1,938 |
| • Cost Group 5 – Contra Costa County Fire Protection District | 39.81% | 3,668 | 38.80% | 3,080 |
| • Cost Group 6 – Small Districts (Non-Enhanced Tiers 1 and 4) | 15.13% | 203 | 15.78% | 175 |
| **Safety** | | | | |
| • Cost Group 7 – County (Tiers A and D) | 59.75% | $27,563 | 63.54% | $31,326 |
| • Cost Group 8 – Contra Costa Fire Protection District | 60.55% | 42,800 | 66.96% | 40,575 |
| • Cost Group 9 – County (Tiers C and E) | 49.46% | 37,202 | 53.35% | 34,822 |
| • Cost Group 10 – Moraga-Orinda Fire District | 91.22% | 8,292 | 88.64% | 7,982 |
| • Cost Group 11 – San Ramon Valley Fire District | 48.58% | 12,440 | 50.96% | 12,851 |
| • Cost Group 12 – Rodeo-Hercules Fire Protection District | 76.09% | 2,247 | 89.35% | 2,096 |
| **All Cost Groups combined** | **28.55%** | **$329,788** | **30.01%** | **$322,227** |

**Note:** Pages 171 and 172 contain a summary that shows which employers are in each cost group.

[1] These rates **do not** include any employer subvention of member contributions or any member subvention of employer contributions.
[2] Based on projected compensation for each valuation date shown.

## Average Member Contribution[1] Calculated as of December 31

*($ in '000s)*

| Cost Group and Employer | 2023 Total Rate | 2023 Estimated Amount[2] | 2022 Total Rate | 2022 Estimated Amount[2] |
|---|---|---|---|---|
| **General** | | | | |
| • Cost Group 1 – County and Small Districts (Tiers 1 and 4) | 11.62% | $2,699 | 11.44% | $2,695 |
| • Cost Group 2 – County and Small Districts (Tiers 3 and 5) | 10.68% | 89,994 | 10.76% | 84,160 |
| • Cost Group 3 – Central Contra Costa Sanitary District | 11.55% | 4,868 | 11.57% | 4,691 |
| • Cost Group 4 – Contra Costa Housing Authority | 11.71% | 804 | 11.78% | 807 |
| • Cost Group 5 – Contra Costa County Fire Protection District | 11.85% | 1,092 | 11.91% | 946 |
| • Cost Group 6 – Small Districts (Non-Enhanced Tiers 1 and 4) | 13.23% | 178 | 13.75% | 153 |
| **Safety** | | | | |
| • Cost Group 7 – County (Tiers A and D) | 18.66% | $8,608 | 18.83% | $9,283 |
| • Cost Group 8 – Contra Costa Fire Protection District | 17.60% | 12,441 | 17.58% | 10,652 |
| • Cost Group 9 – County (Tiers C and E) | 17.06% | 12,832 | 17.03% | 11,116 |
| • Cost Group 10 – Moraga-Orinda Fire District | 18.19% | 1,653 | 18.41% | 1,658 |
| • Cost Group 11 – San Ramon Valley Fire District | 17.46% | 4,471 | 16.88% | 4,257 |
| • Cost Group 12 – Rodeo-Hercules Fire Protection District | 16.54% | 488 | 14.83% | 348 |
| **All Cost Groups combined** | **12.13%** | **$140,130** | **12.18%** | **$130,764** |

**Note:** Pages 171 and 172 contain a summary that shows which employers are in each cost group.

[1] These rates **do not** include any employer subvention of member contributions or any member subvention of employer contributions.
[2] Based on projected compensation for each valuation date shown.

# Section 1: Actuarial Valuation Summary

## Valuation Results as of December 31

| Line Description | 2023 | 2022 |
|---|---|---|
| **Actuarial accrued liability** | | |
| • Total actuarial accrued liability | $12,438,710,062 | $11,912,228,880 |
| – Retired members and beneficiaries | 8,100,537,061 | 7,745,002,318 |
| – Inactive members[1] | 369,447,362 | 360,870,317 |
| – Active members | 3,968,725,639 | 3,806,356,245 |
| • Normal cost for plan year beginning December 31[2] | 314,221,323 | 296,628,244 |
| **Assets** | | |
| • Market value of assets (MVA) | $10,808,858,259 | $10,053,668,812 |
| • Actuarial value of assets (AVA) | 11,340,825,456 | 10,878,817,667 |
| • Actuarial value of assets as a percentage of market value of assets | 104.9% | 108.2% |
| • Valuation value of assets (VVA) | $11,323,476,654 | $10,861,822,062 |
| **Funded status** | | |
| • Unfunded Actuarial Accrued Liability on MVA basis[3] | $1,647,200,605 | $1,875,555,673 |
| • Funded percentage on MVA basis[3] | 86.8% | 84.3% |
| • Unfunded Actuarial Accrued Liability on VVA basis | $1,115,233,408 | $1,050,406,818 |
| • Funded percentage on VVA basis | 91.0% | 91.2% |
| **Key assumptions** | | |
| • Net investment return | 6.75% | 6.75% |
| • Inflation rate | 2.50% | 2.50% |
| • Payroll growth | 3.00% | 3.00% |
| • Cost-of-living adjustments | | |
| – Tiers with 3%/4% COLA | 2.75% | 2.75% |
| – Tiers with 2% COLA | 2.00% | 2.00% |

1 Includes inactive members with member contributions on deposit.
2 Includes administrative expenses.
3 Both the UAAL and the funded percentage on MVA basis have been calculated by using the MVA reduced by non-valuation reserves in the amount of $17,348,802 as of 2023 and $16,995,605 as of 2022.

## Demographic Data as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number of members | 10,349 | 10,082 | 2.6% |
| • Average age | 46.1 | 46.1 | 0.0 |
| • Average service | 9.9 | 10.1 | (0.2) |
| • Total projected compensation | $1,155,129,563 | $1,073,886,785 | 7.6% |
| • Average projected compensation | $111,618 | $106,515 | 4.8% |
| **Retired members and beneficiaries** | | | |
| • Number of members | 10,805 | 10,561 | 2.3% |
| – Service retired | 8,407 | 8,197 | 2.6% |
| – Disability retired | 872 | 874 | -0.2% |
| – Beneficiaries | 1,526 | 1,490 | 2.4% |
| • Average age | 71.3 | 71.1 | 0.2 |
| • Average monthly benefit | $4,606 | $4,466 | 3.1% |
| **Inactive members** | | | |
| • Number of members[1] | 4,109 | 3,974 | 3.4% |
| • Average age | 46.5 | 46.5 | 0.0 |
| **Total members** | **25,263** | **24,617** | **2.6%** |

[1] Includes 1,987 inactive non-vested members due a refund of member contributions as of 2023 and 2,183 as of 2022.

## Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal relies on a number of input items. These include:

| Input Item | Description |
|---|---|
| **Plan provisions** | Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits. |
| **Member information** | An actuarial valuation for a plan is based on data provided to the actuary by the Association. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data. |
| **Financial information** | Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the Association. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements. |
| **Actuarial assumptions** | In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan members for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of members in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments (if applicable). The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong. |

# Section 1: Actuarial Valuation Summary

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Association. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
- If CCCERA is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting or tax advice and is not acting as a fiduciary to the Plan. This valuation is based on Segal's understanding of applicable guidance in these areas and of the Plan's provisions, but they may be subject to alternative interpretations. The Association should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
- Segal's report shall be deemed to be final and accepted by CCCERA upon delivery and review. CCCERA should notify Segal immediately of any questions or concerns about the final content.

# Section 2: Actuarial Valuation Results

## A. Member information

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups. More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A, B, and C*.

### Member Population

| As of December 31 | Active Members | Inactive Members[1] | Retired Members & Beneficiaries (Pay Status) | Total Non-Actives | Ratio of Non-Actives to Actives | Ratio of Pay Status to Actives |
|---|---|---|---|---|---|---|
| 2014 | 9,159 | 2,647 | 8,871 | 11,518 | 1.26 | 0.97 |
| 2015 | 9,642 | 2,790 | 9,068 | 11,858 | 1.23 | 0.94 |
| 2016 | 9,848 | 3,089 | 9,100 | 12,189 | 1.24 | 0.92 |
| 2017 | 10,038 | 3,327 | 9,267 | 12,594 | 1.25 | 0.92 |
| 2018 | 10,021 | 3,477 | 9,547 | 13,024 | 1.30 | 0.95 |
| 2019 | 10,075 | 3,638 | 9,737 | 13,375 | 1.33 | 0.97 |
| 2020 | 10,099 | 3,591 | 10,018 | 13,609 | 1.35 | 0.99 |
| 2021 | 10,005 | 3,812 | 10,278 | 14,090 | 1.41 | 1.03 |
| 2022 | 10,082 | 3,974 | 10,561 | 14,535 | 1.44 | 1.05 |
| 2023 | 10,349 | 4,109 | 10,805 | 14,914 | 1.44 | 1.04 |

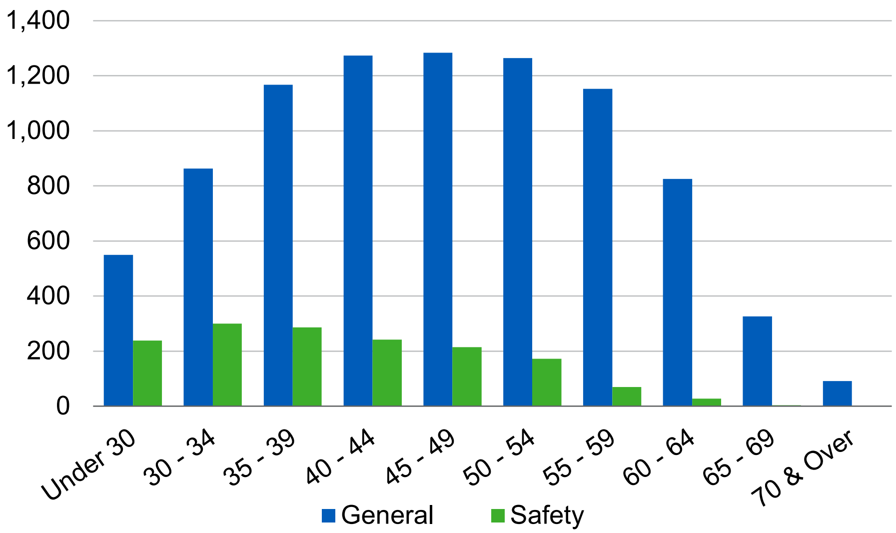
[1] Includes inactive members with member contributions on deposit.

## Active Members as of December 31

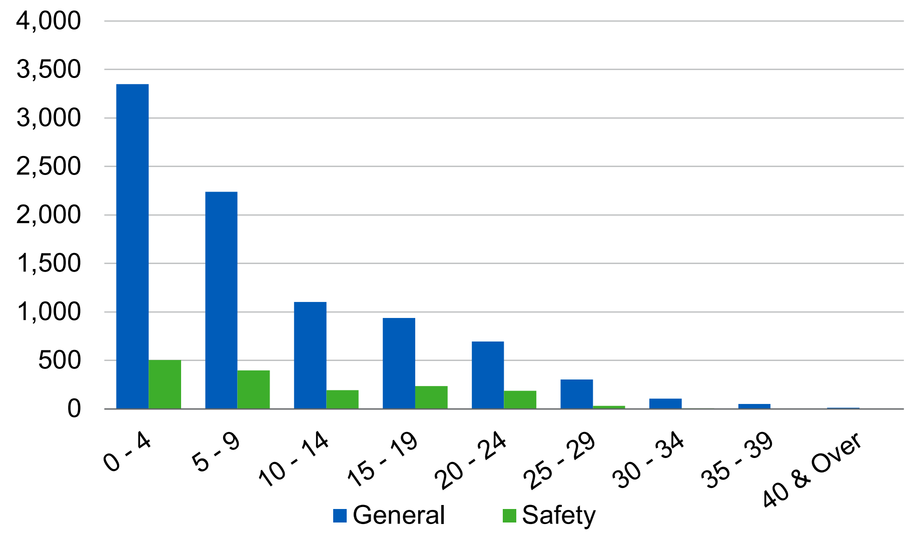
| Line Description | 2023 | 2022 | Change |
|---|---|---|---|
| Active members | 10,349 | 10,082 | 2.6% |
| Average age[1] | 46.1 | 46.1 | 0.0 |
| Average years of service | 9.9 | 10.1 | (0.2) |
| Average compensation | $111,618 | $106,515 | 4.8% |

## Distribution of Active Members as of December 31, 2023

### Actives by Age




### Actives by Years of Service




## Inactive Members as of December 31

| Line Description | 2023 | 2022 | Change |
|---|---|---|---|
| Inactive members[2] | 4,109 | 3,974 | 3.4% |

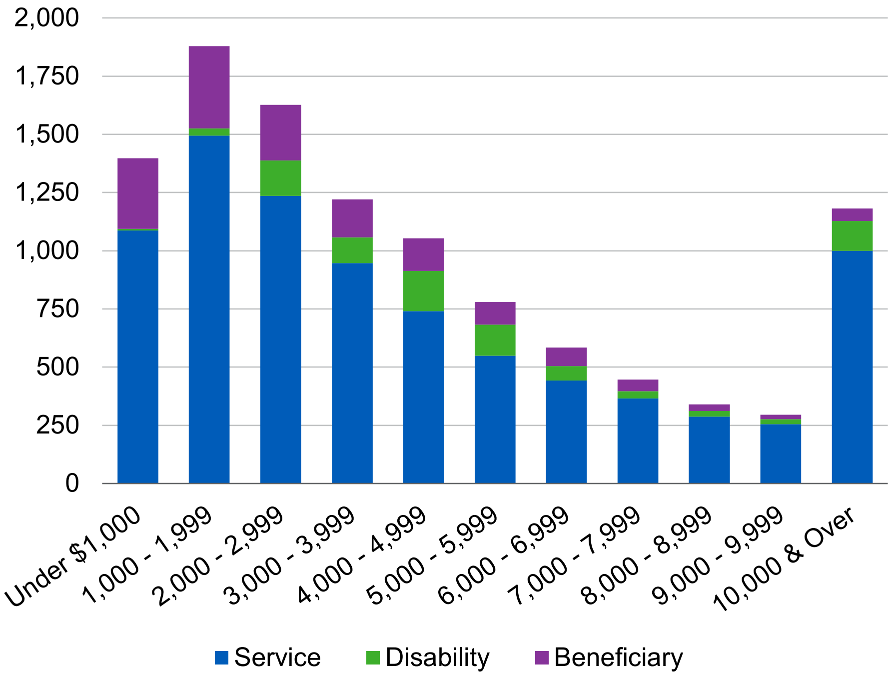
[1] Among the active members, there were none with unknown age information.
[2] Includes inactive members with member contributions on deposit.

### Retired Members and Beneficiaries as of December 31

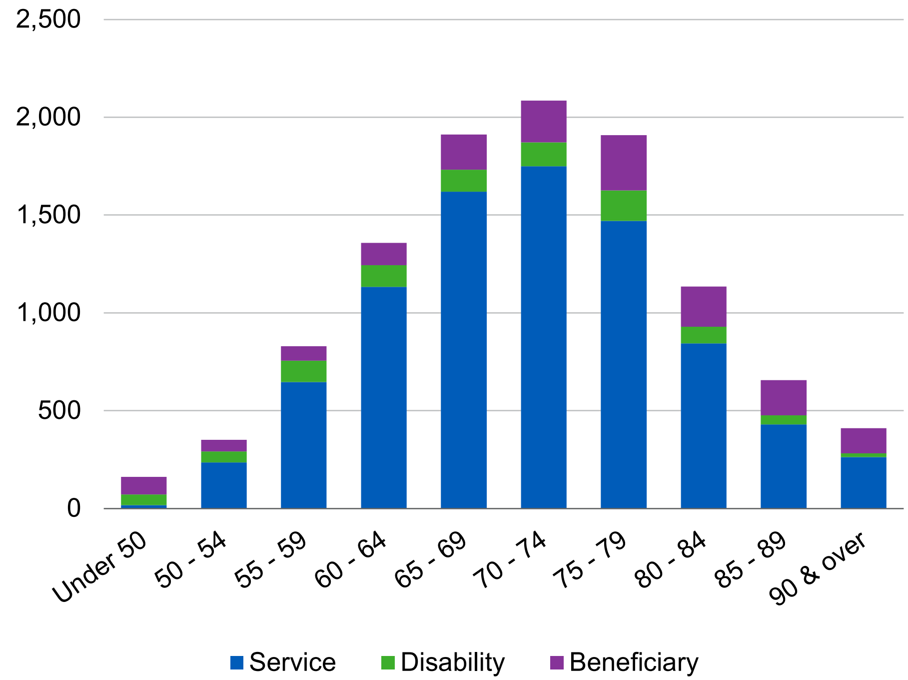
| Line Description | 2023 | 2022 | Change |
|---|---|---|---|
| Retired members | 9,279 | 9,071 | 2.3% |
| Beneficiaries | 1,526 | 1,490 | 2.4% |
| Average age | 71.3 | 71.1 | 0.2 |
| Average monthly amount | $4,606 | $4,466 | 3.1% |
| Total monthly amount | $49,758,676 | $47,165,238 | 5.5% |

### Distribution of Retired Members and Beneficiaries as of December 31, 2023

#### By Type and Monthly Amount




#### By Type and Age



## Historical plan population

The chart below demonstrates the progression of the active population over the last ten years. The chart also shows the growth among the retired population over the same time period.

### Historical Member Data

*Active Members versus Retired Members and Beneficiaries (Pay Status)*

| As of December 31 | Active Count | Active Average Age | Active Average Service | Pay Status Count | Pay Status Average Age | Pay Status Monthly Amount |
|---|---|---|---|---|---|---|
| 2014 | 9,159 | 45.8 | 9.9 | 8,871 | 69.4 | $3,669 |
| 2015 | 9,642 | 45.9 | 9.9 | 9,068 | 69.9 | 3,706 |
| 2016 | 9,848 | 45.9 | 9.9 | 9,100 | 70.0 | 3,799 |
| 2017 | 10,038 | 46.0 | 9.8 | 9,267 | 70.3 | 3,892 |
| 2018 | 10,021 | 46.2 | 9.9 | 9,547 | 70.4 | 3,986 |
| 2019 | 10,075 | 46.3 | 10.1 | 9,737 | 70.6 | 4,116 |
| 2020 | 10,099 | 46.3 | 10.2 | 10,018 | 70.8 | 4,219 |
| 2021 | 10,005 | 46.3 | 10.2 | 10,278 | 70.9 | 4,353 |
| 2022 | 10,082 | 46.1 | 10.1 | 10,561 | 71.1 | 4,466 |
| 2023 | 10,349 | 46.1 | 9.9 | 10,805 | 71.3 | 4,606 |

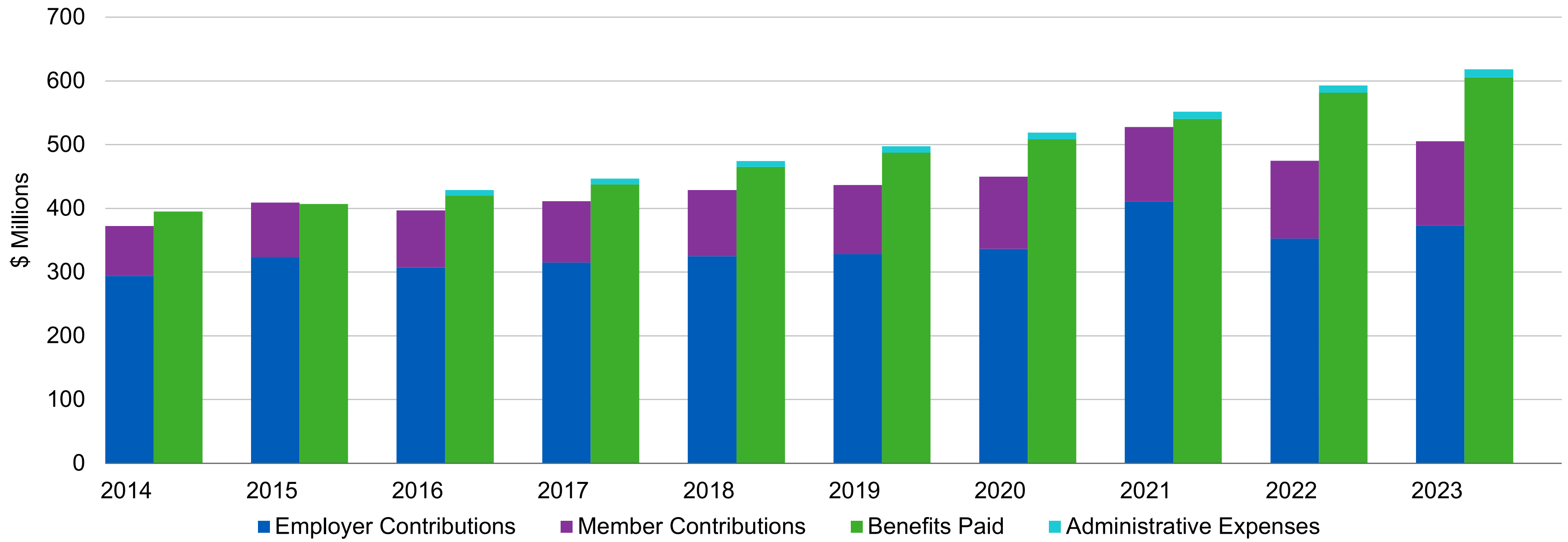
## B. Financial information

Retirement plan funding anticipates that, over the long term, both contributions and investment earnings (less investment fees) will be needed to cover benefit payments and administrative expenses. Retirement plan assets change as a result of the net impact of these income and expense components.

Additional financial information, including a summary of transactions for the valuation year, is presented in *Section 3, Exhibits D through G.*

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the valuation asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

### Comparison of Contributions Made with Benefits and Expenses[1] for Years Ended December 31




[1] Prior to 2016, administrative expenses were included as an offset to investment income and are not shown in the graph. Starting in 2016, the employer and member contributions shown in the graph include an administrative expense load.

## Determination of Actuarial Value and Valuation Value of Assets for Year Ended December 31, 2023

| | Step | Actual Return | Expected Return | Investment Gain/(Loss) | Percent Deferred | Deferred Amount | Amount |
|---|---|---|---|---|---|---|---|
| 1. | Market value of assets | | | | | | $10,808,858,259 |
| **2.** | **Calculation of deferred return** | | | | | | |
| a. | Period ended December 31, 2018 | $(258,676,279) | $289,889,306 | $(548,565,585) | 0% | $0 | |
| b. | Period ended June 30, 2019 | 820,000,188 | 280,075,265 | 539,924,922 | 0% | 0 | |
| c. | Period ended December 31, 2019 | 348,171,398 | 307,217,326 | 40,954,072 | 10% | 4,095,407 | |
| d. | Period ended June 30, 2020 | (302,015,927) | 318,113,258 | (620,129,184) | 20% | (124,025,837) | |
| e. | Period ended December 31, 2020 | 1,184,409,986 | 306,509,032 | 877,900,954 | 30% | 263,370,286 | |
| f. | Period ended June 30, 2021 | (254,319,434) | 346,562,358 | (600,881,792) | 40% | (240,352,717) | |
| g. | Period ended December 31, 2021 | 1,661,663,047 | 337,995,697 | 1,323,667,350 | 50% | 661,833,675 | |
| h. | Period ended June 30, 2022 | (1,235,218,785) | 393,183,225 | (1,628,402,011) | 60% | (977,041,206) | |
| i. | Period ended December 31, 2022 | (46,688,578) | 336,398,943 | (383,087,521) | 70% | (268,161,264) | |
| j. | Period ended June 30, 2023 | 532,635,863 | 332,783,528 | 199,852,335 | 80% | 159,881,868 | |
| k. | Period ended December 31, 2023 | 335,615,067 | 348,467,744 | (12,852,677) | 90% | (11,567,409) | |
| **l.** | **Total deferred return**[1] | | | | | | $(531,967,197) |
| **3.** | **Actuarial value of assets: 1 – 2l** | | | | | | **$11,340,825,456** |
| 4. | Ratio of actuarial to market value: **3 ÷ 1** | | | | | | 104.9% |
| **5.** | **Non-valuation reserves and designations** | | | | | | |
| a. | Post Retirement Death Benefit | | | | | | $17,348,802 |
| b. | Statutory Contingency | | | | | | 0 |
| c. | Additional One Percent Contingency | | | | | | 0 |
| d. | Unrestricted Designation | | | | | | 0 |
| **e.** | **Total** | | | | | | **$17,348,802** |
| **6.** | **Valuation value of assets: 3 – 5e** | | | | | | **$11,323,476,654** |

**Note**: Results may be slightly off due to rounding.

[1] Total deferred return is equal to the **sum of 2a through 2k.** The total deferred return as of December 31, 2023 is recognized in each of the next five years as follows:

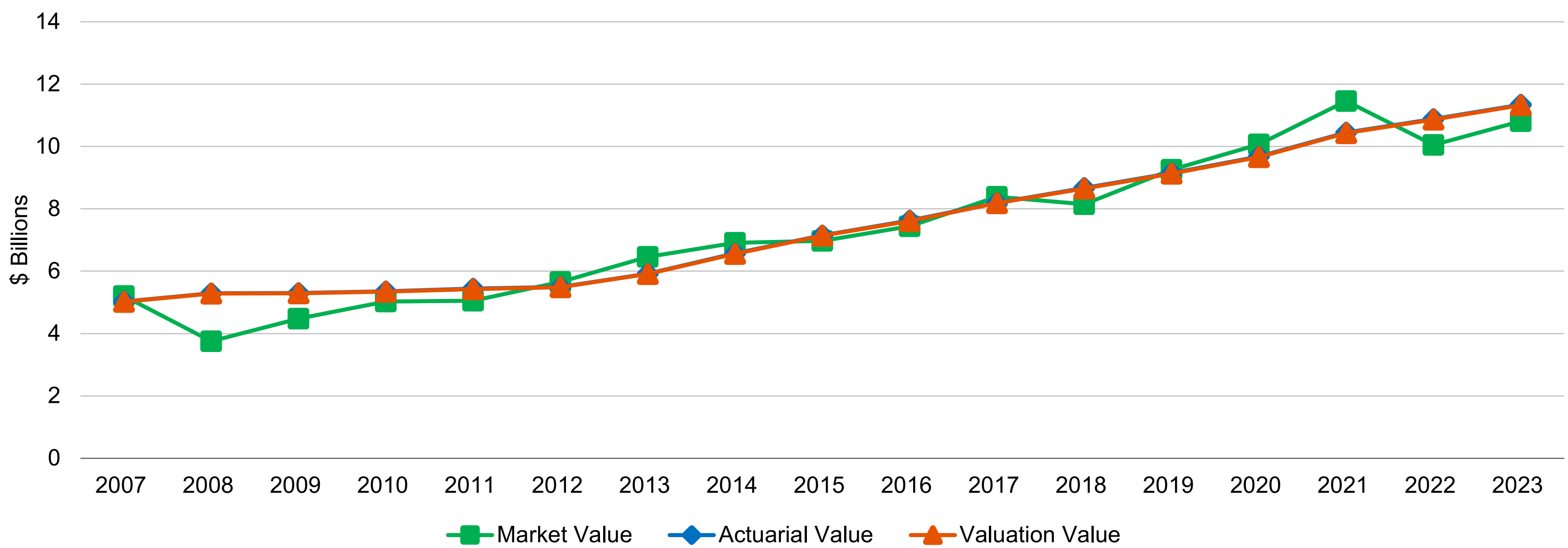
| | | |
|---|---|---|
| a. | Amount recognized on December 31, 2024 | $(164,691,103) |
| b. | Amount recognized on December 31, 2025 | (132,550,767) |
| c. | Amount recognized on December 31, 2026 | (232,531,239) |
| d. | Amount recognized on December 31, 2027 | (908,820) |
| e. | Amount recognized on December 31, 2028 | (1,285,268) |

## Asset history

The market value, actuarial value and valuation value of assets are representations of the Plan's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The valuation value of assets is generally the actuarial value, excluding any non-valuation reserves.

The valuation value of assets is significant because the Plan's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

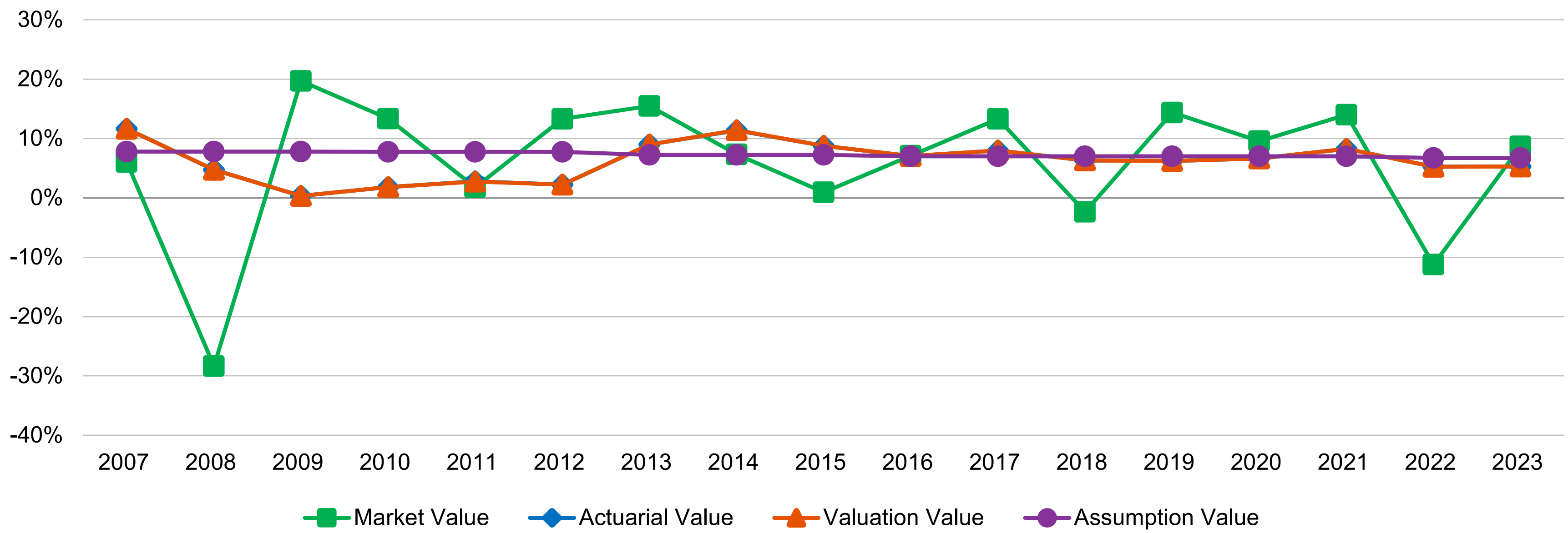
Market Value, Actuarial[1] Value, and Valuation Value of Assets as of December 31




[1] The actuarial value and the valuation value have been substantially the same over the time period shown, differing by no more than $20 million.

## Historical investment returns

Market, Actuarial and Valuation Rates of Return for Years Ended December 31




| Legend | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Market rate | 6.03% | (28.35%) | 19.68% | 13.35% | 1.76% | 13.31% | 15.50% | 7.35% | 0.95% | 7.10% | 13.31% | (2.33%) | 14.39% | 9.57% | 13.99% | (11.25%) | 8.69% |
| Actuarial rate | 11.63% | 4.73% | 0.34% | 1.82% | 2.78% | 2.25% | 9.01% | 11.39% | 8.78% | 7.04% | 8.00% | 6.32% | 6.24% | 6.62% | 8.24% | 5.25% | 5.31% |
| Valuation rate | 11.64% | 4.72% | 0.32% | 1.80% | 2.77% | 2.24% | 9.02% | 11.40% | 8.79% | 7.04% | 8.00% | 6.32% | 6.24% | 6.62% | 8.24% | 5.25% | 5.31% |
| Assumed rate | 7.80% | 7.80% | 7.80% | 7.75% | 7.75% | 7.75% | 7.25% | 7.25% | 7.25% | 7.00% | 7.00% | 7.00% | 7.00% | 7.00% | 7.00% | 6.75% | 6.75% |

| Average Rates of Return | Market Value | Actuarial Value | Valuation Value |
|---|---|---|---|
| Most recent five-year geometric average return | 6.63% | 6.33% | 6.33% |
| Most recent 10-year geometric average return | 5.88% | 7.30% | 7.31% |
| Most recent 15-year geometric average return | 8.06% | 5.92% | 5.92% |

## C. Actuarial experience

To calculate any actuarially determined contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the actuarially determined contribution will decrease from the previous year. On the other hand, the actuarially determined contribution will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years. There are no changes in actuarial assumptions reflected in this valuation.

The actuarial experience for the year can be found below and a discussion of the major components can be found on the following pages.

### Actuarial Experience for Year Ended December 31, 2023

| Source | Amount |
|---|---|
| 1. Net (gain)/loss from investments[1] | $155,422,512 |
| 2. Net (gain)/loss from contribution experience[2] | (53,158,609) |
| 3. Net (gain)/loss from other experience[3] | 52,593,236 |
| **4. Net experience (gain)/loss** | **$154,857,139** |

[1] Details on next page.
[2] See *Section 2, Subsection E* for further details. Includes the contribution gain from additional UAAL contributions made by certain employers.
[3] See *Section 2, Subsection E* for further details. Does not include the effect of plan or assumption changes, if any.

## Investment experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan's investment policy.

For valuation purposes, the assumed rate of return on the valuation value of assets is 6.75% based on the December 31, 2022 valuation. The actual rate of return on a valuation basis for the 2023 plan year was 5.31% after considering the recognition of prior years' investment gains and losses. Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended December 31, 2023 with regard to its investments.

### Investment Experience for Year Ended December 31, 2023

| Line Description | Market Value | Actuarial Value | Valuation Value |
|---|---|---|---|
| 1. Net investment income | $868,250,929 | $575,069,271 | $573,955,595 |
| 2. Average value of assets | 9,997,068,096 | 10,822,216,951 | 10,805,601,585 |
| 3. Rate of return: **1 ÷ 2** | 8.69% | 5.31% | 5.31% |
| 4. Assumed rate of return | 6.75% | 6.75% | 6.75% |
| 5. Expected investment income:[1] **2 × 4** | 674,802,096 | 730,499,644 | 729,378,107 |
| **6. Investment gain/(loss): 1 − 5** | **$193,448,833** | **$(155,430,373)** | **$(155,422,512)** |

[1] The expected investment returns are based on January 1, 2023 asset values and, with the exception of special contributions, do not take into account the actual timing of cashflows during the year. Instead, normal contributions, benefit payments and expenses are assumed to occur in the middle of the year.

## Contributions

Contributions (excluding additional UAAL contributions) for the year ended December 31, 2023 totaled $504.9 million, compared to the projected amount of $453.8 million. This resulted in a gain of $52.8 million for the year, when adjusted for timing.

Additional UAAL contributions of $90,015 were made by In-Home Supportive Services Authority and $288,000 were made by San Ramon Valley Fire District. These amounts, when adjusted for timing, resulted in a gain of $93,003 for In-Home Supportive Services Authority and $295,995 for San Ramon Valley Fire District.

## Other experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- Mortality experience (more or fewer than expected deaths)
- The extent of turnover among members
- Retirement experience (earlier or later than projected)
- The number of disability retirements (more or fewer than projected)
- Salary increases (greater or smaller than projected)
- Cost-of-living adjustments (COLAs) (higher or lower than assumed)
- Administrative expenses (higher or lower than assumed)

The net loss from this other experience for the year ended December 31, 2023 amounted to $52.6 million, which is 0.4% of the actuarial accrued liability. See *Section 2, Subsection E* for a detailed development of the unfunded actuarial accrued liability.

## D. Other changes impacting the actuarial accrued liability

### Actuarial assumptions and methods

- The administrative expenses assumption has increased from 1.13% of payroll in last year's valuation to 1.17% of payroll in this year's valuation based on the actual administrative expenses and actual payroll reported by CCCERA.
- This valuation reflects two minor actuarial methodology adjustments in calculating the normal cost rate:
  - Applying beginning of year timing of decrements for exiting from active membership status;
  - Approximating the entry age using the years of service at the date of the valuation rounded down.

  The adjustments result in a net decrease in the Plan's UAAL of $5.4 million, a net decrease of about 0.12% in the average employer rate and a net decrease of about 0.06% in the average member contribution rate.

Details on actuarial assumptions and methods are in *Section 4, Exhibit 1*.

### Plan provisions

There were no changes in plan provisions since the prior valuation.

A summary of plan provisions is in *Section 4, Exhibit 2*.

## E. Unfunded actuarial accrued liability

### Reconciliation of Unfunded Actuarial Accrued Liability

| Line Description | Amount |
|---|---|
| 1. Unfunded actuarial accrued liability as of December 31, 2022 | $1,050,406,818 |
| 2. Normal cost[1] at middle of year | 285,889,379 |
| 3. Expected administrative expenses | 12,511,959 |
| 4. Expected employer and member contributions | (453,799,656) |
| 5. Interest to end of year | 65,367,769 |
| **6. Expected unfunded actuarial accrued liability as of December 31, 2023** | **$960,376,269** |
| 7. Changes due to: | |
| a. Investment return lower than expected, after asset smoothing | $155,422,512 |
| b. Actual contributions greater than expected under funding policy[2] | (52,769,611) |
| c. Gain from additional UAAL contributions for In Home Support Services[3] | (93,003) |
| d. Gain from additional UAAL contributions for San Ramon FD[4] | (295,995) |
| e. Individual salary increases greater than expected | 66,211,928 |
| f. COLA increases lower than expected for April 1, 2024[5] | (8,343,279) |
| g. Other net experience (gain)/loss[6] | (5,275,413) |
| **h. Total changes** | **$154,857,139** |
| **8. Unfunded actuarial accrued liability as of December 31, 2023: 6 + 7h** | **$1,115,233,408** |

**Note:** The sum of items 7b through 7d equals the "Net (gain)/loss from contribution experience" shown in *Section 2, Subsection C*.
The sum of items 7e through 7g equals the "Net (gain)/loss from other experience" shown in *Section 2, Subsection C*.

[1] Excludes administrative expense load.

[2] The actual employer contributions were greater than expected due to the scheduled 18-month lag in implementing the lower contribution rates calculated in the December 31, 2022 valuation for Fiscal Year 2024-2025, as well as actual covered payroll for 2023 being greater than the projected compensation in the December 31, 2022 valuation.

[3] In-Home Supportive Services Authority made additional UAAL contributions of $90,015, adjusted with $2,988 in interest to the end of the year.

[4] San Ramon Valley Fire District made additional UAAL contributions of $288,000, adjusted with $7,995 in interest to the end of the year.

[5] For tiers with a maximum 3% or 4% COLA, the actual COLA increase on April 1, 2024 is 2.5% for those retirees without a COLA bank.

[6] Includes a decrease in UAAL of $5.4 million as a result of two minor technical actuarial refinements as discussed on the prior page. Also includes other differences in actual versus expected experience including (but not limited to) mortality, retirement, disability, termination and leave cashout experience.

## F. Recommended contribution

The recommended contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. As of December 31, 2023, the average recommended employer contribution is 28.55% of payroll.

The Board sets the funding policy used to calculate the recommended contribution based on layered 18-year[1] amortization periods as a level percentage of payroll. See *Section 4, Exhibit 1* for further details on the funding policy. Based on this policy, there is no negative amortization and each amortization layer is fully funded in 18 years. As shown in the graphical projection of the UAAL amortization balances and payments found in *Section 3, Exhibit I*, before taking into consideration the deferred investment gains and/or losses that will be recognized in the next several valuations, the UAAL of the Plan is expected to be fully amortized by 2041,[2] assuming all assumptions are realized and contributions are made in accordance with the funding policy.

The current funding policy is intended to fully fund the cost of the benefits and to allocate the cost of benefits reasonably and equitably over time while minimizing the volatility of employer contributions. The recommended contribution is expected to remain level as a percent of payroll, except when any current amortization layer is fully amortized and assuming there are no future actuarial gains or losses. Furthermore, the funded ratio is expected to increase as the UAAL is methodically funded by employer contributions.

[1] Changes in UAAL due to actuarial gains or losses and changes in actuarial assumptions or methods for each valuation are amortized over separate 18-year periods, while changes in UAAL due to plan amendments are amortized over separate 10-year periods.

[2] Excludes withdrawn employers.

## Average Recommended Employer Contribution Calculated as of December 31

| Line Description | 2023 Amount ($ in '000s) | 2023 % of Projected Compensation | 2022 Amount ($ in '000s) | 2022 % of Projected Compensation |
|---|---|---|---|---|
| 1. Total normal cost[1] | $314,222 | 27.20% | $296,628 | 27.63% |
| 2. Expected member contributions[28] | 140,130 | 12.13% | 130,764 | 12.18% |
| 3. Employer normal cost: [28] **1 – 2** | $174,092 | 15.07% | $165,864 | 15.45% |
| 4. Actuarial accrued liability | 12,438,710 | | 11,912,229 | |
| 5. Valuation value of assets | 11,323,477 | | 10,861,822 | |
| 6. Unfunded actuarial accrued liability: **4 – 5** | $1,115,233 | | $1,050,407 | |
| 7. Payment on UAAL | 155,696 | 13.48% | 156,364 | 14.56% |
| **8. Average recommended employer contribution: 3 + 7** | **$329,788** | **28.55%** | **$322,227** | **30.01%** |
| 9. Projected compensation | $1,155,130 | | $1,073,887 | |

**Note:** Contributions are assumed to be paid at the middle of the year.

[1] Includes administrative expense load.

## Reconciliation of Average Recommended Employer Contribution Rate

| Line Description | Contribution Rate[1] | Estimated Amount[2] |
|---|---|---|
| 1. Average recommended employer contribution as of December 31, 2022 | 30.01% | $322,227,409 |
| **2. Changes due to:** | | |
| a. Investment return less than expected after asset smoothing | 1.03% | 11,897,835 |
| b. Actual contributions greater than expected under funding policy[3] | (0.33%) | (3,811,928) |
| c. Additional UAAL contributions for San Ramon FD and IHSS | (0.00%) | (29,825) |
| d. Individual salary increases greater than expected | 0.44% | 5,082,570 |
| e. Board action to adjust remaining UAAL amortization periods to six years for layers established as of December 31, 2012 through December 31, 2018 | (1.50%) | (17,326,943) |
| f. Amortizing prior year's UAAL over a larger than expected total payroll | (0.62%) | (7,161,803) |
| g. COLA increases lower than expected for April 1, 2024[4] | (0.05%) | (577,565) |
| h. Change in active member demographics on normal cost[5] | (0.31%) | (3,580,902) |
| i. Change in administrative expense load[6] | 0.02% | 231,026 |
| j. Other net experience gain[7] | (0.14%) | 22,865,011 |
| k. Setting contribution rate equal to normal cost for Cost Group 6[8] | (0.00%) | (27,377) |
| **l. Total change** | **(1.46%)** | **$7,560,099** |
| **3. Average recommended employer contribution as of December 31, 2023: 1 + 2l** | **28.55%** | **$329,787,508** |

[1] These rates **do not** include any employer subvention of member contributions, or member subvention of employer contributions.

[2] Based on projected compensation for each valuation date shown.

[3] The actual employer contributions were greater than expected due to the scheduled 18-month lag in implementing the lower contribution rates calculated in the December 31, 2022 valuation for Fiscal Year 2024-2025, as well as actual covered payroll for 2023 being greater than the projected compensation in the December 31, 2022 valuation.

[4] For tiers with a maximum 3% or 4% COLA, the actual COLA increase on April 1, 2024 is 2.5% for those retirees without a COLA bank.

[5] This is the net impact of: a) reduction in normal cost rate due to the replacement of legacy members by PEPRA members, b) change in entry age and other demographic profiles, and c) the effect of legacy Safety members who for the first time reached 30 years of reported service as of December 31, 2023 and stopped making member basic contributions.

[6] The calculation and the allocation of the administrative expense between employer and member can be found on page 107.

[7] Includes a decrease in contribution rate of 0.12%, or $1.4 million, as a result of two minor technical actuarial refinements as discussed on page 28. Also includes other differences in actual versus expected experience including (but not limited to) mortality, retirement, disability, termination and leave cashout experience. Estimated amount also reflects changes in payroll from prior valuation.

[8] Cost Group 6 was overfunded as of December 31, 2022 and December 31, 2023. We have applied some of the overfunded amount to offset the net increase in liability for this Cost Group during 2023.

## Reconciliation of Average Recommended Member Contribution Rate

| Line Description | Contribution Rate[1] | Estimated Amount[2] |
|---|---|---|
| 1. Average recommended member contribution as of December 31, 2022 | 12.18% | $130,764,381 |
| **2. Changes due to:** | | |
| a. Change in administrative expense load[3] | 0.02% | $231,026 |
| b. Change in active member demographics[4] | (0.01%) | (115,513) |
| c. Other net experience gain[5] | (0.06%) | 9,249,738 |
| **d. Total change** | **(0.05%)** | **$9,365,251** |
| **3. Average recommended member contribution as of December 31, 2023: 1 + 2d** | **12.13%** | **$140,129,632** |

[1] These rates **do not** include any employer subvention of member contributions, or member subvention of employer contributions.
[2] Based on projected compensation for each valuation date shown.
[3] The calculation and the allocation of the administrative expense between employer and member can be found on page 107.
[4] This is the net impact of: a) reduction in normal cost rate due to the replacement of legacy members by PEPRA members, b) change in entry age and other demographic profiles, and c) the effect of legacy Safety members who for the first time reached 30 years of reported service as of December 31, 2023 and stopped making member basic contributions.
[5] Includes a decrease in contribution rate of 0.06%, or $0.7 million, as a result of two minor technical actuarial refinements as discussed on page 28. Estimated amount also reflects changes in payroll from prior valuation.

## Recommended employer contribution rate

### Cost Group 1 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan and Employer | 2023 Basic | 2023 COLA[2] | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier 1 — Non-LAFCO** | | | | | | | | |
| Normal Cost | 13.20% | 3.68% | 16.88% | $2,279,408 | 13.36% | 3.71% | 17.07% | $2,577,746 |
| UAAL | 9.60% | (0.75%) | 8.85% | 1,195,069 | 9.34% | 0.19% | 9.53% | 1,439,129 |
| **Total Contribution** | **22.80%** | **2.93%** | **25.73%** | **$3,474,477** | **22.70%** | **3.90%** | **26.60%** | **$4,016,875** |
| **Tier 1 — LAFCO[3]** | | | | | | | | |
| Normal Cost | 13.20% | 3.68% | 16.88% | $34,060 | 13.36% | 3.71% | 17.07% | $32,863 |
| UAAL | 4.90% | (0.75%) | 4.15% | 8,374 | 3.86% | 0.19% | 4.05% | 7,797 |
| **Total Contribution** | **18.10%** | **2.93%** | **21.03%** | **$42,434** | **17.22%** | **3.90%** | **21.12%** | **$40,660** |
| **Tier 4 (3% COLA) — Non-LAFCO** | | | | | | | | |
| Normal Cost | 9.59% | 3.22% | 12.81% | $1,209,315 | 9.36% | 3.15% | 12.51% | $1,033,490 |
| UAAL | 9.60% | (0.75%) | 8.85% | 835,475 | 9.34% | 0.19% | 9.53% | 787,304 |
| **Total Contribution** | **19.19%** | **2.47%** | **21.66%** | **$2,044,790** | **18.70%** | **3.34%** | **22.04%** | **$1,820,794** |
| **Tier 4 (3% COLA) — LAFCO[3]** | | | | | | | | |
| Normal Cost | 9.59% | 3.22% | 12.81% | $10,046 | 9.36% | 3.15% | 12.51% | $0 |
| UAAL | 4.90% | (0.75%) | 4.15% | 3,255 | 3.86% | 0.19% | 4.05% | 0 |
| **Total Contribution** | **14.49%** | **2.47%** | **16.96%** | **$13,301** | **13.22%** | **3.34%** | **16.56%** | **$0** |
| **Tier 4 (2% COLA)** | | | | | | | | |
| Normal Cost | 9.09% | 2.09% | 11.18% | $0 | 9.09% | 2.09% | 11.18% | $0 |
| UAAL | 9.60% | (0.75%) | 8.85% | 0 | 9.34% | 0.19% | 9.53% | 0 |
| **Total Contribution** | **18.69%** | **1.34%** | **20.03%** | **$0** | **18.43%** | **2.28%** | **20.71%** | **$0** |

[1] The Basic normal cost and UAAL rates shown for each tier include an explicit administrative expense load of 0.52% and 0.13% of payroll, respectively for 2023 and 0.50% and 0.13% of payroll, respectively for 2022.

[2] The COLA rate in the December 31, 2023 valuation has become negative as a result of amortizing the bases established as of December 31, 2012 through December 31, 2018 over six years. While this does not impact the total recommended rate, we are available to discuss various options should CCCERA prefer not to have a negative COLA rate.

[3] LAFCO has made several UAAL prepayments in recent years. Those prepayments have been amortized over 18 years from the date they were made and allocated to provide Basic UAAL rate credits.

## Cost Group 2 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan and Employer | 2023 Basic | 2023 COLA[2] | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier 3 — Non-IHSS** | | | | | | | | |
| Normal Cost | 11.87% | 3.38% | 15.25% | $55,635,754 | 11.96% | 3.40% | 15.36% | $56,875,398 |
| UAAL | 9.60% | (0.75%) | 8.85% | 32,286,978 | 9.34% | 0.19% | 9.53% | 35,287,926 |
| **Total Contribution** | **21.47%** | **2.63%** | **24.10%** | **$87,922,732** | **21.30%** | **3.59%** | **24.89%** | **$92,163,324** |
| **Tier 3 — IHSS[3]** | | | | | | | | |
| Normal Cost | 11.87% | 3.38% | 15.25% | $76,744 | 11.96% | 3.40% | 15.36% | $84,159 |
| UAAL | 9.12% | (0.91%) | 8.21% | 41,316 | 9.34% | 0.19% | 9.53% | 52,216 |
| **Total Contribution** | **20.99%** | **2.47%** | **23.46%** | **$118,060** | **21.30%** | **3.59%** | **24.89%** | **$136,375** |
| **Tier 5 (3%/4% COLA) — Non-IHSS** | | | | | | | | |
| Normal Cost | 8.48% | 2.81% | 11.29% | $7,205,564 | 8.58% | 2.84% | 11.42% | $6,916,833 |
| UAAL | 9.60% | (0.75%) | 8.85% | 5,648,294 | 9.34% | 0.19% | 9.53% | 5,772,103 |
| **Total Contribution** | **18.08%** | **2.06%** | **20.14%** | **$12,853,858** | **17.92%** | **3.03%** | **20.95%** | **$12,688,936** |
| **Tier 5 (3%/4% COLA) — IHSS[3]** | | | | | | | | |
| Normal Cost | 8.48% | 2.81% | 11.29% | $8,841 | 8.58% | 2.84% | 11.42% | $8,490 |
| UAAL | 9.12% | (0.91%) | 8.21% | 6,429 | 9.34% | 0.19% | 9.53% | 7,085 |
| **Total Contribution** | **17.60%** | **1.90%** | **19.50%** | **$15,270** | **17.92%** | **3.03%** | **20.95%** | **$15,575** |
| **Tier 5 (2% COLA) — Non-IHSS** | | | | | | | | |
| Normal Cost | 8.48% | 1.90% | 10.38% | $42,858,226 | 8.47% | 1.90% | 10.37% | $36,320,856 |
| UAAL | 9.60% | (0.75%) | 8.85% | 36,540,973 | 9.34% | 0.19% | 9.53% | 33,378,761 |
| **Total Contribution** | **18.08%** | **1.15%** | **19.23%** | **$79,399,199** | **17.81%** | **2.09%** | **19.90%** | **$69,699,617** |

1 The Basic normal cost and UAAL rates shown for each tier include an explicit administrative expense load of 0.52% and 0.13% of payroll, respectively for 2023 and 0.50% and 0.13% of payroll, respectively for 2022.
2 The COLA rate in the December 31, 2023 valuation has become negative as a result of amortizing the bases established as of December 31, 2012 through December 31, 2018 over six years. While this does not impact the total recommended rate, we are available to discuss various options should CCCERA prefer not to have a negative COLA rate.
3 IHSS made UAAL prepayments in 2023. Those prepayments have been amortized over 18 years from December 31, 2023 and allocated to provide Basic and UAAL rate credits.

## Cost Group 2 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan and Employer | 2023 Basic | 2023 COLA[2] | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier 5 (2% COLA) — IHSS[3]** | | | | | | | | |
| Normal Cost | 8.48% | 1.90% | 10.38% | $54,373 | 8.47% | 1.90% | 10.37% | $44,893 |
| UAAL | 9.12% | (0.91%) | 8.21% | 43,006 | 9.34% | 0.19% | 9.53% | 41,257 |
| **Total Contribution** | **17.60%** | **0.99%** | **18.59%** | **$97,379** | **17.81%** | **2.09%** | **19.90%** | **$86,150** |

## Cost Group 3 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier 1** | | | | | | | | |
| Normal Cost | 13.49% | 3.88% | 17.37% | $4,609,936 | 13.57% | 3.88% | 17.45% | $4,713,467 |
| UAAL | 1.17% | 1.43% | 2.60% | 690,031 | 0.40% | 0.66% | 1.06% | 286,319 |
| **Total Contribution** | **14.66%** | **5.31%** | **19.97%** | **$5,299,967** | **13.97%** | **4.54%** | **18.51%** | **$4,999,786** |
| **Tier 4 (3% COLA)** | | | | | | | | |
| Normal Cost | 8.54% | 2.98% | 11.52% | $1,797,876 | 8.60% | 3.00% | 11.60% | $1,569,590 |
| UAAL | 1.17% | 1.43% | 2.60% | 405,771 | 0.40% | 0.66% | 1.06% | 143,428 |
| **Total Contribution** | **9.71%** | **4.41%** | **14.12%** | **$2,203,647** | **9.00%** | **3.66%** | **12.66%** | **$1,713,018** |

[1] The Basic normal cost and UAAL rates shown for each tier include an explicit administrative expense load of 0.52% and 0.13% of payroll, respectively for 2023 and 0.50% and 0.13% of payroll, respectively for 2022.

[2] The COLA rate in the December 31, 2023 valuation has become negative as a result of amortizing the bases established as of December 31, 2012 through December 31, 2018 over six years. While this does not impact the total recommended rate, we are available to discuss various options should CCCERA prefer not to have a negative COLA rate.

[3] IHSS made UAAL prepayments in 2023. Those prepayments have been amortized over 18 years from December 31, 2023 and allocated to provide Basic and UAAL rate credits.

## Cost Group 4 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier 1** | | | | | | | | |
| Normal Cost | 12.75% | 3.71% | 16.46% | $553,410 | 13.41% | 3.80% | 17.21% | $626,043 |
| UAAL | 9.08% | 4.11% | 13.19% | 443,468 | 8.98% | 4.41% | 13.39% | 487,084 |
| **Total Contribution** | **21.83%** | **7.82%** | **29.65%** | **$996,878** | **22.39%** | **8.21%** | **30.60%** | **$1,113,127** |
| **Tier 4 (3% COLA)** | | | | | | | | |
| Normal Cost | 9.17% | 3.07% | 12.24% | $428,735 | 9.17% | 3.10% | 12.27% | $394,422 |
| UAAL | 9.08% | 4.11% | 13.19% | 462,010 | 8.98% | 4.41% | 13.39% | 430,425 |
| **Total Contribution** | **18.25%** | **7.18%** | **25.43%** | **$890,745** | **18.15%** | **7.51%** | **25.66%** | **$824,847** |

## Cost Group 5 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier 1** | | | | | | | | |
| Normal Cost | 15.70% | 4.11% | 19.81% | $855,131 | 14.97% | 3.98% | 18.95% | $738,478 |
| UAAL | 12.83% | 11.08% | 23.91% | 1,032,114 | 12.80% | 10.30% | 23.10% | 900,203 |
| **Total Contribution** | **28.53%** | **15.19%** | **43.72%** | **$1,887,245** | **27.77%** | **14.28%** | **42.05%** | **$1,638,681** |
| **Tier 4 (3% COLA)** | | | | | | | | |
| Normal Cost | 11.31% | 3.83% | 15.14% | $16,843 | 11.28% | 3.85% | 15.13% | $15,980 |
| UAAL | 12.83% | 11.08% | 23.91% | 26,599 | 12.80% | 10.30% | 23.10% | 24,398 |
| **Total Contribution** | **24.14%** | **14.91%** | **39.05%** | **$43,442** | **24.08%** | **14.15%** | **38.23%** | **$40,378** |
| **Tier 4 (2% COLA)** | | | | | | | | |
| Normal Cost | 10.08% | 2.31% | 12.39% | $593,013 | 10.16% | 2.33% | 12.49% | $491,623 |
| UAAL | 12.83% | 11.08% | 23.91% | 1,144,386 | 12.80% | 10.30% | 23.10% | 909,247 |
| **Total Contribution** | **22.91%** | **13.39%** | **36.30%** | **$1,737,399** | **22.96%** | **12.63%** | **35.59%** | **$1,400,870** |

[1] The Basic normal cost and UAAL rates shown for each tier include an explicit administrative expense load of 0.52% and 0.13% of payroll, respectively for 2023 and 0.50% and 0.13% of payroll, respectively for 2022.

## Cost Group 6 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier 1** | | | | | | | | |
| Normal Cost | 12.65% | 3.79% | 16.44% | $109,461 | 12.70% | 3.80% | 16.50% | $97,339 |
| UAAL | 0.13% | 0.00% | 0.13% | 866 | 0.13% | 0.00% | 0.13% | 767 |
| **Total Contribution** | **12.78%** | **3.79%** | **16.57%** | **$110,327** | **12.83%** | **3.80%** | **16.63%** | **$98,106** |
| **Tier 4 (3% COLA)** | | | | | | | | |
| Normal Cost | 10.18% | 3.41% | 13.59% | $91,896 | 11.01% | 3.68% | 14.69% | $76,376 |
| UAAL | 0.13% | 0.00% | 0.13% | 879 | 0.13% | 0.00% | 0.13% | 676 |
| **Total Contribution** | **10.31%** | **3.41%** | **13.72%** | **$92,775** | **11.14%** | **3.68%** | **14.82%** | **$77,052** |

## Cost Group 7 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier A** | | | | | | | | |
| Normal Cost | 23.09% | 7.48% | 30.57% | $12,986,468 | 23.27% | 7.55% | 30.82% | $14,040,055 |
| UAAL | 9.85% | 20.11% | 29.96% | 12,727,334 | 13.90% | 19.60% | 33.50% | 15,260,929 |
| **Total Contribution** | **32.94%** | **27.59%** | **60.53%** | **$25,713,802** | **37.17%** | **27.15%** | **64.32%** | **$29,300,984** |
| **Tier D** | | | | | | | | |
| Normal Cost | 14.61% | 6.05% | 20.66% | $754,551 | 14.55% | 6.02% | 20.57% | $770,517 |
| UAAL | 9.85% | 20.11% | 29.96% | 1,094,209 | 13.90% | 19.60% | 33.50% | 1,254,853 |
| **Total Contribution** | **24.46%** | **26.16%** | **50.62%** | **$1,848,760** | **28.45%** | **25.62%** | **54.07%** | **$2,025,370** |

[1] The Basic normal cost and UAAL rates shown for each tier include an explicit administrative expense load of 0.52% and 0.13% of payroll, respectively for 2023 and 0.50% and 0.13% of payroll, respectively for 2022.

## Cost Group 8 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier A** | | | | | | | | |
| Normal Cost | 24.09% | 7.78% | 31.87% | $12,747,115 | 23.60% | 7.78% | 31.38% | $11,876,441 |
| UAAL | 7.34% | 27.94% | 35.28% | 14,111,020 | 12.25% | 28.74% | 40.99% | 15,513,553 |
| **Total Contribution** | **31.43%** | **35.72%** | **67.15%** | **$26,858,135** | **35.85%** | **36.52%** | **72.37%** | **$27,389,994** |
| **Tier D** | | | | | | | | |
| Normal Cost | 12.87% | 5.42% | 18.29% | $442,457 | 12.81% | 5.39% | 18.20% | $416,061 |
| UAAL | 7.34% | 27.94% | 35.28% | 853,465 | 12.25% | 28.74% | 40.99% | 937,053 |
| **Total Contribution** | **20.21%** | **33.36%** | **53.57%** | **$1,295,922** | **25.06%** | **34.13%** | **59.19%** | **$1,353,114** |
| **Tier E** | | | | | | | | |
| Normal Cost | 12.91% | 3.61% | 16.52% | $4,670,716 | 13.16% | 3.68% | 16.84% | $3,445,302 |
| UAAL | 7.34% | 27.94% | 35.28% | 9,974,750 | 12.25% | 28.74% | 40.99% | 8,386,160 |
| **Total Contribution** | **20.25%** | **31.55%** | **51.80%** | **$14,645,466** | **25.41%** | **32.42%** | **57.83%** | **$11,831,462** |

[1] The Basic normal cost and UAAL rates shown for each tier include an explicit administrative expense load of 0.52% and 0.13% of payroll, respectively for 2023 and 0.50% and 0.13% of payroll, respectively for 2022.

## Cost Group 9 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier C** | | | | | | | | |
| Normal Cost | 21.74% | 4.71% | 26.45% | $4,391,285 | 21.91% | 4.74% | 26.65% | $4,381,568 |
| UAAL | 9.85% | 20.11% | 29.96% | 4,974,022 | 13.90% | 19.60% | 33.50% | 5,507,787 |
| **Total Contribution** | **31.59%** | **24.82%** | **56.41%** | **$9,365,307** | **35.81%** | **24.34%** | **60.15%** | **$9,889,355** |
| **Tier E** | | | | | | | | |
| Normal Cost | 13.73% | 3.80% | 17.53% | $10,275,492 | 13.74% | 3.82% | 17.56% | $8,574,681 |
| UAAL | 9.85% | 20.11% | 29.96% | 17,561,537 | 13.90% | 19.60% | 33.50% | 16,358,303 |
| **Total Contribution** | **23.58%** | **23.91%** | **47.49%** | **$27,837,029** | **27.64%** | **23.42%** | **51.06%** | **$24,932,984** |

## Cost Group 10 — Recommended Employer Contribution Rates[54] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier A** | | | | | | | | |
| Normal Cost | 21.91% | 7.26% | 29.17% | $1,954,502 | 22.35% | 7.36% | 29.71% | $1,997,877 |
| UAAL | 15.96% | 48.81% | 64.77% | 4,339,839 | 19.73% | 41.86% | 61.59% | 4,141,679 |
| **Total Contribution** | **37.87%** | **56.07%** | **93.94%** | **$6,294,341** | **42.08%** | **49.22%** | **91.30%** | **$6,139,556** |
| **Tier D** | | | | | | | | |
| Normal Cost | 13.25% | 5.59% | 18.84% | $450,125 | 13.52% | 5.70% | 19.22% | $438,258 |
| UAAL | 15.96% | 48.81% | 64.77% | 1,547,484 | 19.73% | 41.86% | 61.59% | 1,404,385 |
| **Total Contribution** | **29.21%** | **54.40%** | **83.61%** | **$1,997,609** | **33.25%** | **47.56%** | **80.81%** | **$1,842,643** |

[1] The Basic normal cost and UAAL rates shown for each tier include an explicit administrative expense load of 0.52% and 0.13% of payroll, respectively for 2023 and 0.50% and 0.13% of payroll, respectively for 2022.

## Cost Group 11 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier A** | | | | | | | | |
| Normal Cost | 23.98% | 7.90% | 31.88% | $4,272,273 | 24.79% | 8.46% | 33.25% | $5,104,772 |
| UAAL | 10.45% | 13.57% | 24.02% | 3,218,946 | 12.34% | 11.81% | 24.15% | 3,707,677 |
| **Total Contribution** | **34.43%** | **21.47%** | **55.90%** | **$7,491,219** | **37.13%** | **20.27%** | **57.40%** | **$8,812,449** |
| **Tier D** | | | | | | | | |
| Normal Cost | 11.61% | 4.91% | 16.52% | $2,016,779 | 11.81% | 4.98% | 16.79% | $1,656,386 |
| UAAL | 10.45% | 13.57% | 24.02% | 2,932,388 | 12.34% | 11.81% | 24.15% | 2,382,473 |
| **Total Contribution** | **22.06%** | **18.48%** | **40.54%** | **$4,949,167** | **24.15%** | **16.79%** | **40.94%** | **$4,038,859** |

## Cost Group 12 — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component by Plan | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **Tier A** | | | | | | | | |
| Normal Cost | 19.31% | 6.95% | 26.26% | $410,211 | 19.33% | 6.99% | 26.32% | $370,283 |
| UAAL[2] | 27.21% | 25.13% | 52.34% | 817,609 | 37.21% | 28.96% | 66.17% | 930,914 |
| **Total Contribution** | **46.52%** | **32.08%** | **78.60%** | **$1,227,820** | **56.54%** | **35.95%** | **92.49%** | **$1,301,197** |
| **Tier D** | | | | | | | | |
| Normal Cost | 14.88% | 6.05% | 20.93% | $291,085 | 12.99% | 5.49% | 18.48% | $173,616 |
| UAAL[2] | 27.21% | 25.13% | 52.34% | 727,921 | 37.21% | 28.96% | 66.17% | 621,655 |
| **Total Contribution** | **42.09%** | **31.18%** | **73.27%** | **$1,019,006** | **50.20%** | **34.45%** | **84.65%** | **$795,271** |

[1] The Basic normal cost and UAAL rates shown for each tier include an explicit administrative expense load of 0.52% and 0.13% of payroll, respectively for 2023 and 0.50% and 0.13% of payroll, respectively for 2022.

[2] The reduction in the UAAL rate in the December 31, 2023 valuation is mainly due to amortizing the prior years' UAAL over a larger than expected payroll. The projected payroll for Cost Group 12 increased by about 25% from last year.

## Total Plan (Average) — Recommended Employer Contribution Rates[1] Calculated as of December 31

| Component | 2023 Basic | 2023 COLA | 2023 Total | 2023 Estimated Amount | 2022 Basic | 2022 COLA | 2022 Total | 2022 Estimated Amount |
|---|---|---|---|---|---|---|---|---|
| **All Cost Groups Combined** | | | | | | | | |
| Normal Cost | 11.78% | 3.29% | 15.07% | $174,091,691 | 12.05% | 3.40% | 15.45% | $165,863,863 |
| UAAL | 9.30% | 4.18% | 13.48% | 155,695,817 | 9.88% | 4.68% | 14.56% | 156,363,546 |
| **Total Contribution** | **21.08%** | **7.47%** | **28.55%** | **$329,787,508** | **21.93%** | **8.08%** | **30.01%** | **$322,227,409** |

[1] The Basic normal cost and UAAL rates shown for each tier include an explicit administrative expense load of 0.52% and 0.13% of payroll, respectively for 2023 and 0.50% and 0.13% of payroll, respectively for 2022.

The projected compensation for the 2024 calendar year that is used to estimate the annual dollar amount shown on the prior pages as of December 31, 2023 are as follows:

| Cost Group and Plan | Projected Compensation |
|---|---|
| **Cost Group 1** | |
| Tier 1 — Non-LAFCO | $13,503,599 |
| Tier 1 — LAFCO | 201,775 |
| Tier 4 (3% COLA) — Non-LAFCO | 9,440,395 |
| Tier 4 (3% COLA) — LAFCO | 78,427 |
| Tier 4 (2% COLA) | 0 |
| **Cost Group 2** | |
| Tier 3 — Non-IHSS | $364,824,614 |
| Tier 3 — IHSS | 503,237 |
| Tier 5 (3%/4% COLA) — Non-IHSS | 63,822,533 |
| Tier 5 (3%/4% COLA) — IHSS | 78,308 |
| Tier 5 (2% COLA) — Non-IHSS | 412,892,349 |
| Tier 5 (2% COLA) — IHSS | 523,826 |
| **Cost Group 3** | |
| Tier 1 | $26,539,643 |
| Tier 4 (3% COLA) | 15,606,563 |
| **Cost Group 4** | |
| Tier 1 | $3,362,150 |
| Tier 4 (3% COLA) | 3,502,733 |
| **Cost Group 5** | |
| Tier 1 | $4,316,664 |
| Tier 4 (3% COLA) | 111,248 |
| Tier 4 (2% COLA) | 4,786,225 |

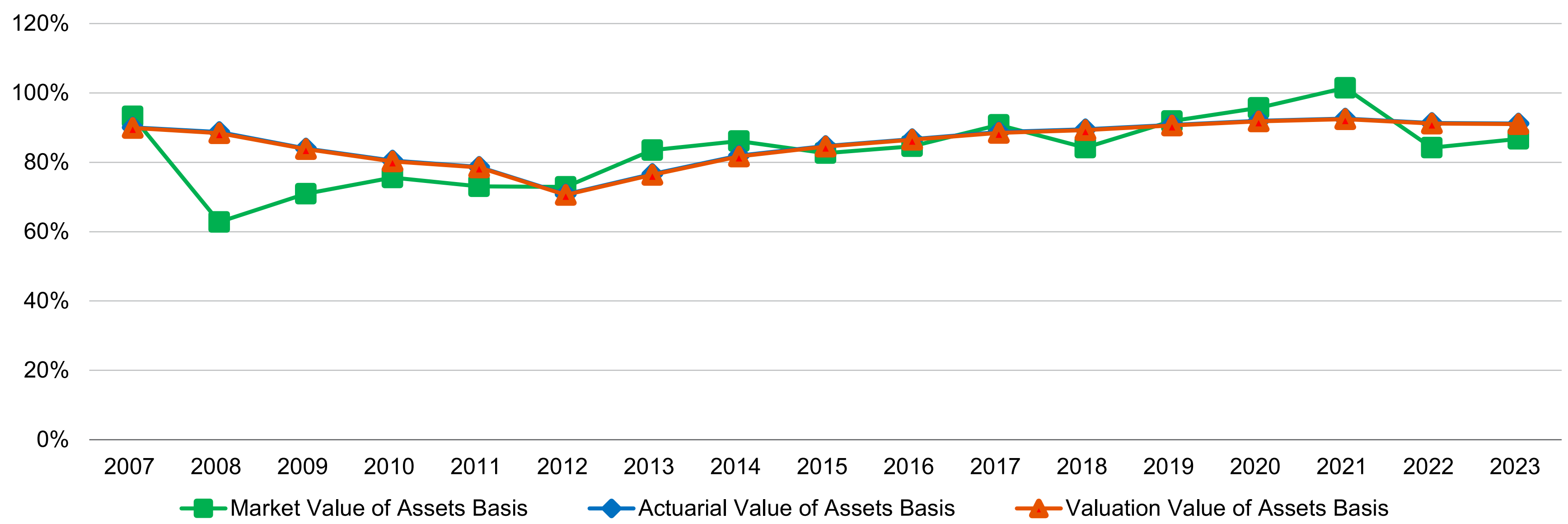
| Cost Group and Plan | Projected Compensation |
|---|---|
| **Cost Group 6** | |
| Tier 1 | $665,822 |
| Tier 4 (3% COLA) | 676,204 |
| **Cost Group 7** | |
| Tier A | $42,481,087 |
| Tier D | 3,652,232 |
| **Cost Group 8** | |
| Tier A | $39,997,222 |
| Tier D | 2,419,119 |
| Tier E | 28,273,100 |
| **Cost Group 9** | |
| Tier C | $16,602,211 |
| Tier E | 58,616,611 |
| **Cost Group 10** | |
| Tier A | $6,700,385 |
| Tier D | 2,389,199 |
| **Cost Group 11** | |
| Tier A | $13,401,108 |
| Tier D | 12,208,108 |
| **Cost Group 12** | |
| Tier A | $1,562,112 |
| Tier D | 1,390,755 |
| **Total Plan** | **$1,155,129,564** |

## G. Funded status

A commonly reported piece of information regarding the Plan's financial status is the funded ratio. These ratios compare the market, actuarial and valuation value of assets to the actuarial accrued liability of the Plan. Higher ratios indicate a relatively well-funded plan while lower ratios may indicate recent changes to actuarial assumptions, funding of the plan below actuarial requirements, poor asset performance, or a variety of other causes.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. As the chart below shows, the measures are different depending on whether the market, actuarial, or valuation value of assets is used.

### Funded Ratio as of December 31




**Note:** The actuarial value of assets and the valuation value of assets have been substantially the same over the time period shown, differing by no more than $20 million.

### Schedule of Funding Progress

| As of December 31 | Valuation Value of Assets[1] (a) | Actuarial Accrued Liability (AAL)[2] (b) | Unfunded AAL (UAAL) (b) − (a) | Funded Ratio (a) ÷ (b) | Projected Compensation (c) | UAAL as a % of Projected Compensation [(b) − (a)] ÷ (c) |
|---|---|---|---|---|---|---|
| 2014 | $6,557,496,101 | $8,027,438,213 | $1,469,942,112 | 81.7% | $697,831,837 | 210.6% |
| 2015 | 7,136,801,380 | 8,448,624,096 | 1,311,822,716 | 84.5% | 746,352,663 | 175.8% |
| 2016 | 7,606,997,530 | 8,794,434,139 | 1,187,436,609 | 86.5% | 784,412,260 | 151.4% |
| 2017 | 8,179,891,191 | 9,239,246,920 | 1,059,355,729 | 88.5% | 860,624,613 | 123.1% |
| 2018 | 8,650,178,226 | 9,682,143,750 | 1,031,965,524 | 89.3% | 896,390,768 | 115.1% |
| 2019 | 9,128,668,718 | 10,075,722,222 | 947,053,504 | 90.6% | 937,531,262 | 101.0% |
| 2020 | 9,662,282,926 | 10,521,628,175 | 859,345,249 | 91.8% | 990,041,699 | 86.8% |
| 2021 | 10,434,412,288 | 11,288,973,487 | 854,561,199 | 92.4% | 1,015,755,387 | 84.1% |
| 2022 | 10,861,822,062 | 11,912,228,880 | 1,050,406,818 | 91.2% | 1,073,886,785 | 97.8% |
| 2023 | 11,323,476,654 | 12,438,710,062 | 1,115,233,408 | 91.0% | 1,155,129,564 | 96.5% |

[1] Excludes assets for non-valuation reserves.
[2] Excludes liabilities for non-valuation reserves.

## H. Actuarial balance sheet

An overview of the Plan's funding is given by an actuarial balance sheet. In this approach, first the amount and timing of all future payments that will be made by the Plan for current members is determined. Then these payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value, referred to as the "liability" of the Plan.

Second, this liability is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments for the unfunded actuarial accrued liability.

### Actuarial Balance Sheet as of December 31, 2023

| Line Description | Basic | COLA | Total |
|---|---|---|---|
| **Liabilities** | | | |
| Present value of benefits for retired members and beneficiaries | $4,426,625,319 | $3,673,911,742 | $8,100,537,061 |
| Present value of benefits for inactive members[1] | 279,691,995 | 89,755,367 | 369,447,362 |
| Present value of benefits for active members | 4,653,689,066 | 1,605,071,647 | 6,258,760,713 |
| **Total liabilities** | **$9,360,006,380** | **$5,368,738,756** | **$14,728,745,136** |
| **Current and Future Assets** | | | |
| Total valuation value of assets | $6,961,328,761 | $4,362,147,893 | $11,323,476,654 |
| Present value of future contributions by members | 853,732,396 | 296,206,960 | 1,149,939,356 |
| Present value of future employer contributions for: | | | |
| • Entry age normal cost | 875,045,385 | 265,050,333 | 1,140,095,718 |
| • Unfunded actuarial accrued liability | 669,899,838 | 445,333,570 | 1,115,233,408 |
| **Total current and future assets** | **$9,360,006,380** | **$5,368,738,756** | **$14,728,745,136** |

[1] Includes inactive members with member contributions on deposit.

## I. Risk

Because the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan.

This report does not contain a detailed analysis of the potential range of future measurements, but does include a concise discussion of some of the primary risks that may affect the Plan's future financial condition. We recommend a more detailed assessment of the risks to provide the Board with a better understanding of the risks inherent in the Plan that can inform both financial preparation and future decision making. This assessment would enable us to work with the Board to highlight and illustrate particular risks or potential future outcomes they may be interested in discussing and could include scenario testing, sensitivity testing, stress testing and stochastic modeling.

This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the Plan's financial health, as well as a discussion of historical trends and maturity measures:

### Risk assessments

- **Asset/Liability Mismatch Risk** (the potential that future plan experience does not affect asset and liability values in the same way, causing them to diverge)

  The most significant asset/liability mismatch risk to the Plan is investment risk, as discussed below. In fact, investment risk has the potential to impact asset/liability mismatch in two ways. The first is evident in annual valuations; when asset values deviate from assumptions they are typically independent from liability changes. The second can be caused when systemic asset deviations from assumptions may signal the need for an assumption change, which causes liability values and contribution rates to move in the opposite direction from any change in the expected experience of asset growth rates.

  Asset/liability mismatch can also be caused by demographic assumption risk such as longevity, which affects liabilities but has no impact on asset levels. This risk is also discussed below.

- **Investment Risk** (the risk that investment returns will be different than expected)

  The investment return assumption is a long-term, static assumption for valuation purposes even though in reality market experience can be quite volatile in any given year. That volatility can cause significant changes in the financial condition of the Plan, affecting both funded status and contribution rates. The inherent year-to-year volatility is reduced by smoothing through the valuation value of assets, however investment experience can still have a sizable impact. As discussed in *Section 2, Subsection J, Volatility Ratios*, on page 51, a 1% asset gain or loss (relative to the assumed investment return) translates to about 9.3% of one-year's payroll. Since actuarial gains and losses are amortized over 18 years, there would be a 0.7% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The year-by-year market value rate of return over the last 10 years has ranged from a low of -11.25% to a high of 14.39%.

- **Longevity Risk** (the risk that mortality experience will be different than expected)

  The actuarial valuation includes current life expectancy assumptions and an expectation of future improvement in life expectancy, which are significant assumptions given the relatively long duration of liabilities for pension plans. Emerging plan experience that does not match these expectations will result in increases or decreases in the actuarially determined contribution over time. This risk can be reduced by using tables appropriate for the Plan (public experience tables) that are weighted by benefit levels, and by using generational mortality projections. The Board has adopted mortality tables based on this methodology.

- **Other Risks**

  In addition to longevity, the valuation includes a variety of other assumptions that are unlikely to match future experience exactly. One example is projected salary scales over time. As salary is central to the determination of benefits paid in retirement, deviations from the projected salary scales could have a material impact on the benefits anticipated for each member. Examples of other demographic assumptions include retirement, termination and disability assumptions, and will likely vary in significance for different groups (for example, disability assumptions are typically more significant for Safety groups).

Some plans also carry significant contribution risk, defined as the potential for actual future contributions deviating from expected future contributions. However, the employers have a proven track-record of making the actuarially determined contributions based on the Board's Actuarial Funding Policy, so contribution risk is minimal.

## Evaluation of historical trends

Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience. Over the past ten years:

- The funded percentage on the valuation value of assets basis has increased from 81.7% to 91.0%. This is primarily due to contributions made to amortize the UAAL (i.e., amortizing each layer of UAAL over 18 years as a level percentage of pay). For a more detailed history see *Section 2, Subsection G, Funded status* starting on page 44.
- The average geometric investment return on the valuation value of assets over the last 10 years was 7.31%. This includes a high of 11.40% and a low of 5.25%. The average over the last five years is 6.33%. For more details see *Historical investment returns* in *Section 2, Subsection B,* on page 24.
- Beyond investment experience, the primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. In particular, the assumption changes in 2015 changed the discount rate from 7.25% to 7.00% (as well as

various other changes) adding $114 million in unfunded liability. The assumption changes in 2021 changed the discount rate from 7.00% to 6.75% (as well as various other changes) adding $235 million in unfunded liability. For more details on unfunded liability changes see *Section 3, Exhibit H, Table of amortization bases* starting on page 83.

- The plan's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in *Section 3, Exhibit J, Projection of UAAL balances and payments* starting on page 105.

## Maturity measures

In the last 10 years the ratio of members in pay status to active participants has increased from 0.97 to 1.04. An increased ratio indicates that the plan has grown in maturity over time. This is to be expected, but is also informative for understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member information* on page 17.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities. Over the past year, benefits and expenses paid were $113 million more than contributions received. Plans with high levels of negative cash flows may have a need for a larger allocation to income generating assets, which can create a drag on investment return. However, the Plan currently has a low level of negative cash flow and is relatively well funded (at a 91.0% funded ratio). For more details on historical cash flows see *Section 2, Subsection B, Financial information* on page 21.

A further discussion of plan maturity measures and how they relate to changes in assets and liabilities is included in *Section 2, Subsection J, Volatility ratios* on page 51.

## Low-Default-Risk Obligation Measure (LDROM)

In December 2021, the Actuarial Standards Board issued a revision of Actuarial Standard of Practice No. 4 (ASOP 4) *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*. One of the revisions to ASOP 4 requires the disclosure of a Low-Default-Risk Obligation Measure (LDROM) when performing a funding valuation. The LDROM presented in this report is calculated using the same methodology and assumptions used to determine the AAL used for funding, except for the discount rate. The LDROM is required to be calculated using "a discount rate…derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future."

The LDROM is a calculation assuming a plan's assets are invested in an all-bond portfolio, generally lowering expected long-term investment returns. The discount rate selected and used for this purpose is the Bond Buyer General Obligation 20-year Municipal Bond Index Rate, published at the end of each week. The last published rate in December of the measurement period, by The Bond Buyer, is 3.26% for use effective December 31, 2023. This is the rate used to determine the discount rate for valuing reported public pension plan liabilities in accordance with Governmental Accounting Standards when plan assets are projected to be insufficient to make projected benefit payments, and the 20-year period reasonably approximates the duration of plan liabilities. The LDROM is not used to determine a plan’s funded status or actuarially determined contribution rates. The plan’s expected return on assets, currently 6.75%, is used for these calculations.

As of December 31, 2023, the LDROM for the Plan is $20.3 billion. The difference between the Plan’s AAL of $12.4 billion and the LDROM can be thought of as the increase in the AAL if the entire portfolio were invested in low-default-risk securities. Alternatively, this difference could also be viewed as representing the expected savings from investing in the Plan’s diversified portfolio compared to investing only in low-default-risk securities.

ASOP 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of member benefits. In general, if plan assets were invested exclusively in low-default-risk securities, the funded status would be lower and the actuarially determined contribution would be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce investment volatility and the volatility of employer contributions, it also may be more likely to result in higher employer contributions or lower benefits.

## J. Volatility ratios

Retirement plans are subject to volatility in the level of required contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total projected compensation, provides an indication of the potential contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measurement since it is based on the current level of assets.

The current AVR is about 9.3. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 9.3% of one-year's payroll. Since actuarial gains and losses are amortized over 18 years, there would be a 0.7% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the actuarial accrued liability divided by total projected compensation, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the actuarial accrued liability due to actual experience or to changes in actuarial assumptions. The current total Plan LVR is about 10.7 but is 8.3 for General compared to 20.6 for Safety. This means, for example, that assumption changes will have a greater impact on employer contribution rates for Safety than for General. The total Plan LVR is about 15% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long term.

## Volatility Ratios

*Asset Volatility Ratio (AVR) versus Liability Volatility Ratio (LVR)*

| As of December 31 | AVR General | AVR Safety | AVR Total | LVR General | LVR Safety | LVR Total |
|---|---|---|---|---|---|---|
| 2014 | 7.5 | 19.7 | 9.9 | 8.6 | 23.5 | 11.5 |
| 2015 | 7.1 | 18.7 | 9.3 | 8.4 | 23.3 | 11.3 |
| 2016 | 7.2 | 19.0 | 9.5 | 8.3 | 23.1 | 11.1 |
| 2017 | 7.4 | 19.6 | 9.7 | 8.0 | 22.2 | 10.7 |
| 2018 | 6.9 | 18.0 | 9.0 | 8.1 | 21.8 | 10.7 |
| 2019 | 7.5 | 19.4 | 9.8 | 8.1 | 21.5 | 10.7 |
| 2020 | 7.8 | 19.9 | 10.1 | 8.1 | 21.1 | 10.6 |
| 2021 | 8.7 | 21.6 | 11.2 | 8.4 | 21.9 | 11.1 |
| 2022 | 7.3 | 17.7 | 9.3 | 8.5 | 21.5 | 11.0 |
| 2023 | 7.3 | 17.5 | 9.3 | 8.3 | 20.6 | 10.7 |

# Section 3: Supplemental Information

## Exhibit A: Plan demographics

### Total Plan — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 10,349 | 10,082 | 2.6% |
| • Average age | 46.1 | 46.1 | 0.0 |
| • Average years of service | 9.9 | 10.1 | (0.2) |
| • Total projected compensation[1] | $1,155,129,563 | $1,073,886,785 | 7.6% |
| • Average projected compensation | $111,618 | $106,515 | 4.8% |
| • Account balances | $1,441,357,620 | $1,366,675,181 | 5.5% |
| • Total active vested members | 6,751 | 6,661 | 1.4% |
| **Inactive members[2]** | | | |
| • Number | 4,109 | 3,974 | 3.4% |
| • Average age | 46.5 | 46.5 | 0.0 |
| **Retired members[2]** | | | |
| • Number | 8,407 | 8,197 | 2.6% |
| • Average age | 71.3 | 71.1 | 0.2 |
| • Average monthly benefit | $4,720 | $4,584 | 3.0% |
| **Disabled members[2]** | | | |
| • Number[3] | 872 | 874 | (0.2%) |
| • Average age | 68.3 | 68.0 | 0.3 |
| • Average monthly benefit | $5,846 | $5,645 | 3.6% |
| **Beneficiaries[2]** | | | |
| • Number | 1,526 | 1,490 | 2.4% |
| • Average age | 73.1 | 72.8 | 0.3 |
| • Average monthly benefit | $3,266 | $3,124 | 4.5% |

[1] Calculated by increasing actual calendar year compensation earnable (or pensionable compensation for PEPRA tiers) by the assumed salary scale.
[2] Includes members from withdrawn employers.
[3] For 2023, includes 733 members receiving a service-connected disability and 139 members receiving a non-service-connected disability.

## General Tier 1 (Non-Enhanced and Enhanced) — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 325 | 357 | (9.0%) |
| • Average age | 51.8 | 51.8 | 0.0 |
| • Average years of service | 20.0 | 19.8 | 0.2 |
| • Total projected compensation[1] | $48,589,653 | $50,429,409 | (3.6%) |
| • Average projected compensation | $149,507 | $141,259 | 5.8% |
| • Account balances | $74,501,950 | $76,334,921 | (2.4%) |
| • Total active vested members | 324 | 356 | (9.0%) |
| **Inactive members[2]** | | | |
| • Number | 181 | 189 | (4.2%) |
| • Average age | 53.8 | 53.2 | 0.6 |
| **Retired members[2]** | | | |
| • Number | 2,102 | 2,157 | (2.5%) |
| • Average age | 76.3 | 76.1 | 0.2 |
| • Average monthly benefit | $5,186 | $4,999 | 3.7% |
| **Disabled members[2]** | | | |
| • Number[3] | 214 | 217 | (1.4%) |
| • Average age | 75.8 | 75.0 | 0.8 |
| • Average monthly benefit | $3,586 | $3,450 | 3.9% |
| **Beneficiaries[2]** | | | |
| • Number | 610 | 621 | (1.8%) |
| • Average age | 78.1 | 77.9 | 0.2 |
| • Average monthly benefit | $3,064 | $2,931 | 4.5% |

[1] Calculated by increasing actual calendar year compensation earnable by the assumed salary scale.
[2] Includes members from withdrawn employers.
[3] For 2023, includes 160 members receiving a service-connected disability and 54 members receiving a non-service-connected disability.

## General Tier 2 — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 0 | 0 | N/A |
| • Average age | N/A | N/A | N/A |
| • Average years of service | N/A | N/A | N/A |
| • Total projected compensation[1] | N/A | N/A | N/A |
| • Average projected compensation | N/A | N/A | N/A |
| • Account balances | N/A | N/A | N/A |
| • Total active vested members | N/A | N/A | N/A |
| **Inactive members[2]** | | | |
| • Number | 110 | 130 | (15.4%) |
| • Average age | 61.2 | 61.0 | 0.2 |
| **Retired members[2]** | | | |
| • Number | 387 | 393 | (1.5%) |
| • Average age | 77.2 | 77.0 | 0.2 |
| • Average monthly benefit | $960 | $949 | 1.2% |
| **Disabled members[2]** | | | |
| • Number[3] | 29 | 31 | (6.5%) |
| • Average age | 76.0 | 75.3 | 0.7 |
| • Average monthly benefit | $2,438 | $2,489 | (2.0%) |
| **Beneficiaries[2]** | | | |
| • Number | 102 | 104 | (1.9%) |
| • Average age | 72.9 | 72.4 | 0.5 |
| • Average monthly benefit | $1,039 | $1,000 | 3.9% |

1 Calculated by increasing actual calendar year compensation earnable by the assumed salary scale.
2 Includes members from withdrawn employers.
3 For 2023, includes 16 members receiving a service-connected disability and 13 members receiving a non-service-connected disability.

## General Tier 3 — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
| --- | --- | --- | --- |
| **Active members** | | | |
| • Number | 2,961 | 3,184 | (7.0%) |
| • Average age | 53.4 | 52.9 | 0.5 |
| • Average years of service | 18.5 | 17.7 | 0.8 |
| • Total projected compensation[1] | $365,327,851 | $370,830,449 | (1.5%) |
| • Average projected compensation | $123,380 | $116,467 | 5.9% |
| • Account balances | $627,192,533 | $610,553,860 | 2.7% |
| • Total active vested members | 2,924 | 3,143 | (7.0%) |
| **Inactive members[2]** | | | |
| • Number | 1,488 | 1,547 | (3.8%) |
| • Average age | 51.3 | 50.8 | 0.5 |
| **Retired members[2]** | | | |
| • Number | 4,248 | 4,063 | 4.6% |
| • Average age | 70.1 | 69.6 | 0.5 |
| • Average monthly benefit | $3,528 | $3,377 | 4.5% |
| **Disabled members[2]** | | | |
| • Number[3] | 78 | 76 | 2.6% |
| • Average age | 65.6 | 65.7 | (0.1) |
| • Average monthly benefit | $3,008 | $2,822 | 6.6% |
| **Beneficiaries[2]** | | | |
| • Number | 323 | 295 | 9.5% |
| • Average age | 66.0 | 64.7 | 1.3 |
| • Average monthly benefit | $1,939 | $1,852 | 4.7% |

1 Calculated by increasing actual calendar year compensation earnable by the assumed salary scale.
2 Includes members from withdrawn employers.
3 For 2023, includes 26 members receiving a service-connected disability and 52 members receiving a non-service-connected disability.

## General Tier 4 (2% COLA) — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 52 | 45 | 15.6% |
| • Average age | 44.5 | 44.7 | (0.2) |
| • Average years of service | 3.6 | 3.5 | 0.1 |
| • Total projected compensation[1] | $4,786,225 | $3,936,135 | 21.6% |
| • Average projected compensation | $92,043 | $87,470 | 5.2% |
| • Account balances | $1,853,454 | $1,444,229 | 28.3% |
| • Total active vested members | 17 | 14 | 21.4% |
| **Inactive members** | | | |
| • Number | 13 | 14 | (7.1%) |
| • Average age | 43.5 | 44.7 | (1.2) |
| **Retired members** | | | |
| • Number | 3 | 1 | 200.0% |
| • Average age | 66.9 | 70.6 | (3.7) |
| • Average monthly benefit | $1,106 | $1,384 | (20.1%) |
| **Disabled members** | | | |
| • Number | 0 | 0 | N/A |
| • Average age | N/A | N/A | N/A |
| • Average monthly benefit | N/A | N/A | N/A |
| **Beneficiaries** | | | |
| • Number | 0 | 0 | N/A |
| • Average age | N/A | N/A | N/A |
| • Average monthly benefit | N/A | N/A | N/A |

[1] Calculated by increasing actual calendar year pensionable compensation by the assumed salary scale.

## General Tier 4 (3% COLA) — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 271 | 249 | 8.8% |
| • Average age | 42.2 | 41.8 | 0.4 |
| • Average years of service | 4.7 | 4.2 | 0.5 |
| • Total projected compensation[1] | $29,415,571 | $25,632,324 | 14.8% |
| • Average projected compensation | $108,545 | $102,941 | 5.4% |
| • Account balances | $14,055,405 | $11,253,610 | 24.9% |
| • Total active vested members | 124 | 103 | 20.4% |
| **Inactive members** | | | |
| • Number | 78 | 65 | 20.0% |
| • Average age | 40.4 | 40.3 | 0.1 |
| **Retired members** | | | |
| • Number | 5 | 4 | 25.0% |
| • Average age | 66.0 | 66.0 | 0.0 |
| • Average monthly benefit | $1,557 | $1,388 | 12.2% |
| **Disabled members** | | | |
| • Number | 0 | 0 | N/A |
| • Average age | N/A | N/A | N/A |
| • Average monthly benefit | N/A | N/A | N/A |
| **Beneficiaries** | | | |
| • Number | 0 | 0 | N/A |
| • Average age | N/A | N/A | N/A |
| • Average monthly benefit | N/A | N/A | N/A |

[1] Calculated by increasing actual calendar year pensionable compensation by the assumed salary scale.

## General Tier 5 (2% COLA) — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 4,525 | 4,089 | 10.7% |
| • Average age | 43.1 | 42.7 | 0.4 |
| • Average years of service | 3.9 | 3.6 | 0.3 |
| • Total projected compensation[1] | $413,416,175 | $350,682,245 | 17.9% |
| • Average projected compensation | $91,363 | $85,762 | 6.5% |
| • Account balances | $162,382,441 | $126,776,352 | 28.1% |
| • Total active vested members | 1,698 | 1374 | 23.6% |
| **Inactive members** | | | |
| • Number | 1,486 | 1,290 | 15.2% |
| • Average age | 41.3 | 40.8 | 0.5 |
| **Retired members** | | | |
| • Number | 91 | 63 | 44.4% |
| • Average age | 66.5 | 65.6 | 0.9 |
| • Average monthly benefit | $787 | $751 | 4.8% |
| **Disabled members** | | | |
| • Number | 0 | 0 | N/A |
| • Average age | N/A | N/A | N/A |
| • Average monthly benefit | N/A | N/A | N/A |
| **Beneficiaries** | | | |
| • Number | 0 | 0 | N/A |
| • Average age | N/A | N/A | N/A |
| • Average monthly benefit | N/A | N/A | N/A |

[1] Calculated by increasing actual calendar year pensionable compensation by the assumed salary scale.

## General Tier 5 (3% COLA) — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 661 | 666 | (0.8%) |
| • Average age | 46.8 | 46.4 | 0.4 |
| • Average years of service | 8.0 | 7.5 | 0.5 |
| • Total projected compensation[1] | $63,900,841 | $60,642,057 | 5.4% |
| • Average projected compensation | $96,673 | $91,054 | 6.2% |
| • Account balances | $57,563,723 | $50,911,219 | 13.1% |
| • Total active vested members | 535 | 559 | (4.3%) |
| **Inactive members** | | | |
| • Number | 362 | 337 | 7.4% |
| • Average age | 45.0 | 44.4 | 0.6 |
| **Retired members** | | | |
| • Number | 67 | 53 | 26.4% |
| • Average age | 66.5 | 66.8 | (0.3) |
| • Average monthly benefit | $1,104 | $1,029 | 7.3% |
| **Disabled members** | | | |
| • Number[2] | 1 | 0 | N/A |
| • Average age | 41.6 | N/A | N/A |
| • Average monthly benefit | $3,083 | N/A | N/A |
| **Beneficiaries** | | | |
| • Number | 0 | 0 | N/A |
| • Average age | N/A | N/A | N/A |
| • Average monthly benefit | N/A | N/A | N/A |

[1] Calculated by increasing actual calendar year pensionable compensation by the assumed salary scale.
[2] For 2023, includes 1 member receiving a service-connected disability.

## Safety Tier A (Non-Enhanced and Enhanced) — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 582 | 635 | (8.3%) |
| • Average age | 47.6 | 47.3 | 0.3 |
| • Average years of service | 19.3 | 18.8 | 0.5 |
| • Total projected compensation[1] | $104,141,913 | $106,886,325 | (2.6%) |
| • Average projected compensation | $178,938 | $168,325 | 6.3% |
| • Account balances | $391,827,316 | $399,143,984 | (1.8%) |
| • Total active vested members | 582 | 634 | (8.2%) |
| **Inactive members[2]** | | | |
| • Number | 202 | 215 | (6.0%) |
| • Average age | 48.9 | 48.3 | 0.6 |
| **Retired members[2]** | | | |
| • Number | 1,476 | 1,441 | 2.4% |
| • Average age | 66.8 | 66.6 | 0.2 |
| • Average monthly benefit | $8,942 | $8,705 | 2.7% |
| **Disabled members[2]** | | | |
| • Number[3] | 528 | 533 | (0.9%) |
| • Average age | 66.2 | 65.8 | 0.4 |
| • Average monthly benefit | $7,444 | $7,181 | 3.7% |
| **Beneficiaries[2]** | | | |
| • Number | 489 | 468 | 4.5% |
| • Average age | 71.7 | 71.4 | 0.3 |
| • Average monthly benefit | $4,858 | $4,660 | 4.2% |

[1] Calculated by increasing actual calendar year compensation earnable by the assumed salary scale.
[2] Includes members from withdrawn employers.
[3] For 2023, includes 510 members receiving a service-connected disability and 18 members receiving a non-service-connected disability.

## Safety Tier C — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 108 | 113 | (4.4%) |
| • Average age | 42.5 | 41.7 | 0.8 |
| • Average years of service | 13.7 | 12.6 | 1.1 |
| • Total projected compensation[1] | $16,602,211 | $16,441,156 | 1.0% |
| • Average projected compensation | $153,724 | $145,497 | 5.7% |
| • Account balances | $29,136,186 | $26,308,093 | 10.7% |
| • Total active vested members | 108 | 113 | (4.4%) |
| **Inactive members** | | | |
| • Number | 68 | 71 | (4.2%) |
| • Average age | 40.1 | 39.2 | 0.9 |
| **Retired members** | | | |
| • Number | 13 | 9 | 44.4% |
| • Average age | 54.8 | 57.9 | (3.1) |
| • Average monthly benefit | $2,541 | $2,497 | 1.8% |
| **Disabled members** | | | |
| • Number[2] | 14 | 12 | 16.7% |
| • Average age | 46.9 | 45.3 | 1.6 |
| • Average monthly benefit | $4,164 | $3,847 | 8.2% |
| **Beneficiaries** | | | |
| • Number | 1 | 1 | 0.0% |
| • Average age | 53.1 | 52.1 | 1.0 |
| • Average monthly benefit | $2,144 | $2,102 | 2.0% |

[1] Calculated by increasing actual calendar year compensation earnable by the assumed salary scale.
[2] For 2023, includes 12 members receiving a service-connected disability and 2 members receiving a non-service-connected disability.

## Safety Tier D — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 157 | 144 | 9.0% |
| • Average age | 36.0 | 35.9 | 0.1 |
| • Average years of service | 6.2 | 5.9 | 0.3 |
| • Total projected compensation[1] | $22,059,412 | $19,116,891 | 15.4% |
| • Average projected compensation | $140,506 | $132,756 | 5.8% |
| • Account balances | $21,975,759 | $18,249,978 | 20.4% |
| • Total active vested members | 96 | 93 | 3.2% |
| **Inactive members** | | | |
| • Number | 31 | 27 | 14.8% |
| • Average age | 38.5 | 37.4 | 1.1 |
| **Retired members** | | | |
| • Number | 3 | 2 | 50.0% |
| • Average age | 60.0 | 61.8 | (1.8) |
| • Average monthly benefit | $2,185 | $2,290 | (4.6%) |
| **Disabled members** | | | |
| • Number[2] | 4 | 3 | 33.3% |
| • Average age | 49.9 | 52.8 | (2.9) |
| • Average monthly benefit | $3,692 | $3,650 | 1.2% |
| **Beneficiaries** | | | |
| • Number | 0 | 1 | (100.0%) |
| • Average age | N/A | 56.5 | N/A |
| • Average monthly benefit | N/A | $733 | N/A |

[1] Calculated by increasing actual calendar year pensionable compensation by the assumed salary scale.
[2] For 2023, includes 4 members receiving a service-connected disability.

## Safety Tier E — Demographics as of December 31

| Demographic Data by Status | 2023 | 2022 | Change |
|---|---|---|---|
| **Active members** | | | |
| • Number | 707 | 600 | 17.8% |
| • Average age | 34.6 | 34.3 | 0.3 |
| • Average years of service | 5.0 | 4.6 | 0.4 |
| • Total projected compensation[1] | $86,889,711 | $69,289,794 | 25.4% |
| • Average projected compensation | $122,899 | $115,483 | 6.4% |
| • Account balances | $60,868,853 | $45,698,937 | 33.2% |
| • Total active vested members | 343 | 272 | 26.1% |
| **Inactive members** | | | |
| • Number | 90 | 89 | 1.1% |
| • Average age | 36.6 | 35.6 | 1.0 |
| **Retired members** | | | |
| • Number | 12 | 11 | 9.1% |
| • Average age | 61.7 | 60.9 | 0.8 |
| • Average monthly benefit | $1,987 | $1,920 | 3.5% |
| **Disabled members** | | | |
| • Number[2] | 4 | 2 | 100.0% |
| • Average age | 34.3 | 35.0 | (0.7) |
| • Average monthly benefit | $4,460 | $4,433 | 0.6% |
| **Beneficiaries** | | | |
| • Number | 1 | 0 | N/A |
| • Average age | 35.9 | N/A | N/A |
| • Average monthly benefit | $4,549 | N/A | N/A |

[1] Calculated by increasing actual calendar year pensionable compensation by the assumed salary scale.
[2] For 2023, includes 4 members receiving a service-connected disability.

## Exhibit B: Distribution of active members

### Total Plan
### Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | 137 | 137 | — | — | — | — | — | — | — | — |
| | $75,587 | $75,587 | — | — | — | — | — | — | — | — |
| 25–29 | 651 | 596 | 55 | — | — | — | — | — | — | — |
| | $91,631 | $90,036 | $108,920 | — | — | — | — | — | — | — |
| 30–34 | 1,163 | 761 | 369 | 32 | 1 | — | — | — | — | — |
| | $100,263 | $94,067 | $111,047 | $123,826 | $81,454 | — | — | — | — | — |
| 35–39 | 1,453 | 657 | 529 | 218 | 49 | — | — | — | — | — |
| | $109,460 | $97,889 | $112,220 | $130,962 | $139,136 | — | — | — | — | — |
| 40–44 | 1,515 | 502 | 447 | 263 | 259 | 44 | — | — | — | — |
| | $117,197 | $98,396 | $113,283 | $133,789 | $141,193 | $131,038 | — | — | — | — |
| 45–49 | 1,497 | 395 | 357 | 221 | 264 | 233 | 27 | — | — | — |
| | $121,251 | $97,502 | $108,463 | $135,418 | $143,455 | $141,686 | $128,371 | — | — | — |
| 50–54 | 1,436 | 327 | 339 | 182 | 244 | 239 | 90 | 14 | 1 | — |
| | $120,861 | $94,772 | $104,448 | $126,191 | $142,019 | $147,912 | $138,126 | $118,844 | $93,290 | — |
| 55–59 | 1,222 | 252 | 242 | 169 | 176 | 201 | 118 | 48 | 15 | 1 |
| | $113,932 | $94,073 | $100,591 | $121,472 | $122,150 | $131,280 | $127,137 | $121,729 | $122,299 | $81,032 |
| 60–64 | 853 | 160 | 191 | 128 | 118 | 123 | 72 | 32 | 22 | 7 |
| | $109,515 | $92,333 | $99,402 | $108,882 | $117,508 | $116,257 | $136,868 | $144,896 | $112,558 | $83,984 |
| 65–69 | 330 | 55 | 86 | 63 | 46 | 31 | 22 | 15 | 8 | 4 |
| | $106,220 | $89,154 | $93,264 | $116,761 | $121,593 | $114,698 | $114,370 | $101,659 | $129,534 | $136,581 |
| 70 and over | 92 | 13 | 20 | 22 | 15 | 10 | 5 | 2 | 4 | 1 |
| | $99,506 | $103,720 | $79,250 | $109,907 | $110,224 | $110,547 | $87,229 | $78,753 | $93,891 | $75,146 |
| **Total** | **10,349** | **3,855** | **2,635** | **1,298** | **1,172** | **881** | **334** | **111** | **50** | **13** |
| | **$111,618** | **$94,305** | **$107,792** | **$126,989** | **$135,328** | **$135,616** | **$130,857** | **$124,557** | **$116,318** | **$99,261** |

## General Tier 1 Non-Enhanced
## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 25–29 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 30–34 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 35–39 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 40–44 | 1 | 1 | — | — | — | — | — | — | — | — |
| | $171,733 | $171,733 | — | — | — | — | — | — | — | — |
| 45–49 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 50–54 | 2 | — | — | — | 1 | 1 | — | — | — | — |
| | $181,185 | — | — | — | $114,673 | $247,697 | — | — | — | — |
| 55–59 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 60–64 | 1 | — | — | 1 | — | — | — | — | — | — |
| | $131,719 | — | — | $131,719 | — | — | — | — | — | — |
| 65–69 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 70 and over | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| **Total** | **4** | **1** | **—** | **1** | **1** | **1** | **—** | **—** | **—** | **—** |
| | **$166,456** | **$171,733** | **—** | **$131,719** | **$114,673** | **$247,697** | **—** | **—** | **—** | **—** |

## General Tier 1 Enhanced
## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 25–29 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 30–34 | 3 | — | — | 3 | — | — | — | — | — | — |
| | $173,951 | — | — | $173,951 | — | — | — | — | — | — |
| 35–39 | 20 | 2 | 1 | 14 | 3 | — | — | — | — | — |
| | $145,744 | $124,211 | $152,374 | $147,888 | $147,882 | — | — | — | — | — |
| 40–44 | 51 | 5 | 6 | 17 | 19 | 4 | — | — | — | — |
| | $152,060 | $159,411 | $153,447 | $155,850 | $149,435 | $137,144 | — | — | — | — |
| 45–49 | 68 | 7 | 8 | 16 | 18 | 17 | 2 | — | — | — |
| | $148,859 | $137,140 | $185,752 | $141,273 | $149,460 | $146,851 | $114,657 | — | — | — |
| 50–54 | 62 | 5 | 3 | 14 | 10 | 21 | 8 | 1 | — | — |
| | $155,022 | $115,915 | $159,130 | $159,139 | $156,442 | $165,370 | $135,818 | $202,706 | — | — |
| 55–59 | 61 | 1 | 1 | 6 | 17 | 24 | 7 | 4 | 1 | — |
| | $154,451 | $318,125 | $176,330 | $192,990 | $145,170 | $164,272 | $117,911 | $92,914 | $161,694 | — |
| 60–64 | 39 | 1 | 1 | 6 | 13 | 11 | 2 | 3 | 2 | — |
| | $136,022 | $251,610 | $119,540 | $152,576 | $126,098 | $134,863 | $109,847 | $154,939 | $105,487 | — |
| 65–69 | 13 | — | 2 | 3 | 2 | 2 | 2 | 1 | 1 | — |
| | $137,163 | — | $144,414 | $145,001 | $158,323 | $157,453 | $92,713 | $81,032 | $161,275 | — |
| 70 and over | 4 | — | — | — | 2 | — | — | 1 | — | 1 |
| | $122,197 | — | — | — | $155,072 | — | — | $103,500 | — | $75,146 |
| **Total** | **321** | **21** | **22** | **79** | **84** | **79** | **21** | **10** | **4** | **1** |
| | **$149,295** | **$150,227** | **$164,598** | **$154,917** | **$146,090** | **$155,174** | **$121,255** | **$122,371** | **$133,486** | **$75,146** |

## General Tier 3 Enhanced

## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 25–29 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 30–34 | 8 | — | — | 8 | — | — | — | — | — | — |
| | $88,690 | — | — | $88,690 | — | — | — | — | — | — |
| 35–39 | 144 | 11 | 25 | 84 | 24 | — | — | — | — | — |
| | $112,957 | $102,030 | $123,298 | $113,489 | $105,332 | — | — | — | — | — |
| 40–44 | 380 | 20 | 41 | 136 | 156 | 27 | — | — | — | — |
| | $129,067 | $136,305 | $143,506 | $134,585 | $124,201 | $102,105 | — | — | — | — |
| 45–49 | 532 | 19 | 36 | 147 | 181 | 130 | 19 | — | — | — |
| | $129,591 | $138,288 | $139,293 | $138,030 | $130,480 | $118,212 | $106,586 | — | — | — |
| 50–54 | 592 | 17 | 33 | 124 | 184 | 154 | 68 | 11 | 1 | — |
| | $127,916 | $126,910 | $133,926 | $124,659 | $130,725 | $129,484 | $125,752 | $95,727 | $93,290 | — |
| 55–59 | 641 | 15 | 30 | 130 | 147 | 160 | 103 | 42 | 13 | 1 |
| | $119,436 | $125,991 | $114,975 | $117,986 | $116,163 | $121,966 | $123,913 | $118,372 | $113,471 | $81,032 |
| 60–64 | 446 | 11 | 17 | 90 | 100 | 105 | 68 | 28 | 20 | 7 |
| | $118,040 | $168,347 | $120,102 | $108,816 | $113,903 | $109,368 | $135,739 | $142,902 | $113,265 | $83,984 |
| 65–69 | 165 | 3 | 9 | 38 | 43 | 29 | 18 | 14 | 7 | 4 |
| | $120,458 | $161,408 | $106,597 | $134,000 | $119,984 | $111,749 | $115,260 | $103,132 | $125,000 | $136,581 |
| 70 and over | 53 | 3 | 3 | 14 | 13 | 10 | 5 | 1 | 4 | — |
| | $104,884 | $143,897 | $49,254 | $118,927 | $103,324 | $110,547 | $87,229 | $54,006 | $93,891 | — |
| **Total** | **2,961** | **99** | **194** | **771** | **848** | **615** | **281** | **96** | **45** | **12** |
| | **$123,380** | **$134,252** | **$128,858** | **$124,751** | **$123,281** | **$119,365** | **$124,841** | **$120,039** | **$112,984** | **$101,270** |

## General Tier 4 (2% COLA)
## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | 2 | 2 | — | — | — | — | — | — | — | — |
| | $55,186 | $55,186 | — | — | — | — | — | — | — | — |
| 25–29 | 5 | 5 | — | — | — | — | — | — | — | — |
| | $85,889 | $85,889 | — | — | — | — | — | — | — | — |
| 30–34 | 6 | 5 | 1 | — | — | — | — | — | — | — |
| | $84,840 | $87,916 | $69,459 | — | — | — | — | — | — | — |
| 35–39 | 8 | 5 | 3 | — | — | — | — | — | — | — |
| | $82,489 | $75,571 | $94,019 | — | — | — | — | — | — | — |
| 40–44 | 2 | 1 | 1 | — | — | — | — | — | — | — |
| | $86,828 | $95,382 | $78,273 | — | — | — | — | — | — | — |
| 45–49 | 11 | 8 | 3 | — | — | — | — | — | — | — |
| | $97,288 | $108,734 | $66,763 | — | — | — | — | — | — | — |
| 50–54 | 9 | 6 | 3 | — | — | — | — | — | — | — |
| | $115,180 | $110,048 | $125,444 | — | — | — | — | — | — | — |
| 55–59 | 6 | 3 | 3 | — | — | — | — | — | — | — |
| | $91,586 | $99,572 | $83,601 | — | — | — | — | — | — | — |
| 60–64 | 3 | 2 | 1 | — | — | — | — | — | — | — |
| | $82,499 | $87,793 | $71,912 | — | — | — | — | — | — | — |
| 65–69 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 70 and over | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| **Total** | **52** | **37** | **15** | **—** | **—** | **—** | **—** | **—** | **—** | **—** |
| | **$92,043** | **$93,435** | **$88,608** | **—** | **—** | **—** | **—** | **—** | **—** | **—** |

### General Tier 4 (3% COLA)
### Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | 9 | 9 | — | — | — | — | — | — | — | — |
| | $89,366 | $89,366 | — | — | — | — | — | — | — | — |
| 25–29 | 26 | 25 | 1 | — | — | — | — | — | — | — |
| | $92,091 | $90,286 | $137,206 | — | — | — | — | — | — | — |
| 30–34 | 43 | 27 | 16 | — | — | — | — | — | — | — |
| | $97,272 | $85,254 | $117,552 | — | — | — | — | — | — | — |
| 35–39 | 47 | 28 | 17 | 2 | — | — | — | — | — | — |
| | $114,753 | $107,436 | $124,658 | $133,005 | — | — | — | — | — | — |
| 40–44 | 43 | 23 | 20 | — | — | — | — | — | — | — |
| | $124,902 | $117,748 | $133,129 | — | — | — | — | — | — | — |
| 45–49 | 36 | 18 | 18 | — | — | — | — | — | — | — |
| | $104,425 | $92,718 | $116,133 | — | — | — | — | — | — | — |
| 50–54 | 25 | 12 | 13 | — | — | — | — | — | — | — |
| | $114,803 | $123,171 | $107,079 | — | — | — | — | — | — | — |
| 55–59 | 24 | 12 | 9 | 3 | — | — | — | — | — | — |
| | $116,199 | $115,463 | $114,452 | $124,385 | — | — | — | — | — | — |
| 60–64 | 12 | 4 | 7 | 1 | — | — | — | — | — | — |
| | $102,434 | $91,700 | $105,062 | $126,970 | — | — | — | — | — | — |
| 65–69 | 6 | 3 | 3 | — | — | — | — | — | — | — |
| | $103,782 | $117,288 | $90,275 | — | — | — | — | — | — | — |
| 70 and over | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| **Total** | **271** | **161** | **104** | **6** | **—** | **—** | **—** | **—** | **—** | **—** |
| | **$108,545** | **$101,434** | **$118,448** | **$127,689** | **—** | **—** | **—** | **—** | **—** | **—** |

## General Tier 5 (2% COLA)

## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | 82 | 82 | — | — | — | — | — | — | — | — |
| | $64,918 | $64,918 | — | — | — | — | — | — | — | — |
| 25–29 | 402 | 381 | 21 | — | — | — | — | — | — | — |
| | $78,943 | $78,800 | $81,544 | — | — | — | — | — | — | — |
| 30–34 | 750 | 568 | 182 | — | — | — | — | — | — | — |
| | $90,068 | $88,277 | $95,657 | — | — | — | — | — | — | — |
| 35–39 | 840 | 508 | 325 | 7 | — | — | — | — | — | — |
| | $97,425 | $93,535 | $102,562 | $141,181 | — | — | — | — | — | — |
| 40–44 | 659 | 400 | 256 | 3 | — | — | — | — | — | — |
| | $95,886 | $93,200 | $99,434 | $151,446 | — | — | — | — | — | — |
| 45–49 | 530 | 308 | 222 | — | — | — | — | — | — | — |
| | $94,429 | $92,417 | $97,220 | — | — | — | — | — | — | — |
| 50–54 | 493 | 258 | 232 | 2 | 1 | — | — | — | — | — |
| | $92,031 | $87,369 | $96,770 | $114,784 | $150,043 | — | — | — | — | — |
| 55–59 | 362 | 201 | 160 | 1 | — | — | — | — | — | — |
| | $89,080 | $85,157 | $93,619 | $151,446 | — | — | — | — | — | — |
| 60–64 | 270 | 135 | 133 | 2 | — | — | — | — | — | — |
| | $89,504 | $83,569 | $95,881 | $66,033 | — | — | — | — | — | — |
| 65–69 | 111 | 48 | 61 | 2 | — | — | — | — | — | — |
| | $86,542 | $82,179 | $90,262 | $77,788 | — | — | — | — | — | — |
| 70 and over | 26 | 10 | 15 | 1 | — | — | — | — | — | — |
| | $90,098 | $91,667 | $84,961 | $151,446 | — | — | — | — | — | — |
| **Total** | **4,525** | **2,899** | **1,607** | **18** | **1** | **—** | **—** | **—** | **—** | **—** |
| | **$91,363** | **$87,806** | **$97,358** | **$125,706** | **$150,043** | **—** | **—** | **—** | **—** | **—** |

## General Tier 5 (3% COLA)
## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | 9 | 9 | — | — | — | — | — | — | — | — |
| | $57,419 | $57,419 | — | — | — | — | — | — | — | — |
| 25–29 | 15 | 13 | 2 | — | — | — | — | — | — | — |
| | $64,283 | $62,826 | $73,752 | — | — | — | — | — | — | — |
| 30–34 | 53 | 21 | 23 | 8 | 1 | — | — | — | — | — |
| | $86,267 | $76,557 | $87,322 | $109,326 | $81,454 | — | — | — | — | — |
| 35–39 | 108 | 24 | 53 | 31 | — | — | — | — | — | — |
| | $100,150 | $82,529 | $105,994 | $103,800 | — | — | — | — | — | — |
| 40–44 | 137 | 23 | 62 | 52 | — | — | — | — | — | — |
| | $100,009 | $78,879 | $108,803 | $98,869 | — | — | — | — | — | — |
| 45–49 | 106 | 18 | 50 | 38 | — | — | — | — | — | — |
| | $103,676 | $83,503 | $109,544 | $105,509 | — | — | — | — | — | — |
| 50–54 | 81 | 11 | 42 | 28 | — | — | — | — | — | — |
| | $98,873 | $89,957 | $105,965 | $91,738 | — | — | — | — | — | — |
| 55–59 | 58 | 8 | 27 | 23 | — | — | — | — | — | — |
| | $101,996 | $109,466 | $101,707 | $99,736 | — | — | — | — | — | — |
| 60–64 | 54 | 5 | 26 | 22 | 1 | — | — | — | — | — |
| | $93,105 | $114,849 | $92,683 | $89,672 | $70,875 | — | — | — | — | — |
| 65–69 | 31 | 1 | 10 | 20 | — | — | — | — | — | — |
| | $84,652 | $122,837 | $82,801 | $83,668 | — | — | — | — | — | — |
| 70 and over | 9 | — | 2 | 7 | — | — | — | — | — | — |
| | $84,928 | — | $81,411 | $85,933 | — | — | — | — | — | — |
| **Total** | **661** | **133** | **297** | **229** | **2** | **—** | **—** | **—** | **—** | **—** |
| | **$96,673** | **$81,214** | **$103,009** | **$97,612** | **$76,165** | **—** | **—** | **—** | **—** | **—** |

## Safety Tier A Non-Enhanced
## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 25–29 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 30–34 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 35–39 | 1 | — | 1 | — | — | — | — | — | — | — |
| | $151,206 | — | $151,206 | — | — | — | — | — | — | — |
| 40–44 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 45–49 | 2 | — | — | — | — | 2 | — | — | — | — |
| | $190,888 | — | — | — | — | $190,888 | — | — | — | — |
| 50–54 | 2 | — | — | — | — | 2 | — | — | — | — |
| | $193,529 | — | — | — | — | $193,529 | — | — | — | — |
| 55–59 | 3 | — | — | 1 | — | — | — | 1 | 1 | — |
| | $214,024 | — | — | $167,335 | — | — | — | $277,059 | $197,677 | — |
| 60–64 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 65–69 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 70 and over | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| **Total** | **8** | **—** | **1** | **1** | **—** | **4** | **—** | **1** | **1** | **—** |
| | **$195,264** | **—** | **$151,206** | **$167,335** | **—** | **$192,209** | **—** | **$277,059** | **$197,677** | **—** |

## Safety Tier A Enhanced
## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 25–29 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 30–34 | 3 | 1 | 1 | 1 | — | — | — | — | — | — |
| | $165,341 | $152,449 | $182,583 | $160,991 | — | — | — | — | — | — |
| 35–39 | 71 | 8 | 16 | 33 | 14 | — | — | — | — | — |
| | $173,751 | $166,875 | $177,075 | $170,929 | $180,530 | — | — | — | — | — |
| 40–44 | 136 | 7 | 14 | 31 | 71 | 13 | — | — | — | — |
| | $172,455 | $159,322 | $175,848 | $165,549 | $173,021 | $189,250 | — | — | — | — |
| 45–49 | 166 | 4 | 4 | 13 | 55 | 84 | 6 | — | — | — |
| | $181,015 | $216,633 | $223,408 | $180,713 | $181,099 | $175,798 | $201,927 | — | — | — |
| 50–54 | 135 | 2 | 4 | 7 | 45 | 61 | 14 | 2 | — | — |
| | $187,510 | $194,827 | $182,735 | $195,175 | $184,941 | $185,293 | $199,546 | $204,061 | — | — |
| 55–59 | 40 | 1 | 1 | 3 | 9 | 17 | 8 | 1 | — | — |
| | $176,179 | $223,794 | $164,119 | $188,471 | $169,686 | $172,365 | $176,722 | $222,687 | — | — |
| 60–64 | 20 | 1 | 1 | 4 | 4 | 7 | 2 | 1 | — | — |
| | $175,542 | $100,693 | $119,064 | $154,478 | $191,373 | $190,365 | $202,268 | $170,593 | — | — |
| 65–69 | 3 | — | — | — | 1 | — | 2 | — | — | — |
| | $124,455 | — | — | — | $117,324 | — | $128,021 | — | — | — |
| 70 and over | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| **Total** | **574** | **24** | **41** | **92** | **199** | **182** | **32** | **4** | **—** | **—** |
| | **$178,710** | **$174,307** | **$180,132** | **$172,092** | **$178,415** | **$180,181** | **$189,986** | **$200,351** | **—** | **—** |

## Safety Tier C
## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 25–29 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 30–34 | 6 | — | — | 6 | — | — | — | — | — | — |
| | $152,970 | — | — | $152,970 | — | — | — | — | — | — |
| 35–39 | 38 | 1 | 2 | 27 | 8 | — | — | — | — | — |
| | $152,425 | $131,336 | $151,766 | $149,580 | $164,830 | — | — | — | — | — |
| 40–44 | 34 | 2 | 2 | 17 | 13 | — | — | — | — | — |
| | $150,322 | $124,908 | $144,468 | $147,188 | $159,231 | — | — | — | — | — |
| 45–49 | 15 | 1 | — | 4 | 10 | — | — | — | — | — |
| | $154,792 | $122,788 | — | $148,661 | $160,444 | — | — | — | — | — |
| 50–54 | 9 | — | 1 | 5 | 3 | — | — | — | — | — |
| | $156,098 | — | $146,615 | $162,108 | $149,241 | — | — | — | — | — |
| 55–59 | 5 | — | — | 2 | 3 | — | — | — | — | — |
| | $181,753 | — | — | $240,648 | $142,489 | — | — | — | — | — |
| 60–64 | 1 | — | — | 1 | — | — | — | — | — | — |
| | $145,781 | — | — | $145,781 | — | — | — | — | — | — |
| 65–69 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 70 and over | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| **Total** | **108** | **4** | **5** | **62** | **37** | **—** | **—** | **—** | **—** | **—** |
| | **$153,724** | **$125,985** | **$147,816** | **$153,079** | **$158,602** | **—** | **—** | **—** | **—** | **—** |

## Safety Tier D
## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | 3 | 3 | — | — | — | — | — | — | — | — |
| | $117,100 | $117,100 | — | — | — | — | — | — | — | — |
| 25–29 | 26 | 25 | 1 | — | — | — | — | — | — | — |
| | $135,631 | $136,083 | $124,325 | — | — | — | — | — | — | — |
| 30–34 | 45 | 26 | 18 | 1 | — | — | — | — | — | — |
| | $145,130 | $140,331 | $153,875 | $112,487 | — | — | — | — | — | — |
| 35–39 | 44 | 10 | 24 | 10 | — | — | — | — | — | — |
| | $142,162 | $129,879 | $146,135 | $144,910 | — | — | — | — | — | — |
| 40–44 | 25 | 5 | 16 | 4 | — | — | — | — | — | — |
| | $143,718 | $129,488 | $146,302 | $151,172 | — | — | — | — | — | — |
| 45–49 | 9 | — | 7 | 2 | — | — | — | — | — | — |
| | $124,695 | — | $118,855 | $145,135 | — | — | — | — | — | — |
| 50–54 | 2 | — | 1 | 1 | — | — | — | — | — | — |
| | $142,785 | — | $112,541 | $173,029 | — | — | — | — | — | — |
| 55–59 | 2 | 1 | 1 | — | — | — | — | — | — | — |
| | $147,137 | $181,734 | $112,541 | — | — | — | — | — | — | — |
| 60–64 | 1 | — | — | 1 | — | — | — | — | — | — |
| | $100,697 | — | — | $100,697 | — | — | — | — | — | — |
| 65–69 | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| 70 and over | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| **Total** | **157** | **70** | **68** | **19** | **—** | **—** | **—** | **—** | **—** | **—** |
| | **$140,506** | **$136,142** | **$144,106** | **$143,698** | **—** | **—** | **—** | **—** | **—** | **—** |

## Safety Tier E

## Active Counts & Average Projected Compensation by Age and Years of Service as of December 31, 2023

| Age | Total | 0–4 Years | 5–9 Years | 10–14 Years | 15–19 Years | 20–24 Years | 25–29 Years | 30–34 Years | 35–39 Years | 40 Years and Over |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | 32 | 32 | — | — | — | — | — | — | — | — |
| | $101,542 | $101,542 | — | — | — | — | — | — | — | — |
| 25–29 | 177 | 147 | 30 | — | — | — | — | — | — | — |
| | $116,397 | $113,830 | $128,972 | — | — | — | — | — | — | — |
| 30–34 | 246 | 113 | 128 | 5 | — | — | — | — | — | — |
| | $124,450 | $117,643 | $130,125 | $133,028 | — | — | — | — | — | — |
| 35–39 | 132 | 60 | 62 | 10 | — | — | — | — | — | — |
| | $125,932 | $121,574 | $128,757 | $134,568 | — | — | — | — | — | — |
| 40–44 | 47 | 15 | 29 | 3 | — | — | — | — | — | — |
| | $127,423 | $119,326 | $131,032 | $133,028 | — | — | — | — | — | — |
| 45–49 | 22 | 12 | 9 | 1 | — | — | — | — | — | — |
| | $123,052 | $119,162 | $127,132 | $133,028 | — | — | — | — | — | — |
| 50–54 | 24 | 16 | 7 | 1 | — | — | — | — | — | — |
| | $132,453 | $137,154 | $121,624 | $133,028 | — | — | — | — | — | — |
| 55–59 | 20 | 10 | 10 | — | — | — | — | — | — | — |
| | $142,553 | $141,627 | $143,478 | — | — | — | — | — | — | — |
| 60–64 | 6 | 1 | 5 | — | — | — | — | — | — | — |
| | $151,121 | $170,678 | $147,210 | — | — | — | — | — | — | — |
| 65–69 | 1 | — | 1 | — | — | — | — | — | — | — |
| | $167,644 | — | $167,644 | — | — | — | — | — | — | — |
| 70 and over | — | — | — | — | — | — | — | — | — | — |
| | — | — | — | — | — | — | — | — | — | — |
| **Total** | **707** | **406** | **281** | **20** | **—** | **—** | **—** | **—** | **—** | **—** |
| | **$122,899** | **$117,172** | **$130,399** | **$133,798** | **—** | **—** | **—** | **—** | **—** | **—** |

# Exhibit C: Reconciliation of member status

## Reconciliation of Member Status

| Line Description | Active Members | Inactive Members[1] | Retired Members | Disabled Members | Beneficiaries | Total |
|---|---|---|---|---|---|---|
| Number as of December 31, 2022 | 10,082 | 3,974 | 8,197 | 874 | 1,490 | 24,617 |
| New members | 1,071 | 124 | 0 | 0 | 110 | 1,305 |
| Terminations with vested rights | (366) | 366 | 0 | 0 | 0 | 0 |
| Contribution refunds | (134) | (200) | 0 | 0 | 0 | (334) |
| Retirements | (333) | (89) | 422 | 0 | 0 | 0 |
| New disabilities | (12) | (3) | (8) | 23 | 0 | 0 |
| Return to work | 50 | (48) | (2) | 0 | 0 | 0 |
| Died with or without beneficiary | (9) | (10) | (206) | (25) | (72) | (322) |
| Data adjustments | 0 | (5) | 4 | 0 | (2) | (3) |
| **Number as of December 31, 2023** | **10,349** | **4,109** | **8,407** | **872** | **1,526** | **25,263** |

[1] Includes inactive members with member contributions on deposit.

# Exhibit D: Summary of income and expenses on a market value basis

## Income and Expenses for Years Ended December 31

| Line Description | 2023 | 2022 |
|---|---|---|
| **Contribution income** | | |
| • Employer contributions | $373,148,067 | $352,383,785 |
| • Member contributions | 132,103,613 | 122,303,823 |
| • Less administrative expenses | (12,839,955) | (11,537,709) |
| – **Net contribution income** | **$492,411,725** | **$463,149,898** |
| **Investment income** | | |
| • Investment, dividends and other income | $195,660,493 | $172,575,489 |
| • Asset appreciation | 727,267,405 | (1,407,318,252) |
| • Less investment and other fees | (54,676,968) | (47,164,600) |
| – **Net investment income** | **$868,250,930** | **$(1,281,907,363)** |
| **Total income available for benefits** | **$1,360,662,655** | **$(818,757,464)** |
| **Less benefit payments** | | |
| • Benefits paid | $(591,888,330) | $(562,830,131) |
| • Refund of contributions | (10,062,502) | (13,738,069) |
| • Adjustments, transfers or other expenses | (3,522,376) | (4,771,275) |
| – **Net benefit payments** | **$(605,473,208)** | **$(581,339,475)** |
| **Change in market value of assets** | **$755,189,447** | **$(1,400,096,939)** |
| **Net assets at market value at the beginning of the year** | **$10,053,668,812** | **$11,453,765,753** |
| **Net assets at market value at the end of the year** | **$10,808,858,259** | **$10,053,668,812** |

**Note:** Results may be slightly off due to rounding.

# Exhibit E: Summary of plan assets

## Statement of Plan Assets as of December 31

| Line Description | 2023 | 2022 |
|---|---|---|
| **Cash equivalents** | **$734,330,164** | **$735,959,243** |
| **Accounts receivable** | | |
| • Securities sold | $7,191,876 | $13,095,410 |
| • Accrued interest and dividends | 23,756,052 | 20,647,573 |
| • Employer contributions | 12,769,540 | 11,459,157 |
| • Other receivable | 1,354,961 | 3,927,768 |
| – **Total accounts receivable** | **$45,072,429** | **$49,129,908** |
| **Investments** | | |
| • Domestic and international stocks | $5,340,364,573 | $4,805,529,144 |
| • Domestic and international bonds | 2,165,938,729 | 1,994,157,311 |
| • Real estate | 516,925,736 | 565,387,390 |
| • Alternative investments and real assets | 2,496,664,218 | 2,409,662,472 |
| – **Total investments at market value** | **$10,519,893,256** | **$9,774,736,317** |
| **Other assets** | **$5,779,870** | **$4,727,818** |
| **Total assets** | **$11,305,075,719** | **$10,564,553,286** |
| **Accounts payable** | | |
| • Investment trades | $(12,629,837) | $(16,827,616) |
| • Securities lending liability | (229,840,189) | (269,029,887) |
| • Employer contributions unearned | (192,889,114) | (167,823,612) |
| • Other | (59,668,319) | (56,113,360) |
| – **Total accounts payable** | **$(495,027,459)** | **$(509,794,475)** |
| **Deferred inflows of resources** | **$(1,190,000)** | **$(1,090,000)** |
| **Net assets at market value** | **$10,808,858,259** | **$10,053,668,812** |
| **Net assets at actuarial value** | **$11,340,825,456** | **$10,878,817,667** |
| **Net assets at valuation value** | **$11,323,476,654** | **$10,861,822,062** |

**Note:** Results may be slightly off due to rounding.

# Exhibit F: Summary of reported reserve information

## Total Allocated Reserves as of December 31

| Line Description | 2023 | 2022 |
|---|---|---|
| **Member** | | |
| • Member Deposits[1] | $1,144,000,073 | $1,077,187,687 |
| • Member Cost of Living[1] | 559,479,238 | 537,732,911 |
| **Employer** | | |
| • Employer Advance[1, 2] | 3,523,101,672 | 2,957,523,538 |
| • Employer Cost of Living[1, 2] | 1,765,728,521 | 705,910,721 |
| **Retired** | | |
| • Retired Members[1, 2] | 4,266,599,629 | 4,396,244,276 |
| • Retired Cost of Living[1, 2] | 3,159,992,858 | 3,939,921,046 |
| • Dollar Power Cost of Living Supplement Pre-Funding[1] | (2,334,690) | (1,796,005) |
| • Post Retirement Death Benefit[3] | 17,348,802 | 16,995,605 |
| **Contingency** | | |
| • Statutory Contingency (one percent)[3] | 0 | 0 |
| • Additional One Percent Contingency Designation[3] | 0 | 0 |
| • Contra Tracking Account[1] | (3,093,090,647) | (2,750,902,112) |
| **Total Allocated Reserves** | **$11,340,825,456** | **$10,878,817,667** |
| Total Deferred Return | (531,967,197) | (825,148,855) |
| **Net Market Value** | **$10,808,858,259** | **$10,053,668,812** |

**Note:** Results may be slightly off due to rounding.

1 Included in valuation value of assets.
2 Both 2023 and 2022 information reflect a “true-up” of retired reserves as of January 1, 2023 and January 1, 2022, respectively.
3 Not included in valuation value of assets. See reference made on page 139 with respect to the payment of benefits out of the Post Retirement Death Benefit Reserve.

## Exhibit G: Development of the Plan

### Development of the Plan through December 31, 2023

| Year Ended December 31 | Employer Contributions[1] | Member Contributions[1] | Administrative Expenses[2] | Net Investment Return[3] | Benefit Payments | Market Value of Assets at Year End | Valuation Value of Assets at Year End | Valuation Value as a Percent of Market Value |
|---|---|---|---|---|---|---|---|---|
| 2014 | $293,760,413 | $78,257,665 | N/A | $473,522,261 | $394,947,705 | $6,908,910,230 | $6,557,496,101 | 94.9% |
| 2015 | 323,720,270 | 85,360,637 | N/A | 65,495,657 | 406,904,366 | 6,976,582,428 | 7,136,801,380 | 102.3% |
| 2016 | 307,457,143 | 89,240,172 | $8,486,463 | 493,874,242 | 420,148,018 | 7,438,519,504 | 7,606,997,530 | 102.3% |
| 2017 | 314,836,561 | 96,466,906 | 9,146,115 | 987,415,981 | 437,511,788 | 8,390,581,049 | 8,179,891,191 | 97.5% |
| 2018 | 325,117,103 | 103,541,529 | 9,337,053 | (195,030,888) | 464,885,947 | 8,149,985,793 | 8,650,178,226 | 106.1% |
| 2019 | 327,982,796 | 108,487,711 | 10,200,473 | 1,168,171,586 | 487,414,734 | 9,257,012,679 | 9,128,668,718 | 98.6% |
| 2020 | 336,356,723 | 113,494,191 | 10,749,625 | 882,394,059 | 508,270,165 | 10,070,237,862 | 9,662,282,926 | 95.9% |
| 2021 | 410,759,608 | 117,016,915 | 11,237,383 | 1,407,343,614 | 540,354,863 | 11,453,765,753 | 10,434,412,288 | 91.1% |
| 2022 | 352,383,785 | 122,303,823 | 11,537,709 | (1,281,907,363) | 581,339,475 | 10,053,668,812 | 10,861,822,062 | 108.0% |
| 2023 | 373,148,067 | 132,103,613 | 12,839,955 | 868,250,930 | 605,473,208 | 10,808,858,259 | 11,323,476,654 | 104.8% |

**Note:** Results may be slightly off due to rounding.

1 Prior to 2017, employer contributions include “employer subvention of member contributions” and exclude “member subvention of employer contributions”.
2 Prior to 2016, administrative expenses were shown as an offset to the net investment return.
3 On a market basis, net of investment fees beginning with the year ended December 31, 2016. Prior to 2016, shown net of both investment fees and administrative expenses.

# Exhibit H: Amortization bases

## Total Plan — All Cost Groups Combined

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2008 | $127,228,371 | 18 | $46,057,454 | 3 | $16,476,585 |
| Actuarial Loss | 2009 | 267,892,376 | 18 | 122,007,786 | 4 | 33,313,438 |
| Assumption Change | 2009 | 60,965,491 | 18 | 27,765,869 | 4 | 7,581,291 |
| Depooling Implementation | 2009 | (18,188,149) | 18 | (8,283,535) | 4 | (2,261,766) |
| Actuarial Loss | 2010 | 265,289,245 | 18 | 142,544,425 | 5 | 31,683,217 |
| Assumption Change[3] | 2010 | 4,041,816 | 18 | 2,171,737 | 5 | 482,710 |
| Actuarial Loss | 2011 | 183,273,836 | 18 | 111,543,733 | 6 | 21,021,025 |
| Actuarial Loss | 2012 | 231,260,954 | 18 | 155,012,292 | 6 | 29,212,913 |
| Assumption Change | 2012 | 544,097,665 | 18 | 364,704,134 | 6 | 68,730,487 |
| Actuarial Gain | 2013 | (202,325,285) | 18 | (146,809,463) | 6 | (27,667,046) |
| Assumption Change[4] | 2013 | (189,066,417) | 18 | (137,188,682) | 6 | (25,853,957) |
| Actuarial Gain | 2014 | (284,855,905) | 18 | (220,274,471) | 6 | (41,511,927) |
| Assumption Change[5] | 2014 | (51,701) | 18 | (39,979) | 6 | (7,534) |
| Actuarial Gain | 2015 | (202,620,622) | 18 | (164,928,993) | 6 | (31,081,769) |
| Assumption Change | 2015 | 114,345,251 | 18 | 93,074,668 | 6 | 17,540,429 |
| Actuarial Gain | 2016 | (46,362,239) | 18 | (39,538,084) | 6 | (7,451,168) |

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.
[3] Effective with the December 31, 2010 valuation, leave cashout (terminal pay) assumptions are now based on cost groups.
[4] Effective with the December 31, 2013 valuation, the leave cashout assumptions were reduced to reflect AB 197.
[5] Effective with the December 31, 2014 valuation, leave cashout (terminal pay) assumptions were eliminated for Cost Group 9.

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| San Ramon UAAL Prepayment | 2017 | $(303,806) | 18 | $(269,232) | 6 | $(50,738) |
| LAFCO UAAL Prepayment | 2017 | (30,817) | 18 | (27,310) | 6 | (5,147) |
| Actuarial Gain | 2017 | (38,341,514) | 18 | (33,978,165) | 6 | (6,403,370) |
| San Ramon UAAL Prepayment | 2018 | (261,501) | 18 | (239,168) | 6 | (45,072) |
| Actuarial Loss | 2018 | 155,264,736 | 18 | 142,004,507 | 6 | 26,761,526 |
| Assumption Change | 2018 | (90,889,139) | 18 | (83,126,844) | 6 | (15,665,707) |
| San Ramon UAAL Prepayment | 2019 | (1,267,559) | 18 | (1,189,500) | 14 | (109,907) |
| LAFCO UAAL Prepayment | 2019 | (31,680) | 18 | (29,729) | 14 | (2,747) |
| Actuarial Loss | 2019 | 41,748,029 | 18 | 39,177,080 | 14 | 3,619,872 |
| Method Change | 2019 | (17,427,203) | 18 | (16,353,992) | 14 | (1,511,071) |
| San Ramon UAAL Prepayment | 2020 | (267,529) | 18 | (256,305) | 15 | (22,467) |
| LAFCO UAAL Prepayment | 2020 | (31,963) | 18 | (30,622) | 15 | (2,684) |
| CCCFPD UAAL Prepayment[3] | 2020 | (3,021,672) | 18 | (2,894,904) | 15 | (253,763) |
| Actuarial Loss | 2020 | 36,503,813 | 18 | 34,972,376 | 15 | 3,065,634 |
| San Ramon UAAL Prepayment | 2021 | (270,666) | 18 | (263,586) | 16 | (22,016) |
| LAFCO UAAL Prepayment | 2021 | (31,804) | 18 | (30,972) | 16 | (2,587) |
| Actuarial Gain | 2021 | (28,564,305) | 18 | (27,817,128) | 16 | (2,323,435) |
| Assumption Change | 2021 | 223,522,296 | 18 | 217,675,465 | 16 | 18,181,406 |
| San Ramon UAAL Prepayment | 2022 | (286,847) | 18 | (283,547) | 17 | (22,653) |
| Actuarial Loss | 2022 | 341,894,603 | 18 | 337,960,947 | 17 | 26,999,868 |

1 Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
2 As of middle of year.
3 As part of East Fire's annexation into Con Fire, East Fire made a prepayment of $3,344,437 on June 30, 2022 towards their December 31, 2020 UAAL balance. As requested by East Fire, the prepayment has been used to reduce Con Fire's UAAL contribution rates effective July 1, 2022. The amount shown as the initial amount of $3,021,672 is equal to $3,344,437 discounted with interest from June 30, 2022 to December 31, 2020.

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| San Ramon UAAL Prepayment | 2023 | $(295,995) | 18 | $(295,995) | 18 | $(22,694) |
| IHSS UAAL Prepayment | 2023 | (92,497) | 18 | (92,497) | 18 | (7,092) |
| Actuarial Loss[3] | 2023 | 154,058,919 | 18 | 154,058,919 | 18 | 11,811,880 |
| Cost Group 6 — Actuarial Surplus | 2023 | (318,537) | N/A | (318,537) | N/A | 0 |
| **Subtotal — All Cost Groups** | | | | **$1,106,170,152** | | **$154,173,964** |
| Withdrawn Employers[4] | | | | 9,063,256 | | |
| **Total CCCERA** | | | | **$1,115,233,408** | | |

**Note:** Results may be slightly off due to rounding.

1 Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
2 As of middle of year.
3 Excludes the actuarial loss for Cost Group 6. Cost Group 6 was in surplus for both the December 31, 2022 and December 31, 2023 valuations.
4 Effective with the December 31, 2016 valuation, the three withdrawn employers (i.e., Diablo Water District, Delta Diablo Sanitation District and City of Pittsburg) have been moved from Cost Groups 1, 2 and 7 into their own Withdrawn Employers Cost Group.

## Cost Groups 1 and 2 – General County and Small Districts

| Amortization Base Type | Established December 31 | Initial Amount[1] | Initial Period | Outstanding Balance | Years Remaining[2] | Annual Payment[3] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2008 | $79,980,337 | 18 | $28,953,375 | 3 | $10,357,774 |
| Actuarial Loss | 2009 | 164,932,313 | 18 | 75,116,084 | 4 | 20,509,961 |
| Assumption Change | 2009 | 39,537,694 | 18 | 18,006,882 | 4 | 4,916,663 |
| Depooling Implementation | 2009 | (74,652,572) | 18 | (33,999,456) | 4 | (9,283,332) |
| Actuarial Loss | 2010 | 152,969,439 | 18 | 82,193,082 | 5 | 18,268,980 |
| Actuarial Loss | 2011 | 94,687,495 | 18 | 57,628,503 | 6 | 10,860,406 |
| Actuarial Loss | 2012 | 116,951,818 | 18 | 78,391,830 | 6 | 14,773,369 |
| Assumption Change | 2012 | 288,612,127 | 18 | 193,454,306 | 6 | 36,457,521 |
| Actuarial Gain | 2013 | (134,721,070) | 18 | (97,755,097) | 6 | (18,422,482) |
| Assumption Change[4] | 2013 | (107,482,250) | 18 | (77,990,308) | 6 | (14,697,700) |
| Actuarial Gain | 2014 | (171,785,272) | 18 | (132,838,777) | 6 | (25,034,193) |
| Actuarial Gain | 2015 | (104,934,178) | 18 | (85,414,250) | 6 | (16,096,782) |
| Assumption Change | 2015 | 39,788,586 | 18 | 32,387,086 | 6 | 6,103,523 |
| Actuarial Gain | 2016 | (28,560,150) | 18 | (24,356,322) | 6 | (4,590,082) |
| Actuarial Gain | 2017 | (17,925,791) | 18 | (15,885,796) | 6 | (2,993,765) |
| Actuarial Loss | 2018 | 75,214,335 | 18 | 68,790,730 | 6 | 12,963,989 |
| Assumption Change | 2018 | (6,017,706) | 18 | (5,503,770) | 6 | (1,037,215) |
| Actuarial Loss | 2019 | 8,869,944 | 18 | 8,323,710 | 14 | 769,092 |
| Method Change | 2019 | (9,431,611) | 18 | (8,850,789) | 14 | (817,792) |

1 Effective with the December 31, 2021 valuation, portions of all amortization bases from Cost Groups 1 and 2 established before December 31, 2021 were allocated to East Fire and moved into Cost Group 5 in conjunction with the annexation.
2 Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
3 As of middle of year.
4 Effective with the December 31, 2013 valuation, the leave cashout assumptions were reduced to reflect AB 197.

| Amortization Base Type | Established December 31 | Initial Amount[1] | Initial Period | Outstanding Balance | Years Remaining[2] | Annual Payment[3] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2020 | $34,716,218 | 18 | $33,259,775 | 15 | $2,915,509 |
| Actuarial Gain | 2021 | (29,835,340) | 18 | (29,054,916) | 16 | (2,426,820) |
| Assumption Change | 2021 | 114,962,352 | 18 | 111,955,200 | 16 | 9,351,091 |
| Actuarial Loss | 2022 | 200,508,908 | 18 | 198,201,960 | 17 | 15,834,454 |
| Actuarial Loss | 2023 | 88,646,768 | 18 | 88,646,768 | 18 | 6,796,653 |
| **Subtotal – Cost Groups 1 and 2** | | | | **$563,659,811** | | **$75,478,822** |

**Note:** Results may be slightly off due to rounding.

1 Effective with the December 31, 2021 valuation, portions of all amortization bases from Cost Groups 1 and 2 established before December 31, 2021 were allocated to East Fire and moved into Cost Group 5 in conjunction with the annexation.
2 Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
3 As of middle of year.

## Cost Group 3 – Central Contra Costa Sanitary District

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining | Annual Payment[1] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2022 | $4,915,384 | 18 | $4,858,830 | 17 | $388,174 |
| Actuarial Loss[2] | 2023 | 8,520,321 | 18 | 8,520,321 | 18 | 653,263 |
| **Subtotal – Cost Group 3** | | | | **$13,379,151** | | **$1,041,437** |

[1] As of middle of year.

[2] The actuarial loss is primarily due to an investment return on the valuation value of assets (i.e. after asset smoothing) less than the 6.75% assumed rate for a loss of about $7 million and individual salary increases greater than expected for a loss of about $2 million.

## Cost Group 4 – Contra Costa Housing Authority

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2008 | $1,573,513 | 18 | $569,621 | 3 | $203,776 |
| Actuarial Loss | 2009 | 1,277,079 | 18 | 581,627 | 4 | 158,810 |
| Assumption Change | 2009 | 425,000 | 18 | 193,560 | 4 | 52,850 |
| Depooling Implementation | 2009 | (189,275) | 18 | (86,203) | 4 | (23,537) |
| Actuarial Loss | 2010 | 619,697 | 18 | 332,974 | 5 | 74,010 |
| Assumption Change[3] | 2010 | (920,656) | 18 | (494,684) | 5 | (109,953) |
| Actuarial Loss | 2011 | 1,059,328 | 18 | 644,726 | 6 | 121,502 |
| Actuarial Loss | 2012 | 1,912,999 | 18 | 1,282,267 | 6 | 241,650 |
| Assumption Change | 2012 | 3,722,862 | 18 | 2,495,403 | 6 | 470,272 |
| Actuarial Gain | 2013 | (2,220,704) | 18 | (1,611,367) | 6 | (303,671) |
| Assumption Change[4] | 2013 | (1,077,289) | 18 | (781,693) | 6 | (147,314) |
| Actuarial Gain | 2014 | (1,360,021) | 18 | (1,051,682) | 6 | (198,195) |
| Actuarial Gain | 2015 | (875,294) | 18 | (712,471) | 6 | (134,269) |
| Assumption Change | 2015 | 432,801 | 18 | 352,291 | 6 | 66,391 |
| Actuarial Gain | 2016 | (297,092) | 18 | (253,362) | 6 | (47,748) |
| Actuarial Loss | 2017 | 53,895 | 18 | 47,762 | 6 | 9,001 |
| Actuarial Loss | 2018 | 527,741 | 18 | 482,670 | 6 | 90,962 |
| Assumption Change | 2018 | 86,577 | 18 | 79,183 | 6 | 14,922 |
| Actuarial Loss | 2019 | 544,467 | 18 | 510,937 | 14 | 47,209 |
| Method Change | 2019 | (103,353) | 18 | (96,988) | 14 | (8,961) |

1 Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
2 As of middle of year.
3 Effective with the December 31, 2010 valuation, leave cashout (terminal pay) assumptions are now based on cost groups.
4 Effective with the December 31, 2013 valuation, the leave cashout assumptions were reduced to reflect AB 197.

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2020 | $80,685 | 18 | $77,300 | 15 | $6,776 |
| Actuarial Gain | 2021 | (439,350) | 18 | (427,858) | 16 | (35,737) |
| Assumption Change | 2021 | 1,519,858 | 18 | 1,480,102 | 16 | 123,626 |
| Actuarial Loss | 2022 | 2,604,379 | 18 | 2,574,415 | 17 | 205,671 |
| Actuarial Loss | 2023 | 237,770 | 18 | 237,770 | 18 | 18,230 |
| **Subtotal – Cost Group 4** | | | | **$6,426,300** | | **$896,273** |

**Note:** Results may be slightly off due to rounding.

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.

## Cost Group 5 – Contra Costa County Fire Protection District

| Amortization Base Type | Established December 31 | Initial Amount[1] | Initial Period | Outstanding Balance | Years Remaining[2] | Annual Payment[3] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2008 | $98,825 | 18 | $35,775 | 3 | $12,798 |
| Actuarial Loss | 2009 | 1,723,190 | 18 | 784,802 | 4 | 214,285 |
| Assumption Change | 2009 | 362,132 | 18 | 164,928 | 4 | 45,032 |
| Depooling Implementation | 2009 | 2,093,197 | 18 | 953,317 | 4 | 260,297 |
| Actuarial Loss | 2010 | 2,823,409 | 18 | 1,517,066 | 5 | 337,197 |
| Actuarial Loss | 2011 | 1,413,203 | 18 | 860,100 | 6 | 162,091 |
| Actuarial Loss | 2012 | 1,864,724 | 18 | 1,249,909 | 6 | 235,552 |
| Assumption Change | 2012 | 3,374,927 | 18 | 2,262,185 | 6 | 426,321 |
| Actuarial Gain | 2013 | (2,589,708) | 18 | (1,879,120) | 6 | (354,131) |
| Assumption Change[4] | 2013 | (1,056,692) | 18 | (766,747) | 6 | (144,498) |
| Actuarial Gain | 2014 | (2,329,297) | 18 | (1,801,208) | 6 | (339,447) |
| Actuarial Gain | 2015 | (825,906) | 18 | (672,270) | 6 | (126,693) |
| Assumption Change | 2015 | 382,244 | 18 | 311,139 | 6 | 58,636 |
| Actuarial Loss | 2016 | 1,572,498 | 18 | 1,341,039 | 6 | 252,726 |
| Actuarial Loss | 2017 | 1,464,466 | 18 | 1,297,806 | 6 | 244,579 |
| Actuarial Loss | 2018 | 1,545,142 | 18 | 1,413,181 | 6 | 266,322 |
| Assumption Change | 2018 | 602,943 | 18 | 551,449 | 6 | 103,924 |
| Actuarial Loss | 2019 | 1,838,915 | 18 | 1,725,670 | 14 | 159,448 |
| Method Change | 2019 | (872,975) | 18 | (819,215) | 14 | (75,694) |

1 Effective with the December 31, 2021 valuation, portions of all amortization bases from Cost Groups 1 and 2 established before December 31, 2021 were allocated to East Fire and moved into Cost Group 5 in conjunction with the annexation.
2 Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
3 As of middle of year.
4 Effective with the December 31, 2013 valuation, the leave cashout assumptions were reduced to reflect AB 197.

| Amortization Base Type | Established December 31 | Initial Amount[1] | Initial Period | Outstanding Balance | Years Remaining[2] | Annual Payment[3] |
|---|---|---|---|---|---|---|
| UAAL Prepayment | 2020 | $(181,746) | 18 | $(174,121) | 15 | $(15,263) |
| Actuarial Loss | 2020 | 2,595,831 | 18 | 2,486,929 | 15 | 218,001 |
| Actuarial Gain | 2021 | (1,811,591) | 18 | (1,764,204) | 16 | (147,356) |
| Assumption Change | 2021 | 1,486,425 | 18 | 1,447,544 | 16 | 120,906 |
| Actuarial Loss | 2022 | 2,541,827 | 18 | 2,512,582 | 17 | 200,731 |
| Actuarial Loss | 2023 | 988,814 | 18 | 988,814 | 18 | 75,814 |
| **Subtotal – Cost Group 5** | | | | **$14,027,349** | | **$2,191,578** |

**Note:** Results may be slightly off due to rounding.

[1] Effective with the December 31, 2021 valuation, portions of all amortization bases from Cost Groups 1 and 2 established before December 31, 2021 were allocated to East Fire and moved into Cost Group 5 in conjunction with the annexation.
[2] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[3] As of middle of year.

## Cost Group 6 – Small Districts (General Non-Enhanced)

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining | Annual Payment[1] |
|---|---|---|---|---|---|---|
| Actuarial Surplus[2] | 2023 | $(318,537) | | $(318,537) | N/A | $0 |
| **Subtotal – Cost Group 6** | | | | **$(318,537)** | | **$0** |

[1] As of middle of year.
[2] Consistent with CCCERA's Actuarial Funding Policy, all prior UAAL layers are considered fully amortized due to surplus.

## Cost Groups 7 and 9 – County Safety

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2008 | $25,619,265 | 18 | $9,274,332 | 3 | $3,317,798 |
| Actuarial Loss | 2009 | 55,134,940 | 18 | 25,110,427 | 4 | 6,856,240 |
| Assumption Change | 2009 | 11,076,665 | 18 | 5,044,710 | 4 | 1,377,426 |
| Depooling Implementation | 2009 | 23,852,078 | 18 | 10,863,091 | 4 | 2,966,097 |
| Actuarial Loss | 2010 | 57,287,975 | 18 | 30,781,804 | 5 | 6,841,843 |
| Actuarial Loss | 2011 | 45,209,350 | 18 | 27,515,219 | 6 | 5,185,393 |
| Actuarial Loss | 2012 | 53,258,503 | 18 | 35,698,731 | 6 | 6,727,621 |
| Assumption Change | 2012 | 138,353,562 | 18 | 92,737,241 | 6 | 17,476,840 |
| Actuarial Gain | 2013 | (35,024,912) | 18 | (25,414,464) | 6 | (4,789,495) |
| Assumption Change[3] | 2013 | (43,771,706) | 18 | (31,761,234) | 6 | (5,985,578) |
| Actuarial Gain | 2014 | (61,815,393) | 18 | (47,800,845) | 6 | (9,008,330) |
| Assumption Change[4] | 2014 | (51,701) | 18 | (39,979) | 6 | (7,534) |
| Actuarial Gain | 2015 | (58,489,966) | 18 | (47,609,622) | 6 | (8,972,293) |
| Assumption Change | 2015 | 39,291,409 | 18 | 31,982,394 | 6 | 6,027,257 |
| Actuarial Gain | 2016 | (13,557,811) | 18 | (11,562,209) | 6 | (2,178,961) |
| Actuarial Gain | 2017 | (8,178,240) | 18 | (7,247,539) | 6 | (1,365,838) |
| Actuarial Loss | 2018 | 41,037,406 | 18 | 37,532,647 | 6 | 7,073,232 |
| Assumption Change | 2018 | (47,713,599) | 18 | (43,638,667) | 6 | (8,223,945) |
| Actuarial Loss | 2019 | 10,313,187 | 18 | 9,678,075 | 14 | 894,232 |
| Method Change | 2019 | (1,626,137) | 18 | (1,525,995) | 14 | (140,998) |

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.
[3] Effective with the December 31, 2013 valuation, the leave cashout assumptions were reduced to reflect AB 197.
[4] Effective with the December 31, 2014 valuation, leave cashout (terminal pay) assumptions were eliminated for Cost Group 9.

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2020 | $5,352,140 | 18 | $5,127,602 | 15 | $449,479 |
| Actuarial Gain | 2021 | (9,006,255) | 18 | (8,770,672) | 16 | (732,573) |
| Assumption Change | 2021 | 58,980,022 | 18 | 57,437,240 | 16 | 4,797,462 |
| Actuarial Loss | 2022 | 72,120,444 | 18 | 71,290,665 | 17 | 5,695,447 |
| Actuarial Loss | 2023 | 25,063,417 | 18 | 25,063,417 | 18 | 1,921,642 |
| **Subtotal – Cost Groups 7 and 9** | | | | **$249,766,369** | | **$36,202,464** |

**Note:** Results may be slightly off due to rounding.

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.

## Cost Group 8 – Contra Costa Fire Protection District

| Amortization Base Type | Established December 31 | Initial Amount[1] | Initial Period | Outstanding Balance | Years Remaining[2] | Annual Payment[3] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2008 | $6,780,436 | 18 | $2,454,560 | 3 | $878,094 |
| Actuarial Loss | 2009 | 27,018,706 | 18 | 12,305,287 | 4 | 3,359,879 |
| Assumption Change | 2009 | 4,945,000 | 18 | 2,252,130 | 4 | 614,930 |
| Depooling Implementation | 2009 | 47,818,666 | 18 | 21,778,334 | 4 | 5,946,433 |
| Actuarial Loss | 2010 | 38,165,445 | 18 | 20,506,943 | 5 | 4,558,059 |
| Assumption Change[4] | 2010 | (1,599,051) | 18 | (859,197) | 5 | (190,973) |
| Actuarial Loss | 2011 | 26,533,166 | 18 | 16,148,559 | 6 | 3,043,284 |
| Actuarial Loss | 2012 | 31,501,440 | 18 | 21,115,153 | 6 | 3,979,266 |
| Assumption Change | 2012 | 68,193,356 | 18 | 45,709,439 | 6 | 8,614,193 |
| Actuarial Gain | 2013 | (22,661,640) | 18 | (16,443,537) | 6 | (3,098,874) |
| Assumption Change[5] | 2013 | (17,910,676) | 18 | (12,996,184) | 6 | (2,449,202) |
| Actuarial Gain | 2014 | (29,217,962) | 18 | (22,593,778) | 6 | (4,257,921) |
| Actuarial Gain | 2015 | (19,005,510) | 18 | (15,470,092) | 6 | (2,915,423) |
| Assumption Change | 2015 | 24,296,846 | 18 | 19,777,130 | 6 | 3,727,108 |
| Actuarial Gain | 2016 | (8,297,685) | 18 | (7,076,332) | 6 | (1,333,573) |
| Actuarial Gain | 2017 | (10,658,502) | 18 | (9,445,541) | 6 | (1,780,064) |
| Actuarial Loss | 2018 | 19,301,243 | 18 | 17,652,840 | 6 | 3,326,774 |
| Assumption Change | 2018 | (23,503,820) | 18 | (21,496,500) | 6 | (4,051,133) |

1 Effective with the December 31, 2019 valuation, East Fire was depooled into Cost Group 13, previously East Fire was pooled with Con Fire in Cost Group 8. All amortization bases established on or before December 31, 2018 were split between the two employers based on the ratios of actuarial accrued liability as of December 31, 2018.
Effective with the December 31, 2021 valuation, East Fire was annexed into Con Fire, and all amortization bases from Cost Group 13 established before December 31, 2021 were moved into Cost Group 8.

2 Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.

3 As of middle of year.

4 Effective with the December 31, 2010 valuation, leave cashout (terminal pay) assumptions are now based on cost groups.

5 Effective with the December 31, 2013 valuation, the leave cashout assumptions were reduced to reflect AB 197.

| Amortization Base Type | Established December 31 | Initial Amount[1] | Initial Period | Outstanding Balance | Years Remaining[2] | Annual Payment[3] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2019 | $11,258,256 | 18 | $10,564,944 | 14 | $976,176 |
| Method Change | 2019 | (3,057,179) | 18 | (2,868,910) | 14 | (265,081) |
| Actuarial Gain | 2020 | (5,495,306) | 18 | (5,264,763) | 15 | (461,502) |
| UAAL Prepayment | 2020 | (2,839,926) | 18 | (2,720,783) | 15 | (238,500) |
| Actuarial Loss | 2021 | 7,016,144 | 18 | 6,832,618 | 16 | 570,696 |
| Assumption Change | 2021 | 25,946,537 | 18 | 25,267,835 | 16 | 2,110,503 |
| Actuarial Loss | 2022 | 32,208,479 | 18 | 31,837,906 | 17 | 2,543,546 |
| Actuarial Loss | 2023 | 21,411,096 | 18 | 21,411,096 | 18 | 1,641,614 |
| **Subtotal – Cost Group 8** | | | | **$158,379,155** | | **$24,848,309** |

**Note:** Results may be slightly off due to rounding.

[1] Effective with the December 31, 2019 valuation, East Fire was depooled into Cost Group 13, previously East Fire was pooled with Con Fire in Cost Group 8. All amortization bases established on or before December 31, 2018 were split between the two employers based on the ratios of actuarial accrued liability as of December 31, 2018.
Effective with the December 31, 2021 valuation, East Fire was annexed into Con Fire, and all amortization bases from Cost Group 13 established before December 31, 2021 were moved into Cost Group 8.

[2] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.

[3] As of middle of year.

## Cost Group 10 – Moraga-Orinda Fire District

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2008 | $2,002,150 | 18 | $724,791 | 3 | $259,287 |
| Actuarial Loss | 2009 | 5,671,684 | 18 | 2,583,088 | 4 | 705,296 |
| Assumption Change | 2009 | 1,012,000 | 18 | 460,901 | 4 | 125,846 |
| Depooling Implementation | 2009 | 4,873,631 | 18 | 2,219,626 | 4 | 606,055 |
| Actuarial Loss | 2010 | 5,334,964 | 18 | 2,866,567 | 5 | 637,149 |
| Assumption Change[3] | 2010 | 806,018 | 18 | 433,087 | 5 | 96,262 |
| Actuarial Loss | 2011 | 6,791,005 | 18 | 4,133,127 | 6 | 778,910 |
| Actuarial Loss | 2012 | 8,924,598 | 18 | 5,982,084 | 6 | 1,127,356 |
| Assumption Change | 2012 | 12,149,892 | 18 | 8,143,971 | 6 | 1,534,776 |
| Actuarial Gain | 2013 | (1,027,440) | 18 | (745,522) | 6 | (140,498) |
| Assumption Change[4] | 2013 | (3,613,981) | 18 | (2,622,345) | 6 | (494,195) |
| Actuarial Gain | 2014 | (4,813,045) | 18 | (3,721,850) | 6 | (701,403) |
| Actuarial Gain | 2015 | (8,490,806) | 18 | (6,911,340) | 6 | (1,302,480) |
| Assumption Change | 2015 | 3,844,347 | 18 | 3,129,219 | 6 | 589,718 |
| Actuarial Loss | 2016 | 1,028,690 | 18 | 877,275 | 6 | 165,327 |
| Actuarial Gain | 2017 | (422,995) | 18 | (374,857) | 6 | (70,644) |
| Actuarial Loss | 2018 | 6,029,055 | 18 | 5,514,150 | 6 | 1,039,172 |
| Assumption Change | 2018 | (4,116,542) | 18 | (3,764,973) | 6 | (709,530) |
| Actuarial Loss | 2019 | 3,411,399 | 18 | 3,201,316 | 14 | 295,794 |
| Method Change | 2019 | (471,164) | 18 | (442,149) | 14 | (40,854) |

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.
[3] Effective with the December 31, 2010 valuation, leave cashout (terminal pay) assumptions are now based on cost groups.
[4] Effective with the December 31, 2013 valuation, the leave cashout assumptions were reduced to reflect AB 197.

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Gain | 2020 | $(864,383) | 18 | $(828,120) | 15 | $(72,592) |
| Actuarial Loss | 2021 | 2,537,586 | 18 | 2,471,208 | 16 | 206,408 |
| Assumption Change | 2021 | 5,301,507 | 18 | 5,162,832 | 16 | 431,227 |
| Actuarial Loss | 2022 | 7,121,589 | 18 | 7,039,652 | 17 | 562,401 |
| Actuarial Loss | 2023 | 3,220,166 | 18 | 3,220,166 | 18 | 246,894 |
| **Subtotal – Cost Group 10** | | | | **$38,751,905** | | **$5,875,682** |

**Note:** Results may be slightly off due to rounding.

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.

## Cost Group 11 – San Ramon Valley Fire District

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2008 | $10,216,694 | 18 | $3,698,506 | 3 | $1,323,103 |
| Actuarial Loss | 2009 | 9,262,105 | 18 | 4,218,294 | 4 | 1,151,778 |
| Assumption Change | 2009 | 2,453,000 | 18 | 1,117,184 | 4 | 305,040 |
| Depooling Implementation | 2009 | (20,174,500) | 18 | (9,188,190) | 4 | (2,508,776) |
| Actuarial Loss | 2010 | 6,585,812 | 18 | 3,538,669 | 5 | 786,537 |
| Assumption Change[3] | 2010 | 5,093,420 | 18 | 2,736,781 | 5 | 608,302 |
| Actuarial Loss | 2011 | 5,513,071 | 18 | 3,355,354 | 6 | 632,335 |
| Actuarial Loss | 2012 | 14,600,741 | 18 | 9,786,755 | 6 | 1,844,368 |
| Assumption Change | 2012 | 26,672,143 | 18 | 17,878,115 | 6 | 3,369,229 |
| Actuarial Gain | 2013 | (4,492,900) | 18 | (3,260,098) | 6 | (614,383) |
| Assumption Change[4] | 2013 | (12,984,002) | 18 | (9,421,335) | 6 | (1,775,502) |
| Actuarial Gain | 2014 | (13,850,852) | 18 | (10,710,640) | 6 | (2,018,479) |
| Actuarial Gain | 2015 | (9,008,582) | 18 | (7,332,799) | 6 | (1,381,906) |
| Assumption Change | 2015 | 5,533,144 | 18 | 4,503,865 | 6 | 848,778 |
| Actuarial Loss | 2016 | 2,020,042 | 18 | 1,722,708 | 6 | 324,654 |
| UAAL Prepayment | 2017 | (303,806) | 18 | (269,232) | 6 | (50,738) |
| Actuarial Gain | 2017 | (1,837,378) | 18 | (1,628,280) | 6 | (306,858) |
| UAAL Prepayment | 2018 | (261,501) | 18 | (239,168) | 6 | (45,072) |
| Actuarial Loss | 2018 | 11,681,729 | 18 | 10,684,062 | 6 | 2,013,470 |
| Assumption Change | 2018 | (9,240,163) | 18 | (8,451,016) | 6 | (1,592,640) |

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.
[3] Effective with the December 31, 2010 valuation, leave cashout (terminal pay) assumptions are now based on cost groups.
[4] Effective with the December 31, 2013 valuation, the leave cashout assumptions were reduced to reflect AB 197.

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| UAAL Prepayment | 2019 | $(1,267,559) | 18 | $(1,189,500) | 14 | $(109,907) |
| Actuarial Loss | 2019 | 5,365,395 | 18 | 5,034,981 | 14 | 465,221 |
| Method Change | 2019 | (1,623,299) | 18 | (1,523,332) | 14 | (140,752) |
| UAAL Prepayment | 2020 | (267,529) | 18 | (256,305) | 15 | (22,467) |
| Actuarial Gain | 2020 | (60,980) | 18 | (58,421) | 15 | (5,121) |
| UAAL Prepayment | 2021 | (270,666) | 18 | (263,586) | 16 | (22,016) |
| Actuarial Loss | 2021 | 2,230,205 | 18 | 2,171,868 | 16 | 181,406 |
| Assumption Change | 2021 | 13,908,945 | 18 | 13,545,119 | 16 | 1,131,360 |
| UAAL Prepayment | 2022 | (286,847) | 18 | (283,547) | 17 | (22,653) |
| Actuarial Loss | 2022 | 17,272,835 | 18 | 17,074,103 | 17 | 1,364,059 |
| UAAL Prepayment | 2023 | (295,995) | 18 | (295,995) | 18 | (22,694) |
| Actuarial Loss | 2023 | 5,325,133 | 18 | 5,325,133 | 18 | 408,284 |
| **Subtotal – Cost Group 11** | | | | **$52,020,053** | | **$6,117,960** |

**Note:** Results may be slightly off due to rounding.

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.

## Cost Group 12 – Rodeo-Hercules Fire Protection District

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2008 | $957,150 | 18 | $346,494 | 3 | $123,955 |
| Actuarial Loss | 2009 | 2,872,360 | 18 | 1,308,176 | 4 | 357,189 |
| Assumption Change | 2009 | 1,154,000 | 18 | 525,573 | 4 | 143,504 |
| Depooling Implementation | 2009 | (1,809,374) | 18 | (824,054) | 4 | (225,003) |
| Actuarial Loss | 2010 | 1,502,503 | 18 | 807,321 | 5 | 179,442 |
| Assumption Change[3] | 2010 | 662,085 | 18 | 355,750 | 5 | 79,072 |
| Actuarial Loss | 2011 | 2,067,217 | 18 | 1,258,145 | 6 | 237,104 |
| Actuarial Loss | 2012 | 2,246,131 | 18 | 1,505,563 | 6 | 283,731 |
| Assumption Change | 2012 | 3,018,796 | 18 | 2,023,474 | 6 | 381,335 |
| Actuarial Loss | 2013 | 413,088 | 18 | 299,741 | 6 | 56,488 |
| Assumption Change[4] | 2013 | (1,169,821) | 18 | (848,835) | 6 | (159,968) |
| Actuarial Loss | 2014 | 315,937 | 18 | 244,309 | 6 | 46,041 |
| Actuarial Gain | 2015 | (990,379) | 18 | (806,148) | 6 | (151,923) |
| Assumption Change | 2015 | 775,874 | 18 | 631,545 | 6 | 119,018 |
| Actuarial Gain | 2016 | (270,731) | 18 | (230,882) | 6 | (43,511) |
| Actuarial Gain | 2017 | (836,969) | 18 | (741,720) | 6 | (139,781) |
| Actuarial Gain | 2018 | (71,915) | 18 | (65,773) | 6 | (12,395) |
| Assumption Change | 2018 | (986,829) | 18 | (902,550) | 6 | (170,090) |
| Actuarial Loss | 2019 | 146,468 | 18 | 137,448 | 14 | 12,700 |
| Method Change | 2019 | (241,485) | 18 | (226,614) | 14 | (20,939) |

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.
[3] Effective with the December 31, 2010 valuation, leave cashout (terminal pay) assumptions are now based on cost groups.
[4] Effective with the December 31, 2013 valuation, the leave cashout assumptions were reduced to reflect AB 197.

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| Actuarial Loss | 2020 | $179,608 | 18 | $172,073 | 15 | $15,084 |
| Actuarial Loss | 2021 | 744,297 | 18 | 724,828 | 16 | 60,541 |
| Assumption Change | 2021 | 1,416,650 | 18 | 1,379,594 | 16 | 115,231 |
| Actuarial Loss | 2022 | 2,600,757 | 18 | 2,570,834 | 17 | 205,385 |
| Actuarial Loss | 2023 | 645,435 | 18 | 645,435 | 18 | 49,486 |
| **Subtotal – Cost Group 12** | | | | **$10,289,726** | | **$1,541,696** |

**Note:** Results may be slightly off due to rounding.

[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year.

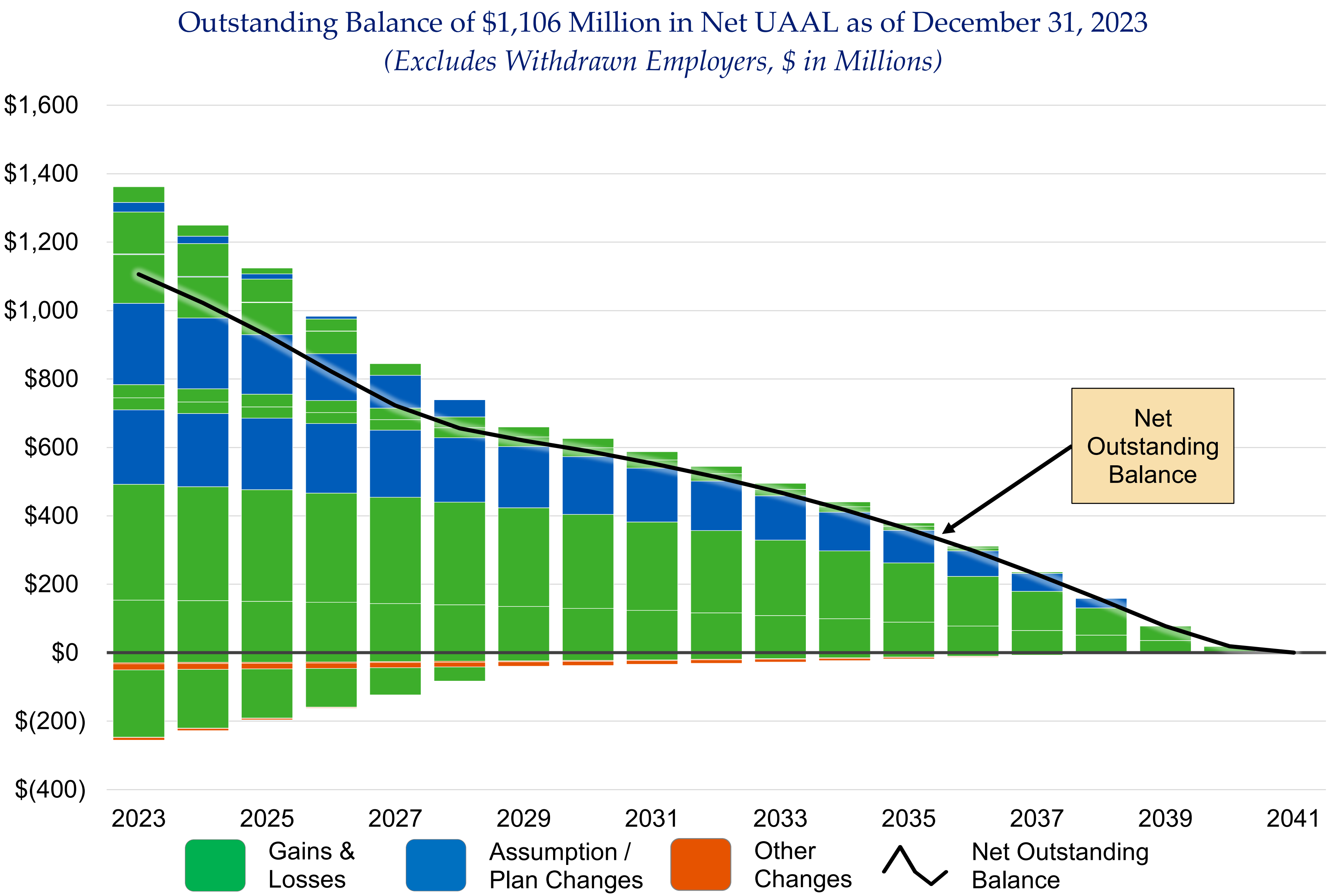
## Special Adjustments

| Amortization Base Type | Established December 31 | Initial Amount | Initial Period | Outstanding Balance | Years Remaining[1] | Annual Payment[2] |
|---|---|---|---|---|---|---|
| LAFCO UAAL Prepayment | 2017 | $(30,817) | 18 | $(27,310) | 6 | $(5,147) |
| LAFCO UAAL Prepayment | 2019 | (31,680) | 18 | (29,729) | 14 | (2,747) |
| LAFCO UAAL Prepayment | 2020 | (31,963) | 18 | (30,622) | 15 | (2,684) |
| LAFCO UAAL Prepayment | 2021 | (31,804) | 18 | (30,972) | 16 | (2,587) |
| IHSS UAAL Prepayment | 2023 | (92,497) | 18 | (92,497) | 18 | (7,092) |
| **Subtotal – Special Adjustments** | | | | **$(211,130)** | | **$(20,257)** |

**Note:** Results may be slightly off due to rounding.

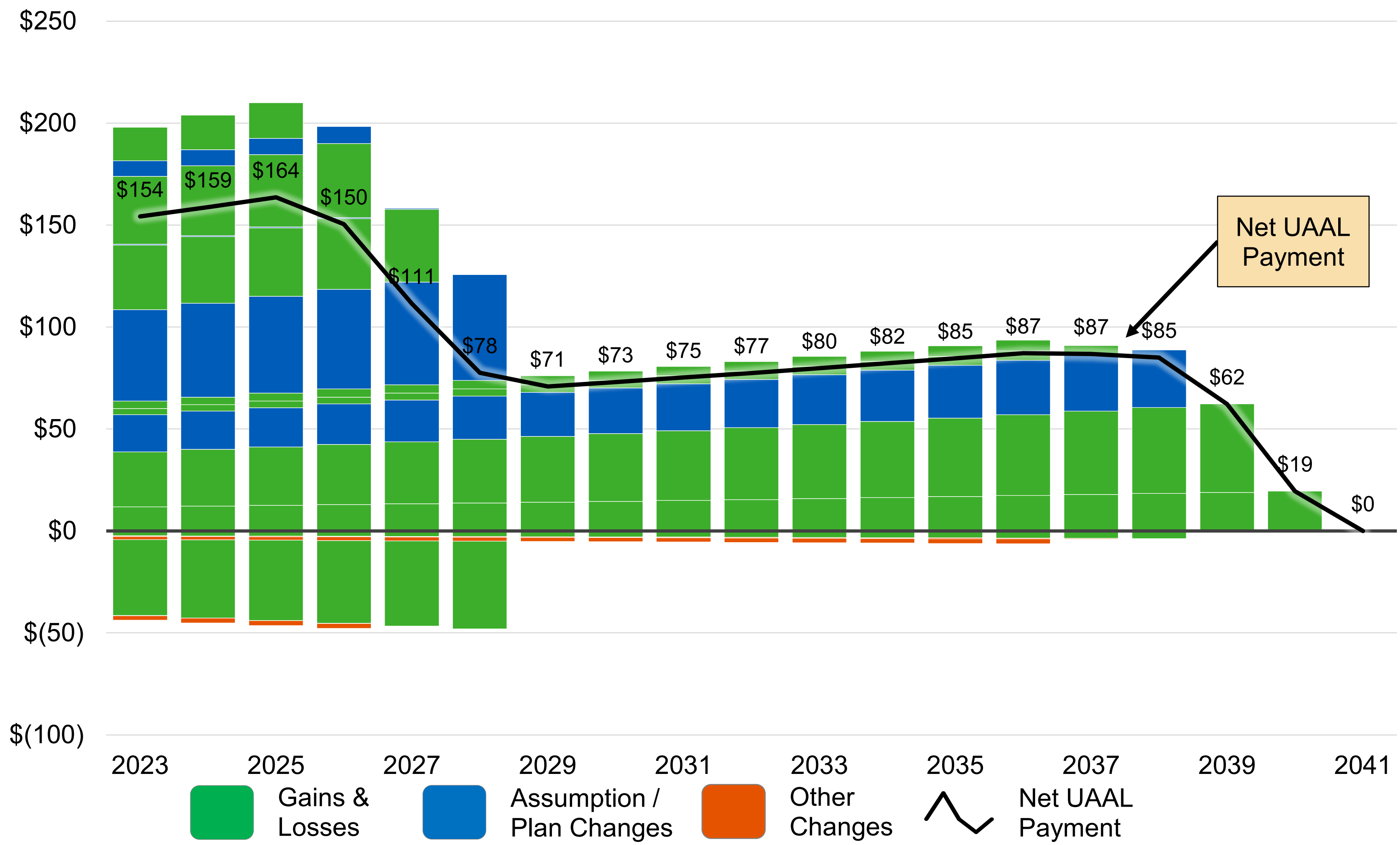
[1] Reflects the adjustment to UAAL amortization periods adopted by the Board in 2023 for amortization layers established between December 31, 2012 and December 31, 2018.
[2] As of middle of year. The annual payment amounts shown for the Special Adjustments represent the credit allocated to the employer to reflect special contributions. These adjustments serve to reduce the UAAL contribution rate for these employers.

## Exhibit I: Projection of UAAL balances and payments



## Annual Payments Required to Amortize $1,106 Million in Net UAAL as of December 31, 2023

*(Excludes Withdrawn Employers, $ in Millions)*



# Section 4: Actuarial Valuation Basis

## Exhibit 1: Actuarial assumptions, methods and models

### Rationale for assumptions

The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the January 1, 2018 through December 31, 2020 Actuarial Experience Study report dated April 5, 2022. Unless otherwise noted, all actuarial assumptions and methods shown below apply to all tiers. These assumptions were adopted by the Board.

### Net investment return

6.75%; net of investment expenses.

Based on the Actuarial Experience Study referenced above, expected investment expenses represent about 0.60% of the actuarial value of assets.

### Administrative expenses

1.17% of payroll allocated between the employer and member based on normal cost (before expenses) for the employer and member. This assumption is subject to change each year based on the actual administrative expenses as a percent of actual covered payroll during the calendar year ending on the valuation date.

For the 2023 calendar year, actual administrative expenses were $12,839,955 and actual covered payroll was $1,093,972,642. This results in an administrative expense assumption of 1.17% of payroll, allocated between the employer and member as shown below:

#### Allocation of Administrative Expense Load Between Employer and Member

| Line Description | Average Normal Cost Before Expenses | Weighting for Administrative Expense | Administrative Expense Load |
|---|---|---|---|
| Employer | 14.55% | 55.62% | 0.65% |
| Member | 11.61% | 44.38% | 0.52% |
| **Total** | **26.16%** | **100.00%** | **1.17%** |

The basic member rate is increased by the administrative expense allocated to the member. The employer normal cost rate is increased by the same percent of payroll as the basic member rate, while the remaining administrative expense allocated to the employer is used to increase the employer UAAL rate. This methodology is used to maintain a 50:50 sharing of normal cost for those in the PEPRA tiers. The table below shows this allocation.

### Allocation of Administrative Expense Load to Contribution Rate Components
*(% of Payroll)*

| Contribution Rate Component | Administrative Expense Load |
|---|---|
| Employer basic normal cost rate | 0.52% |
| Employer basic UAAL rate | 0.13% |
| Member basic rate | 0.52% |
| **Total administrative expense load** | **1.17%** |

## Member contribution crediting rate

6.75%, compounded semi-annually.

## Inflation rate

Increases of 2.50% per year.

## Cost of Living Adjustment (COLA)

Increases of 2.75% per year.

- The actual COLA granted by CCCERA on April 1, 2024 has been reflected for non-active members in the December 31, 2023 valuation.
- For members that have COLA banks, the COLA banks have been reflected in projected future COLAs.
- Benefits are subject to a maximum COLA per year, which varies based on the member’s tier and retirement type.

### Maximum COLA

| General Membership Tier | Safety Membership Tier | Maximum COLA Per Year | COLA Valued (Before Application of COLA Banks) |
|---|---|---|---|
| • Tier 1<br>• Tier 3 (non-disability)<br>• Tier 4<br>• Tier 5 (non-disability) | • Tier A<br>• Tier D | 3.00% | 2.75% |
| • Tier 2<br>• Tier 3 (disability)<br>• Tier 5 (disability) | • N/A | 4.00% | 2.75% |
| • Tier 4 and Tier 5 members covered under certain MOUs | • Tier C<br>• Tier E | 2.00% | 2.00% |

## Payroll growth

Inflation of 2.50% per year plus “across-the-board” salary increase of 0.50% per year.

The payroll growth assumption is used to amortize the unfunded actuarial accrued liability as a level percentage of payroll.

## Increase in Internal Revenue Code Section 401(a)(17) compensation limit

Increase of 2.50% per year from the valuation date.

## Increase in Section 7522.10 compensation limit

Increase of 2.50% per year from the valuation date.

## Salary increases

The annual rate of compensation increase includes:

- Inflation at 2.50%, plus
- "Across-the-board" salary increase of 0.50% per year, plus
- Merit and promotion increase based on years of service:

### Merit and Promotion Increases (%)

| Years of Service | General | Safety |
|---|---|---|
| Less than 1 | 11.00 | 12.00 |
| 1–2 | 6.50 | 8.50 |
| 2–3 | 4.75 | 5.50 |
| 3–4 | 3.50 | 5.00 |
| 4–5 | 2.50 | 4.00 |
| 5–6 | 2.00 | 3.00 |
| 6–7 | 1.75 | 2.25 |
| 7–8 | 1.65 | 1.75 |
| 8–9 | 1.45 | 1.50 |
| 9–10 | 1.35 | 1.45 |
| 10–11 | 1.30 | 1.40 |
| 11–12 | 1.10 | 1.35 |
| 12–13 | 1.00 | 1.30 |
| 13–14 | 0.90 | 1.25 |
| 14–15 | 0.80 | 1.25 |
| 15–16 | 0.75 | 1.25 |
| 16–17 | 0.70 | 1.25 |
| 17–18 | 0.65 | 1.25 |
| 18–19 | 0.60 | 1.25 |
| 19–20 | 0.55 | 1.25 |
| 20 and over | 0.50 | 1.00 |

The average total assumed salary increase for active members in the December 31, 2023 actuarial valuation is 4.6%.

## Post-retirement mortality rates

The Pub-2010 mortality tables and adjustments as shown below reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

### Healthy

- **General members**
  - Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2021.
- **Safety members**
  - Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) increased by 5% for males and decreased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2021.

### Disabled

- **General members**
  - Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) increased by 5% for males and unadjusted for females, projected generationally with the two-dimensional mortality improvement scale MP-2021.
- **Safety members**
  - Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) increased by 5% for males and unadjusted for females, projected generationally with the two-dimensional mortality improvement scale MP-2021.

### Beneficiary

- **Beneficiaries not currently in pay status**
  - Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2021.

- **Beneficiaries in pay status**
  - Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) increased by 5% for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2021.

## Pre-retirement mortality rates

- **General members**
  - Pub-2010 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2021.
- **Safety members**
  - Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2021.

### Pre-Retirement Mortality Rates (%) — Before Generational Projection from 2010

| Age | General Male | General Female | Safety Male | Safety Female |
|---|---|---|---|---|
| 20 | 0.04 | 0.01 | 0.04 | 0.02 |
| 25 | 0.02 | 0.01 | 0.03 | 0.02 |
| 30 | 0.03 | 0.01 | 0.04 | 0.02 |
| 35 | 0.04 | 0.02 | 0.04 | 0.03 |
| 40 | 0.06 | 0.03 | 0.05 | 0.04 |
| 45 | 0.09 | 0.05 | 0.07 | 0.06 |
| 50 | 0.13 | 0.08 | 0.10 | 0.08 |
| 55 | 0.19 | 0.11 | 0.15 | 0.11 |
| 60 | 0.28 | 0.17 | 0.23 | 0.14 |
| 65 | 0.41 | 0.27 | 0.35 | 0.20 |
| 70 | 0.61 | 0.44 | 0.66 | 0.39 |

All pre-retirement deaths are assumed to be non-service-connected related.

## Mortality rates for member contributions[1]

- **General Members**
  - Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected 30 years with the two-dimensional mortality improvement scale MP-2021, weighted 30% male and 70% female.
- **Safety Members**
  - Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) increased by 5% for males and decreased by 5% for females, projected 30 years with the two-dimensional mortality improvement scale MP-2021, weighted 85% male and 15% female.

## Disability

### Disability Incidence Rates (%)

| Age | General Tier 1 and Tier 4 | General Tier 3 and Tier 5 | Safety |
|---|---|---|---|
| 20 | 0.01 | 0.01 | 0.06 |
| 25 | 0.02 | 0.02 | 0.16 |
| 30 | 0.04 | 0.03 | 0.32 |
| 35 | 0.08 | 0.05 | 0.46 |
| 40 | 0.22 | 0.07 | 0.56 |
| 45 | 0.36 | 0.09 | 0.96 |
| 50 | 0.52 | 0.12 | 2.88 |
| 55 | 0.60 | 0.16 | 4.00 |
| 60 | 0.60 | 0.18 | 4.30 |
| 65 | 0.60 | 0.18 | 4.50 |
| 70 | 0.60 | 0.18 | 4.50 |

[1] These mortality rates are used for calculating the member basic contribution rates for General Tier 1, Tier 2 and Tier 3, as well as Safety Tier A and Tier C.

## Assumed Percentage of Future Disabled Members Receiving a Service-Connected or Non-Service-Connected Disability

| Membership Tier | Service-Connected Disabilities | Non-Service-Connected Disabilities |
|---|---|---|
| General Tier 1 and Tier 4 | 65% | 35% |
| General Tier 3 and Tier 5 | 25% | 75% |
| Safety | 100% | 0% |

## Termination

### Termination Rates (%)

| Years of Service | General | Safety |
|---|---|---|
| Less than 1 | 14.00 | 11.00 |
| 1–2 | 9.50 | 9.00 |
| 2–3 | 9.00 | 7.00 |
| 3–4 | 6.25 | 5.00 |
| 4–5 | 6.25 | 4.00 |
| 5–6 | 5.00 | 3.50 |
| 6–7 | 4.50 | 3.00 |
| 7–8 | 4.00 | 2.50 |
| 8–9 | 3.75 | 2.50 |
| 9–10 | 3.75 | 2.00 |
| 10–11 | 3.50 | 2.00 |
| 11–12 | 3.25 | 2.00 |
| 12–13 | 2.75 | 2.00 |
| 13–14 | 2.50 | 1.80 |
| 14–15 | 2.50 | 1.60 |
| 15–16 | 2.25 | 1.50 |
| 16–17 | 2.25 | 1.40 |
| 17–18 | 2.00 | 1.30 |
| 18–19 | 2.00 | 1.20 |
| 19–20 | 1.50 | 1.00 |
| 20 and over | 1.50 | 0.50 |

The member is assumed to receive the greater of a refund of member contributions or the present value of a deferred retirement benefit.

No termination is assumed after a member is first assumed to retire.

## Retirement rates

### Retirement Rates (%) — General

| Age | Tier 1 Enhanced: Less than 30 Years of Service | Tier 1 Enhanced: 30 or More Years of Service | Tier 3 Enhanced: Less than 30 Years of Service | Tier 3 Enhanced: 30 or More Years of Service | Tier 1 Non-Enhanced | Tier 4 and Tier 5 |
|---|---|---|---|---|---|---|
| 49 | 0.00 | 0.00 | 0.00 | 25.00 | 0.00 | 0.00 |
| 50 | 4.00 | 10.00 | 4.00 | 10.00 | 3.00 | 0.00 |
| 51 | 4.00 | 10.00 | 3.00 | 5.00 | 3.00 | 0.00 |
| 52 | 4.00 | 10.00 | 3.00 | 5.00 | 3.00 | 2.00 |
| 53 | 4.00 | 10.00 | 4.00 | 5.00 | 3.00 | 3.00 |
| 54 | 10.00 | 16.00 | 6.00 | 11.00 | 3.00 | 3.00 |
| 55 | 15.00 | 24.00 | 8.00 | 15.00 | 10.00 | 4.00 |
| 56 | 15.00 | 24.00 | 8.00 | 10.00 | 10.00 | 5.00 |
| 57 | 15.00 | 24.00 | 8.00 | 10.00 | 10.00 | 6.00 |
| 58 | 15.00 | 22.00 | 9.00 | 15.00 | 10.00 | 6.00 |
| 59 | 18.00 | 22.00 | 10.00 | 15.00 | 10.00 | 8.00 |
| 60 | 20.00 | 20.00 | 12.00 | 15.00 | 25.00 | 8.00 |
| 61 | 20.00 | 20.00 | 16.00 | 20.00 | 15.00 | 12.00 |
| 62 | 25.00 | 30.00 | 20.00 | 25.00 | 40.00 | 15.00 |
| 63 | 25.00 | 30.00 | 20.00 | 25.00 | 35.00 | 17.00 |
| 64 | 25.00 | 30.00 | 25.00 | 28.00 | 30.00 | 20.00 |
| 65 | 35.00 | 35.00 | 30.00 | 32.00 | 40.00 | 25.00 |
| 66 | 40.00 | 40.00 | 32.00 | 32.00 | 35.00 | 25.00 |
| 67 | 40.00 | 40.00 | 30.00 | 30.00 | 35.00 | 25.00 |
| 68 | 40.00 | 40.00 | 30.00 | 30.00 | 35.00 | 25.00 |
| 69 | 40.00 | 40.00 | 30.00 | 30.00 | 35.00 | 25.00 |
| 70 | 40.00 | 40.00 | 35.00 | 35.00 | 40.00 | 35.00 |
| 71 | 35.00 | 35.00 | 35.00 | 35.00 | 40.00 | 35.00 |
| 72 | 35.00 | 35.00 | 35.00 | 35.00 | 40.00 | 35.00 |
| 73 | 35.00 | 35.00 | 35.00 | 35.00 | 50.00 | 35.00 |
| 74 | 35.00 | 35.00 | 35.00 | 35.00 | 50.00 | 35.00 |
| 75 and over | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

### Retirement Rates (%) — Safety

| Age | Tier A Enhanced: Less than 30 Years of Service | Tier A Enhanced: 30 or More Years of Service | Tier C Enhanced | Tier A Non-Enhanced and Tier D and Tier E |
|---|---|---|---|---|
| 45 | 7.00 | 7.00 | 2.00 | 0.00 |
| 46 | 5.00 | 5.00 | 1.00 | 0.00 |
| 47 | 7.00 | 7.00 | 4.00 | 0.00 |
| 48 | 10.00 | 30.00 | 4.00 | 0.00 |
| 49 | 22.00 | 30.00 | 12.00 | 0.00 |
| 50 | 22.00 | 30.00 | 20.00 | 5.00 |
| 51 | 22.00 | 22.00 | 18.00 | 4.00 |
| 52 | 16.00 | 20.00 | 15.00 | 4.00 |
| 53 | 16.00 | 22.00 | 15.00 | 5.00 |
| 54 | 16.00 | 24.00 | 18.00 | 6.00 |
| 55 | 16.00 | 30.00 | 18.00 | 15.00 |
| 56 | 18.00 | 30.00 | 15.00 | 15.00 |
| 57 | 18.00 | 30.00 | 15.00 | 15.00 |
| 58 | 20.00 | 35.00 | 25.00 | 15.00 |
| 59 | 20.00 | 35.00 | 25.00 | 20.00 |
| 60 | 20.00 | 35.00 | 25.00 | 20.00 |
| 61 | 20.00 | 35.00 | 25.00 | 20.00 |
| 62 | 20.00 | 35.00 | 25.00 | 20.00 |
| 63 | 25.00 | 35.00 | 30.00 | 20.00 |
| 64 | 35.00 | 35.00 | 35.00 | 25.00 |
| 65 and over | 100.00 | 100.00 | 100.00 | 100.00 |

## Inactive members

### Current and Future Inactive Member Assumptions

| Category | % of Future[1] Deferred Vested Members | Annual Salary Increases from Separation Date | Retirement Age |
|---|---|---|---|
| General with reciprocity | 40% | 3.50% | 60 |
| General without reciprocity | 60% | N/A | 60 |
| Safety with reciprocity | 70% | 4.00% | 53 |
| Safety without reciprocity | 30% | N/A | 51 |

## Future benefit accruals

1.0 year of service per year for full-time employees. Continuation of current partial service accrual for part-time employees.

## Unknown data for members

- Same as those exhibited by members with similar known characteristics.
- If not specified, members are assumed to be male.

## Definition of active members

All active members of CCCERA as of the valuation date.

## Form of payment

- All active and inactive members are assumed to elect the unmodified option at retirement.
- There is no explicit assumption for children's benefits.

[1] CCCERA provides the reciprocity status for current deferred vested members in the valuation census data.

## Spousal assumptions

### Current Active and Inactive Member Spousal Assumptions

| Member Gender | % with Spouse at Retirement or Pre-Retirement Death | Spouse Age | Spouse Gender |
|---|---|---|---|
| Male member | 65% | 3 years younger than member | Female |
| Female member | 50% | 2 years older than member | Male |

## Offsets by other plans of the employer for disability benefits

The Plan requires members who retire because of disability from General Tier 3 and General Tier 5 to offset the Plan's disability benefits with other Plans of the employer. We have not assumed any offsets in this valuation.

## Leave cashout

### General Tier 1, Tier 2 and Tier 3 & Safety Tier A and Tier C

Leave Cashout as Percentage of Final Average Pay

| Cost Group | Leave Cashout |
|---|---|
| Cost Group 1 | 1.00% |
| Cost Group 2 | 0.50% for Tier 2<br>0.75% for Tier 3 |
| Cost Group 3 | 5.25% |
| Cost Group 4 | 1.00% |
| Cost Group 5 | 1.00% |
| Cost Group 6 | 0.00% |
| Cost Group 7 | 0.50% |
| Cost Group 8 | 0.25% |
| Cost Group 9 | 0.00% |
| Cost Group 10 | 0.25% |
| Cost Group 11 | 3.00% |
| Cost Group 12 | 1.75% |
| Withdrawn Employers | 0.00% |

### General Tier 4 and Tier 5 & Safety Tier D and Tier E

None.

## Service from accumulated sick leave

### Additional Service Converted from Accumulated Sick Leave

| Retirement Type and Membership Group | Converted Sick Leave as % of Service at Retirement |
|---|---|
| **Service Retirements** | |
| General | 1.00% |
| Safety | 1.70% |
| **Disability Retirements** | |
| General | 0.06% |
| Safety | 1.00% |

Pursuant to Section 31641.01, the cost of this benefit for the non-PEPRA tiers will be charged only to employers and will not affect member contribution rates.

## Actuarial cost method

Entry Age Actuarial Cost Method.

Entry age is the age on the valuation date minus the lesser of years of employment or benefit service. Normal cost and actuarial accrued liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation, as if the current benefit formula for each individual has always been in effect (i.e., "replacement life within a tier").

## Actuarial value of assets

Market value of assets less unrecognized returns in each of the last nine semi-annual accounting periods. Unrecognized returns are equal to the difference between the actual market return and the expected return on the market value and are recognized semi-annually over a five-year period.

## Valuation value of assets

The actuarial value of assets reduced by the value of the non-valuation reserves and designations.

## Amortization policy

The UAAL as of December 31, 2014 is amortized over separate amortization layers based on the valuations during which each separate layer was previously established.

- Any new UAAL as a result of actuarial gains or losses identified in the annual valuation as of December 31 will be amortized over a period of 18 years.[1]
- Any new UAAL as a result of change in actuarial assumptions or methods will be amortized over a period of 18 years.
- Unless the Board adopts an alternative amortization period after receiving an actuarial analysis:
  - With the exception noted below, the increase in UAAL as a result of any plan amendments will be amortized over a period of 10 years;
  - The entire increase in UAAL resulting from a temporary retirement incentive will be funded in full upon adoption of the incentive. If the increase in UAAL is due to the impact of benefits resulting from additional service permitted in Section 31641.04 of the 1937 CERL (Golden Handshake), the entire increase in UAAL will be funded in full upon adoption of the Golden Handshake.

The UAAL will be amortized over "closed" amortization periods so that the amortization period for each layer decreases by one year with each actuarial valuation.

The UAAL will be amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current payroll growth assumption.

If an overfunding or "surplus" exists (i.e., the VVA exceeds the AAL, so that the total of all UAAL amortization layers becomes negative), any prior UAAL amortization layers will be considered fully amortized, and any subsequent UAAL will be amortized as the first of a new series of amortization layers, using the above amortization periods.

If the surplus exceeds 20% of the AAL per Section 7522.52 of the Government Code, then the amount of surplus in excess of 20% of the AAL (and any subsequent surpluses in excess of that amount) will be amortized over an "open" amortization period of 30 years, but only if the other conditions of Section 7522.52 have also been met. If those conditions are not met, then the surplus will not be amortized and the full normal cost will be contributed.

These amortization policy components will generally apply separately to each of CCCERA's UAAL cost groups with the exception that the conditions of Section 7522.52 apply to the total plan.

[1] Starting with the December 31, 2023 valuation, the Board approved an adjustment to the remaining amortization periods for certain amortization layers in order to minimize the contribution rate tail volatility associated with the UAAL layers established as of December 31, 2012 through December 31, 2018. This is done by setting the remaining amortization period for those UAAL layers to six years in the 2023 valuation.

## Employer contributions

The recommended employer contributions are provided in *Section 2, Subsection F*.

Employer contributions consist of two components:

1. Normal Cost

   The annual contribution rate that, if paid annually from a member's first year of membership through the year of retirement, would accumulate to the amount necessary to fully fund the member's retirement-related benefits. Accumulation includes annual crediting of interest at the assumed investment earning rate.

   The contribution rate is expressed as a level percentage of the member's compensation.

2. Contribution to the Unfunded Actuarial Accrued Liability (UAAL)

   The annual contribution rate that, if paid annually over the UAAL amortization period, would accumulate to the amount necessary to fully fund the UAAL. Accumulation includes annual crediting of interest at the assumed investment earning rate.

   The contribution (or rate credit in the case of a negative UAAL) is calculated to remain as a level percentage of future active member payroll (including payroll for new members as they enter the Association) assuming a constant number of active members. In order to remain as a level percentage of payroll, amortization payments (or credits) are scheduled to increase at the current payroll growth assumption.

   The amortization policy is described under the "Amortization policy" noted above.

### General Tier 4 (2% COLA)

The General Tier 4 (2% COLA) membership tier in Cost Group 1 continues to not have any actual members as of December 31, 2023. The contribution rates for this cost group have been developed in this valuation assuming that the demographic profiles (e.g., entry age, composition of male versus female, etc.) for this cost group can be approximated by the data profiles of current active members within the PEPRA tiers.

## Member contributions

The member contribution rates for all members are provided in *Section 4, Exhibit 3*.

### Non-PEPRA Members

Articles 6 and 6.8 of the 1937 Act define the methodology to be used in the calculation of member basic contribution rates for non-PEPRA General and Safety members, respectively. The member's basic contribution rate is determined so that, if paid annually from a member's first year of membership through the prescribed retirement age, would accumulate to the amount necessary to fund an annuity that is equal to:

- 1/120 of one year Final Average Salary per year of service at age 55 for General Tier 1 and Tier 3 Non-Enhanced members
- 1/100 of one year Final Average Salary per year of service at age 50 for Safety Tier A Non-Enhanced members
- 1/120 of one year Final Average Salary per year of service at age 60 for General Tier 1 and Tier 3 Enhanced members
- 1/100 of one year Final Average Salary per year of service at age 50 for Safety Tier A Enhanced members
- 1/100 of three year Final Average Salary per year of service at age 50 for Safety Tier C Enhanced members

Members also pay 50% of the cost-of-living benefit and all member contributions are accumulated at an annual interest rate adopted annually by the Board.

- Note that recently negotiated MOU's for County General members no longer include the 50% employer subvention of the members' basic contributions.
- Districts pay varying portions of the members' basic contributions on a nonrefundable basis.
- For most Safety Tier A employers, Safety members also subvent a portion of the employer rate, currently up to 9% of compensation (depending on their MOU).

Effective with the December 31, 2014 valuation, for determining the cost of the total benefit (i.e., basic and COLA components), the leave cashout assumptions are recognized in the valuation as an employer and member cost. Prior to the December 31, 2014 valuation, for determining the cost of the basic benefit (i.e., non-COLA component), the leave cashout assumptions were recognized in the valuation only as an employer cost and did not affect member contribution rates. In other words, the leave cashout assumptions were only used in establishing COLA member contribution rates.

As a result of including the leave cashout assumptions in the basic member rates for the members of each specific cost group, the COLA member rates are no longer pooled across all members of the same tier. This results in twelve different sets of member contribution rates for each specific cost group.

### PEPRA Members

Pursuant to Section 7522.30(a) of the Government Code, PEPRA members are required to contribute at least 50% of the normal cost rate. We have assumed that exactly 50% of the normal cost would be paid by PEPRA members. In addition, we have calculated the total normal cost rate for the PEPRA tiers to the nearest one fiftieth of one percent (i.e., the nearest even one-hundredth) as that will allow the normal cost rate to be shared exactly 50:50 without going beyond two decimal places.

The member contribution rates for all members are provided in *Section 4, Exhibit 3*.

## Cost sharing adjustments

Starting with the December 31, 2009 Actuarial Valuation, the Board took action to depool CCCERA's assets, liabilities and normal cost by employer when determining employer contribution rates. The Board action included a review of experience back to December 31, 2002. This did not involve recalculation of any employer rates prior to December 31, 2009. However, it did involve reflecting the separate experience of the employers in each individual cost group back from December 31, 2002 through December 31, 2009. The cost groups are detailed in *Section 4, Exhibit 5*. In addition, the Board action called for a discontinuation of certain cost sharing adjustments for both member and employer contribution rates for General Tier 1 and Safety Tier A. Even under the depooling structure, there are a few remaining cost sharing arrangements. Here is a summary of the cost sharing arrangements that were implemented in the December 31, 2009 Actuarial Valuation:

- Smaller employers (less than 50 active members as of December 31, 2009) were pooled with the applicable County tier.
  - For the December 31, 2009 through December 31, 2018 valuations, Safety members from the East Contra Costa Fire Protection District were pooled with Safety members of the Contra Costa County Fire Protection District.
  - Starting with the December 31, 2019 valuation the Safety members from the East Contra Costa Fire Protection District were depooled from the Safety members of the Contra Costa Fire Protection District based on AAL.
  - Starting with the December 31, 2021 valuation the General and Safety members from the East Contra Costa Fire Protection District have become General and Safety members of Contra Costa Fire Protection District, effective with the July 1, 2022 annexation of East Contra Costa Fire Protection District into Contra Costa Fire Protection District.
- Due to a statutory requirement, the Superior Court was pooled with the County regardless of how many members the Court has.
- UAAL costs are pooled between Cost Group 1 and Cost Group 2 which represent General County and Small Districts.

- UAAL costs are pooled between Cost Group 7 and Cost Group 9 which represent Safety County.

## Additional contribution rate adjustments

Adjustments are made to the UAAL amounts for Local Agency Formation Commission (LAFCO) and In-Home Supportive Services Authority (IHSS) to account for special contributions that have previously been made. These adjustments serve to reduce the UAAL contribution rate for these employers.

The outstanding balances of these adjustments as of December 31, 2023 are as follows:

| Contribution Component | LAFCO General[1] | IHSS General |
|---|---|---|
| Basic | $118,633 | $69,373 |
| COLA | 0 | 23,124 |

## Internal Revenue Code Section 415

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of $160,000 indexed for inflation. That limit is $275,000 for 2024. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions.

Non-PEPRA benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

[1] LAFCO made several UAAL prepayments in past valuations. Those prepayments have been amortized over 18 years from the date they were made and allocated to provide Basic and COLA rate credits based on the then current Basic and COLA UAAL rates before the prepayments. Effective with the December 31, 2022 valuation, we re-allocated the outstanding balance of those prepayment credits so that the COLA UAAL rate for LAFCO would be the same as the other employers in Cost Group 1.

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

Contribution rates determined in this valuation have not been reduced for the Section 415 limitations. However, it is anticipated that PEPRA members will not be limited in the future due to the PEPRA compensation limit applied in the determination of their benefit. Actual limitations will result in actuarial gains as they occur.

## Models

Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

## Justification for change in actuarial assumptions, methods or models

The following assumption has changed since the prior valuation. Previously this assumption was as follows:

### Administrative expense (prior assumption)

1.13% of payroll allocated between the employer and member based on normal cost (before expenses) for the employer and member. This assumption is subject to change each year based on the actual administrative expenses as a percent of actual covered payroll during the calendar year ending on the valuation date.

# Exhibit 2: Summary of Plan provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions. If the Association should find the plan summary not in accordance with the actual provisions, the Association should alert the actuary so they can both be sure the proper provisions are valued.

## Plan year

January 1 through December 31

## Membership eligibility

- **General Tier 1**
  - General members hired before July 1, 1980 who elected not to transfer to Tier 2.
  - Certain General members with membership dates before January 1, 2013 hired by specific employers who did not adopt Tier 2 are placed in Tier 1.
- **General Tier 2**
  - Most General members hired on or after August 1, 1980 and all General members hired before July 1, 1980 and elected to transfer to Tier 2.
  - Effective October 1, 2002, for the County, Tier 2 was eliminated and all County employees (excluding CNA employees) in Tier 2 were placed in Tier 3.
  - Effective January 1, 2005, all CNA employees in Tier 2 were placed in Tier 3.
- **General Tier 3**
  - General members with membership dates before January 1, 2013 who were not placed in Tier 1 are placed in Tier 3.
- **General Tier 4 and Tier 5**
  - General members with membership dates on or after January 1, 2013 hired by specific employers who did not adopt Tier 2 are placed in Tier 4.
  - All other General members with membership dates on or after January 1, 2013 are placed in Tier 5.
  - These members are designated as PEPRA members and are subject to the provisions of California Government Code 7522 et. seq.

- **Safety Tier A and Tier C**
  - Safety members with membership dates before January 1, 2013.
  - County Sheriff's Department Safety members hired on or after January 1, 2007, but before January 1, 2013 are placed in Safety Tier C Enhanced.
- **Safety Tier D and Tier E**
  - Safety members with membership dates on or after January 1, 2013.
  - Safety members from certain bargaining units are placed in Safety Tier E.
  - These members are designated as PEPRA members and are subject to the provisions of California Government Code 7522 et. seq.

## Final compensation for benefit determination

- **General Tier 1 and Tier 3 (non-disability) & Safety Tier A**
  - Highest consecutive 12 months of compensation earnable. (§31462.1) (FAS1)
- **General Tier 2 and Tier 3 (disability) & Safety Tier C**
  - Highest consecutive 36 months of compensation earnable. (§31462) (FAS3)
- **General Tier 4 and Tier 5 & Safety Tier D and Tier E**
  - Highest consecutive 36 months of pensionable compensation. (§7522.10(c), §7522.32 and §7522.34) (FAS3)

## Compensation Limit

- **General Tier 1, Tier 2 and Tier 3 & Safety Tier A and Tier C**
  - For members with membership dates on or after January 1, 1996, compensation earnable is limited to Internal Revenue Code Section 401(a)(17).
  - The limit is $345,000 for calendar year 2024 and is indexed for inflation on an annual basis.
- **General Tier 4 and Tier 5 & Safety Tier D and Tier E**
  - For members with membership dates on or after January 1, 2013, pensionable compensation is limited to California Government Code 7522.10(c).
  - The limit is $151,466 for calendar year 2024 ($181,734, if not enrolled in Social Security) and is indexed for inflation on an annual basis.

## Social Security primary insurance amount

- **General Tier 2**
  - Estimated Social Security award at age 62 assuming level future earnings. (PIA)

## Service

Years of service are generally based on a member's employment during a period of time for which deductions are made from their compensation. Includes accumulated sick leave as of the date of retirement. (§31641.01) (Yrs)

A maximum of 30 years of service (Yrs30) is used in the Social Security offset portion of the General Tier 2 benefit formula.

## Service retirement

### Eligibility

- **General Tier 1, Tier 2, and Tier 3**
  - Age 50 with 10 years of service, or age 70 regardless of service or after 30 years of service regardless of age. (§31672)
- **General Tier 4 and Tier 5**
  - Age 52 with 5 years of service or age 70 regardless of service. (§7522.20(a) and §31672.3)
- **Safety Tier A and Tier C**
  - Age 50 with 10 years of service, or age 70 regardless of service or after 20 years of service regardless of age. (§31663.25)
- **Safety Tier D and Tier E**
  - Age 50 with 5 years of service or age 70 regardless of service. (§7522.25(a)) and §31672.3)

## Benefit amount

The offsets shown in all benefit formulas only apply to members integrated with Social Security.

### General Tier 1 and Tier 3 (Non-Enhanced) (§31676.11)

| Retirement Age | Benefit Formula |
|---|---|
| 50 | 1.24% × (FAS1 – $1,400) × Yrs |
| 55 | 1.67% × (FAS1 – $1,400) × Yrs |
| 60 | 2.18% × (FAS1 – $1,400) × Yrs |
| 62 | 2.35% × (FAS1 – $1,400) × Yrs |
| 65 and over | 2.61% × (FAS1 – $1,400) × Yrs |

### General Tier 1 and Tier 3 (Enhanced) (§31676.16)

| Retirement Age | Benefit Formula[1] |
|---|---|
| 50 | 1.43% × (FAS1 – $1,400) × Yrs |
| 55 | 2.00% × (FAS1 – $1,400) × Yrs |
| 60 | 2.26% × (FAS1 – $1,400) × Yrs |
| 62 | 2.37% × (FAS1 – $1,400) × Yrs |
| 65 and over | 2.42% × (FAS1 – $1,400) × Yrs |

### General Tier 2 (§31752)

| Retirement Age | Benefit Formula |
|---|---|
| 50 | 0.83% × FAS3 × Yrs – 0.57% × Yrs30 × PIA |
| 55 | 1.13% × FAS3 × Yrs – 0.87% × Yrs30 × PIA |
| 60 | 1.43% × FAS3 × Yrs – 1.37% × Yrs30 × PIA |
| 62 | 1.55% × FAS3 × Yrs – 1.67% × Yrs30 × PIA |
| 65 and over | 1.73% × FAS3 × Yrs – 1.67% × Yrs30 × PIA |

[1] For members previously covered under the non-enhanced §31676.11 formula, they are entitled to at least the benefits they could have received under §31676.11.

## General Tier 4 and Tier 5 (§7522.20(a))

| Retirement Age | Benefit Formula |
|---|---|
| 52 | 1.00% × FAS3 × Yrs |
| 55 | 1.30% × FAS3 × Yrs |
| 60 | 1.80% × FAS3 × Yrs |
| 62 | 2.00% × FAS3 × Yrs |
| 65 | 2.30% × FAS3 × Yrs |
| 67 and over | 2.50% × FAS3 × Yrs |

## Safety Tier A (Non-Enhanced) (§31664)

| Retirement Age | Benefit Formula |
|---|---|
| 50 | 2.00% × FAS1 × Yrs |
| 55 and over | 2.62% × FAS1 × Yrs |

## Safety Tier A (Enhanced) (§31664.1)

| Retirement Age | Benefit Formula |
|---|---|
| 50 and over | 3.00% × FAS1 × Yrs |

## Safety Tier C (Enhanced) (§31664.1)

| Retirement Age | Benefit Formula |
|---|---|
| 50 and over | 3.00% × FAS3 × Yrs |

## Safety Tier D and Tier E (§7522.25(d))

| Retirement Age | Benefit Formula |
|---|---|
| 50 | 2.00% × FAS3 × Yrs |
| 55 | 2.50% × FAS3 × Yrs |
| 57 and over | 2.70% × FAS3 × Yrs |

### Maximum benefit

- **General Tier 1 and Tier 3 & Safety Tier A and Tier C**
  - 100% of final compensation. (§31676.11, §31676.16, §31664, §31664.1)
- **General Tier 2, Tier 4 and Tier 5 & Safety Tier D and Tier E**
  - None.

## Non-service-connected disability

### Eligibility

- **General Tier 1 and Tier 4 & Safety**
  - Five years of service. (§31720)
- **General Tier 2, Tier 3 and Tier 5**
  - Ten years of service. (§31720.1)

### Benefit amount

- **General Tier 1 and Tier 4**
  - 1.5% per year of service.
  - If the benefit does not exceed one-third of final compensation, the service is projected to age 65, but the total projected benefit cannot be more than one-third of final compensation. (§31727)
  - If the member is eligible to receive a service retirement benefit, 100% of the service retirement benefit will be paid if greater than the above.
- **General Tier 2, Tier 3 and Tier 5**
  - 40% of final compensation plus 10% of final compensation used in the benefit determination for each minor child (maximum of three). (§31727.01)
  - If the member is eligible to receive a service retirement benefit, 100% of the service retirement benefit will be paid if greater than the above.

- **Safety**
  - 1.8% per year of service.
  - If the benefit does not exceed one-third of final compensation, the service is projected to age 55, but the total projected benefit cannot be more than one-third of final compensation. (§31727.2)
  - If the member is eligible to receive a service retirement benefit, 100% of the service retirement benefit will be paid if greater than the above.

### Offset

- **General Tier 1 and Tier 4 & Safety**
  - None.
- **General Tier 2, Tier 3 and Tier 5**
  - Disability benefits are offset by other plans of the employer except Workers Compensation and Social Security.

## Service-connected disability

### Eligibility

No age or service requirements. (§31720)

### Benefit amount

- **General Tier 1 and Tier 4 & Safety**
  - 50% of the final compensation. (§31727.4)
  - If the member is eligible to receive a service retirement benefit, 100% of the service retirement benefit will be paid if greater than the above.
- **General Tier 2, Tier 3 and Tier 5**
  - 40% of final compensation plus 10% of final compensation for each minor child (maximum of three). (§31727.01)
  - If the member is eligible to receive a service retirement benefit, 100% of the service retirement benefit will be paid if greater than the above.

### Offset

- **General Tier 1 and Tier 4 & Safety**
  - None.
- **General Tier 2, Tier 3 and Tier 5**
  - Disability benefits are offset by other plans of the Employer except Workers Compensation and Social Security.

## Pre-retirement death

### Basic death benefit

*Eligibility*

None.

*Benefit amount*

- **General Tier 1, Tier 3, Tier 4 and Tier 5 & Safety**
  - Refund of employee contributions with interest, plus one month's compensation for each year of service, to a maximum of six month's compensation. (§31781)
- **General Tier 2**
  - Refund of employee contributions with interest, plus $2,000 lump sum benefit offset by any Social Security payment. (§31781.01)

### Optional death allowance

*Eligibility*

- **General Tier 1 and Tier 4 & Safety**
  - Five years of service.
- **General Tier 2, Tier 3 and Tier 5**
  - Ten years of service.

### *Benefit amount (non-service connected death)*

Option 2 (100% continuance) of non-service connected disability benefit (or service retirement benefit, if eligible) payable to designated beneficiary.

### *Benefit amount (service-connected death)*

- **General Tier 1, Tier 3, Tier 4 and Tier 5 & Safety**
  - 50% of final compensation payable to spouse. (§31787)
  - If the member is eligible to receive a service retirement benefit, 100% of the service retirement benefit will be paid if greater than the above.
- **General Tier 2**
  - 60% of service or disability retirement benefit (minimum benefit is 24% of final compensation) plus, for each minor child, 10% of the allowance otherwise paid to the member.
  - Family benefit has a minimum of 60% of the member's allowance and a maximum of 100% of member's allowance.

## Post-retirement death

### Service retirement or non-service connected disability retirement

- **General Tier 1, Tier 3, Tier 4 and Tier 5 & Safety**
  - Unless another option was selected at retirement, 60% of member's unmodified allowance continues to eligible spouse.
    - An eligible spouse is a surviving spouse who was married to the member at least one year prior to the member's retirement or at least two years prior to the date of death and has attained age 55 on or prior to the date of death. (§31760.2)
    - An additional lump sum benefit of $5,000 is payable to the member's beneficiary. (§31789.5)
- **General Tier 2**
  - Unless another option was selected at retirement, 60% of member's unmodified allowance continues to eligible spouse plus 20% of allowance to each minor child. (§31789.11)
    - Maximum benefit is 100% of allowance.
    - An additional lump sum benefit of $5,000 (§31789.5) plus $2,000 less any Social Security lump sum payment (§31789.01) are payable to the member's beneficiary.

### Service-connected disability

- **General Tier 1, Tier 3, Tier 4 and Tier 5 & Safety**
  - Unless another option was selected at retirement, 100% of member's allowance continued to eligible spouse. (§31786)
    - An additional lump sum benefit of $5,000 is payable to the member's beneficiary. (§31789.5)
- **General Tier 2**
  - Unless another option was selected at retirement, 60% of member's unmodified allowance continues to eligible spouse plus 20% of allowance to each minor child. (§31789.11)
    - Maximum benefit is 100% of allowance.
    - An additional lump sum benefit of $5,000 (§31789.5) plus $2,000 less any Social Security lump sum payment (§31789.01) are payable to the member's beneficiary.

## Leaving before retirement

- **Less than five years of service**
  - Refund of accumulated employee contributions with interest or earned benefit at age 70. (§31628)
- **Five or more years of service**
  - If contributions left on deposit, entitled to earned benefits commencing at any time after eligible to retire. (§31700)

## Post-retirement cost-of-living adjustments

- **General Tier 1, Tier 3 (non-disability), Tier 4 and Tier 5 (non-disability) & Safety Tier A and Tier D**
  - Future changes based on Consumer Price Index to a maximum of 3% per year, excess "banked".
- **General Tier 2, Tier 3 (disability) and Tier 5 (disability)**
  - Future changes based on Consumer Price Index to a maximum of 4% per year, excess "banked".
- **General Tier 4 and Tier 5 (under certain MOUs) & Safety Tier C and Tier E**
  - Future changes based on Consumer Price Index to a maximum of 2% per year, excess "banked".

## Member contributions

Please refer to *Section 4, Exhibit 3* for specific rates.

- **General Tier 1 and Tier 3 (Non-Enhanced)**
  - **Basic:** Entry-age based rates that provide for one-half of the §31676.11 benefit payable at age 55.
  - **Cost-of-Living:** Entry-age based rates that provide for one-half of future cost-of-living costs.
- **General Tier 1 and Tier 3 (Enhanced)**
  - **Basic:** Entry-age based rates that provide for an annuity at age 60 equal to 1/120 of FAS1.
  - **Cost-of-Living:** Entry-age based rates that provide for one-half of future cost-of-living costs.
- **General Tier 4 and Tier 5**
  - 50% of the total normal cost rate.
- **Safety Tier A (Non-Enhanced)**
  - **Basic:** Entry-age based rates that provide for one-half of the §31664 benefit payable at age 50.
  - **Cost-of-Living:** Entry-age based rates that provide for one-half of future cost-of-living costs.
- **Safety Tier A (Enhanced)**
  - **Basic:** Entry-age based rates that provide for an annuity at age 50 equal to 1/100 of FAS1.
  - **Cost-of-Living:** Entry-age based rates that provide for one-half of future cost-of-living costs.
- **Safety Tier C (Enhanced)**
  - **Basic:** Entry-age based rates that provide for an annuity at age 50 equal to 1/100 of FAS3.
  - **Cost-of-Living:** Entry-age based rates that provide for one-half of future cost-of-living costs.
- **Safety Tier D and Tier E**
  - 50% of the total normal cost rate.

## Other information

- Transfers from Tier 1 to Tier 2 were made on an individual voluntary irrevocable basis.
  - Credit is given under Tier 2 for future service only.
  - The cost-of-living adjustment maximum is 4% only for the credit under Tier 2.
  - Transferred Tier 2 members keep the five-year requirement for non-service connected disability.
- Those who were members on or before March 7, 1973 and Safety members with membership dates on or before January 1, 2013 will be exempt from paying member contributions after 30 years of service.

## Plan provisions not valued

- Additional $5,000 lump sum post-retirement death benefit (except for $2,000 for General Tier 2 members paid out of the valuation value of assets) payable to a member's beneficiary.
  - This benefit is paid from a reserve that is not included in the valuation value of assets and is subject at all times to the availability of funds.

## Changes in Plan provisions

There have been no changes in Plan provisions since the prior valuation.

## Exhibit 3: Member contribution rates

### Cost Group 1 (General) — Member Contribution Rates (Membership before January 1, 2013)
*(% of Monthly Payroll)*

| Entry Age | Basic First $350 | Basic Over $350 | COLA First $350 | COLA Over $350 | Total First $350 | Total Over $350 |
|---|---|---|---|---|---|---|
| 15 | 3.81% | 5.45% | 1.87% | 2.81% | 5.68% | 8.26% |
| 16 | 3.87% | 5.55% | 1.91% | 2.87% | 5.78% | 8.42% |
| 17 | 3.94% | 5.65% | 1.95% | 2.93% | 5.89% | 8.58% |
| 18 | 4.01% | 5.75% | 1.99% | 2.98% | 6.00% | 8.73% |
| 19 | 4.07% | 5.85% | 2.03% | 3.04% | 6.10% | 8.89% |
| 20 | 4.14% | 5.95% | 2.07% | 3.10% | 6.21% | 9.05% |
| 21 | 4.21% | 6.06% | 2.11% | 3.16% | 6.32% | 9.22% |
| 22 | 4.29% | 6.17% | 2.15% | 3.22% | 6.44% | 9.39% |
| 23 | 4.35% | 6.27% | 2.19% | 3.28% | 6.54% | 9.55% |
| 24 | 4.43% | 6.39% | 2.23% | 3.35% | 6.66% | 9.74% |
| 25 | 4.51% | 6.50% | 2.27% | 3.41% | 6.78% | 9.91% |
| 26 | 4.58% | 6.61% | 2.31% | 3.47% | 6.89% | 10.08% |
| 27 | 4.66% | 6.73% | 2.36% | 3.54% | 7.02% | 10.27% |
| 28 | 4.74% | 6.85% | 2.41% | 3.61% | 7.15% | 10.46% |
| 29 | 4.82% | 6.97% | 2.45% | 3.68% | 7.27% | 10.65% |
| 30 | 4.91% | 7.10% | 2.50% | 3.75% | 7.41% | 10.85% |
| 31 | 4.99% | 7.22% | 2.55% | 3.82% | 7.54% | 11.04% |
| 32 | 5.07% | 7.35% | 2.59% | 3.89% | 7.66% | 11.24% |
| 33 | 5.16% | 7.48% | 2.65% | 3.97% | 7.81% | 11.45% |
| 34 | 5.25% | 7.62% | 2.70% | 4.05% | 7.95% | 11.67% |
| 35 | 5.35% | 7.76% | 2.75% | 4.13% | 8.10% | 11.89% |
| 36 | 5.44% | 7.90% | 2.81% | 4.21% | 8.25% | 12.11% |
| 37 | 5.53% | 8.04% | 2.86% | 4.29% | 8.39% | 12.33% |
| 38 | 5.63% | 8.19% | 2.91% | 4.37% | 8.54% | 12.56% |
| 39 | 5.74% | 8.35% | 2.97% | 4.46% | 8.71% | 12.81% |
| 40 | 5.84% | 8.50% | 3.03% | 4.55% | 8.87% | 13.05% |

| Entry Age | Basic First $350 | Basic Over $350 | COLA First $350 | COLA Over $350 | Total First $350 | Total Over $350 |
|---|---|---|---|---|---|---|
| 41 | 5.94% | 8.65% | 3.09% | 4.64% | 9.03% | 13.29% |
| 42 | 6.05% | 8.81% | 3.15% | 4.73% | 9.20% | 13.54% |
| 43 | 6.15% | 8.96% | 3.21% | 4.81% | 9.36% | 13.77% |
| 44 | 6.25% | 9.12% | 3.27% | 4.90% | 9.52% | 14.02% |
| 45 | 6.36% | 9.28% | 3.33% | 4.99% | 9.69% | 14.27% |
| 46 | 6.47% | 9.44% | 3.39% | 5.09% | 9.86% | 14.53% |
| 47 | 6.57% | 9.60% | 3.45% | 5.18% | 10.02% | 14.78% |
| 48 | 6.68% | 9.76% | 3.51% | 5.27% | 10.19% | 15.03% |
| 49 | 6.77% | 9.90% | 3.57% | 5.35% | 10.34% | 15.25% |
| 50 | 6.87% | 10.05% | 3.62% | 5.43% | 10.49% | 15.48% |
| 51 | 6.98% | 10.21% | 3.69% | 5.53% | 10.67% | 15.74% |
| 52 | 7.09% | 10.37% | 3.75% | 5.62% | 10.84% | 15.99% |
| 53 | 7.19% | 10.53% | 3.81% | 5.71% | 11.00% | 16.24% |
| 54 | 7.29% | 10.67% | 3.86% | 5.79% | 11.15% | 16.46% |
| 55 | 7.38% | 10.81% | 3.91% | 5.87% | 11.29% | 16.68% |
| 56 | 7.45% | 10.92% | 3.95% | 5.93% | 11.40% | 16.85% |
| 57 | 7.45% | 10.91% | 3.95% | 5.92% | 11.40% | 16.83% |
| 58 | 7.41% | 10.85% | 3.93% | 5.89% | 11.34% | 16.74% |
| 59 and over | 7.25% | 10.61% | 3.83% | 5.75% | 11.08% | 16.36% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 1.00% |
| COLA loading factor: | 57.02%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Group 2 (General) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic First $350 | Basic Over $350 | COLA First $350 | COLA Over $350 | Total First $350 | Total Over $350 |
|---|---|---|---|---|---|---|
| 15 | 3.80% | 5.44% | 1.63% | 2.45% | 5.43% | 7.89% |
| 16 | 3.87% | 5.54% | 1.67% | 2.50% | 5.54% | 8.04% |
| 17 | 3.93% | 5.64% | 1.70% | 2.55% | 5.63% | 8.19% |
| 18 | 4.00% | 5.74% | 1.73% | 2.60% | 5.73% | 8.34% |
| 19 | 4.07% | 5.84% | 1.77% | 2.65% | 5.84% | 8.49% |
| 20 | 4.13% | 5.94% | 1.80% | 2.70% | 5.93% | 8.64% |
| 21 | 4.21% | 6.05% | 1.83% | 2.75% | 6.04% | 8.80% |
| 22 | 4.27% | 6.15% | 1.87% | 2.80% | 6.14% | 8.95% |
| 23 | 4.35% | 6.26% | 1.91% | 2.86% | 6.26% | 9.12% |
| 24 | 4.42% | 6.37% | 1.94% | 2.91% | 6.36% | 9.28% |
| 25 | 4.49% | 6.48% | 1.98% | 2.97% | 6.47% | 9.45% |
| 26 | 4.57% | 6.60% | 2.02% | 3.03% | 6.59% | 9.63% |
| 27 | 4.65% | 6.72% | 2.06% | 3.09% | 6.71% | 9.81% |
| 28 | 4.73% | 6.84% | 2.10% | 3.15% | 6.83% | 9.99% |
| 29 | 4.81% | 6.96% | 2.14% | 3.21% | 6.95% | 10.17% |
| 30 | 4.89% | 7.08% | 2.17% | 3.26% | 7.06% | 10.34% |
| 31 | 4.98% | 7.21% | 2.22% | 3.33% | 7.20% | 10.54% |
| 32 | 5.07% | 7.34% | 2.26% | 3.39% | 7.33% | 10.73% |
| 33 | 5.15% | 7.47% | 2.31% | 3.46% | 7.46% | 10.93% |
| 34 | 5.24% | 7.60% | 2.35% | 3.52% | 7.59% | 11.12% |
| 35 | 5.33% | 7.74% | 2.39% | 3.59% | 7.72% | 11.33% |
| 36 | 5.43% | 7.88% | 2.44% | 3.66% | 7.87% | 11.54% |
| 37 | 5.53% | 8.03% | 2.49% | 3.74% | 8.02% | 11.77% |
| 38 | 5.62% | 8.17% | 2.54% | 3.81% | 8.16% | 11.98% |
| 39 | 5.72% | 8.32% | 2.59% | 3.88% | 8.31% | 12.20% |
| 40 | 5.83% | 8.48% | 2.64% | 3.96% | 8.47% | 12.44% |

| Entry Age | Basic First $350 | Basic Over $350 | COLA First $350 | COLA Over $350 | Total First $350 | Total Over $350 |
|---|---|---|---|---|---|---|
| 41 | 5.93% | 8.63% | 2.69% | 4.04% | 8.62% | 12.67% |
| 42 | 6.03% | 8.79% | 2.75% | 4.12% | 8.78% | 12.91% |
| 43 | 6.13% | 8.94% | 2.79% | 4.19% | 8.92% | 13.13% |
| 44 | 6.24% | 9.10% | 2.85% | 4.27% | 9.09% | 13.37% |
| 45 | 6.35% | 9.26% | 2.90% | 4.35% | 9.25% | 13.61% |
| 46 | 6.45% | 9.42% | 2.95% | 4.43% | 9.40% | 13.85% |
| 47 | 6.56% | 9.58% | 3.01% | 4.51% | 9.57% | 14.09% |
| 48 | 6.66% | 9.73% | 3.05% | 4.58% | 9.71% | 14.31% |
| 49 | 6.77% | 9.89% | 3.11% | 4.66% | 9.88% | 14.55% |
| 50 | 6.86% | 10.03% | 3.15% | 4.73% | 10.01% | 14.76% |
| 51 | 6.97% | 10.19% | 3.21% | 4.81% | 10.18% | 15.00% |
| 52 | 7.07% | 10.35% | 3.26% | 4.89% | 10.33% | 15.24% |
| 53 | 7.17% | 10.50% | 3.31% | 4.97% | 10.48% | 15.47% |
| 54 | 7.27% | 10.64% | 3.36% | 5.04% | 10.63% | 15.68% |
| 55 | 7.35% | 10.77% | 3.40% | 5.10% | 10.75% | 15.87% |
| 56 | 7.41% | 10.86% | 3.43% | 5.15% | 10.84% | 16.01% |
| 57 | 7.45% | 10.91% | 3.45% | 5.17% | 10.90% | 16.08% |
| 58 | 7.41% | 10.86% | 3.43% | 5.15% | 10.84% | 16.01% |
| 59 and over | 7.05% | 10.32% | 3.25% | 4.88% | 10.30% | 15.20% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 0.75% |
| COLA loading factor: | 49.77%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Group 3 (General) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 5.66% | 2.87% | 8.53% |
| 16 | 5.76% | 2.92% | 8.68% |
| 17 | 5.86% | 2.98% | 8.84% |
| 18 | 5.97% | 3.04% | 9.01% |
| 19 | 6.07% | 3.10% | 9.17% |
| 20 | 6.18% | 3.16% | 9.34% |
| 21 | 6.29% | 3.22% | 9.51% |
| 22 | 6.40% | 3.28% | 9.68% |
| 23 | 6.51% | 3.34% | 9.85% |
| 24 | 6.63% | 3.41% | 10.04% |
| 25 | 6.75% | 3.48% | 10.23% |
| 26 | 6.87% | 3.54% | 10.41% |
| 27 | 6.99% | 3.61% | 10.60% |
| 28 | 7.11% | 3.68% | 10.79% |
| 29 | 7.24% | 3.75% | 10.99% |
| 30 | 7.37% | 3.82% | 11.19% |
| 31 | 7.50% | 3.89% | 11.39% |
| 32 | 7.63% | 3.97% | 11.60% |
| 33 | 7.77% | 4.04% | 11.81% |
| 34 | 7.91% | 4.12% | 12.03% |
| 35 | 8.05% | 4.20% | 12.25% |
| 36 | 8.20% | 4.28% | 12.48% |
| 37 | 8.35% | 4.37% | 12.72% |
| 38 | 8.50% | 4.45% | 12.95% |
| 39 | 8.66% | 4.54% | 13.20% |
| 40 | 8.82% | 4.63% | 13.45% |

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 41 | 8.98% | 4.72% | 13.70% |
| 42 | 9.14% | 4.81% | 13.95% |
| 43 | 9.30% | 4.90% | 14.20% |
| 44 | 9.46% | 4.99% | 14.45% |
| 45 | 9.62% | 5.08% | 14.70% |
| 46 | 9.79% | 5.17% | 14.96% |
| 47 | 9.95% | 5.26% | 15.21% |
| 48 | 10.11% | 5.35% | 15.46% |
| 49 | 10.26% | 5.43% | 15.69% |
| 50 | 10.42% | 5.52% | 15.94% |
| 51 | 10.57% | 5.61% | 16.18% |
| 52 | 10.71% | 5.68% | 16.39% |
| 53 | 10.87% | 5.77% | 16.64% |
| 54 | 11.02% | 5.86% | 16.88% |
| 55 | 11.18% | 5.95% | 17.13% |
| 56 | 11.23% | 5.97% | 17.20% |
| 57 | 11.19% | 5.95% | 17.14% |
| 58 | 11.05% | 5.87% | 16.92% |
| 59 and over | 10.50% | 5.57% | 16.07% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.50% of payroll added to Basic rates |
| Leave cashout: | 5.25% |
| COLA loading factor: | 55.78%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Group 4 (General) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic First $350 | Basic Over $350 | COLA First $350 | COLA Over $350 | Total First $350 | Total Over $350 |
|---|---|---|---|---|---|---|
| 15 | 3.81% | 5.45% | 1.82% | 2.73% | 5.63% | 8.18% |
| 16 | 3.87% | 5.55% | 1.86% | 2.79% | 5.73% | 8.34% |
| 17 | 3.94% | 5.65% | 1.89% | 2.84% | 5.83% | 8.49% |
| 18 | 4.01% | 5.75% | 1.93% | 2.90% | 5.94% | 8.65% |
| 19 | 4.07% | 5.85% | 1.97% | 2.95% | 6.04% | 8.80% |
| 20 | 4.14% | 5.95% | 2.01% | 3.01% | 6.15% | 8.96% |
| 21 | 4.21% | 6.06% | 2.05% | 3.07% | 6.26% | 9.13% |
| 22 | 4.29% | 6.17% | 2.09% | 3.13% | 6.38% | 9.30% |
| 23 | 4.35% | 6.27% | 2.13% | 3.19% | 6.48% | 9.46% |
| 24 | 4.43% | 6.39% | 2.17% | 3.25% | 6.60% | 9.64% |
| 25 | 4.51% | 6.50% | 2.21% | 3.31% | 6.72% | 9.81% |
| 26 | 4.58% | 6.61% | 2.25% | 3.38% | 6.83% | 9.99% |
| 27 | 4.66% | 6.73% | 2.29% | 3.44% | 6.95% | 10.17% |
| 28 | 4.74% | 6.85% | 2.34% | 3.51% | 7.08% | 10.36% |
| 29 | 4.82% | 6.97% | 2.38% | 3.57% | 7.20% | 10.54% |
| 30 | 4.91% | 7.10% | 2.43% | 3.65% | 7.34% | 10.75% |
| 31 | 4.99% | 7.22% | 2.47% | 3.71% | 7.46% | 10.93% |
| 32 | 5.07% | 7.35% | 2.53% | 3.79% | 7.60% | 11.14% |
| 33 | 5.16% | 7.48% | 2.57% | 3.86% | 7.73% | 11.34% |
| 34 | 5.25% | 7.62% | 2.62% | 3.93% | 7.87% | 11.55% |
| 35 | 5.35% | 7.76% | 2.67% | 4.01% | 8.02% | 11.77% |
| 36 | 5.44% | 7.90% | 2.73% | 4.09% | 8.17% | 11.99% |
| 37 | 5.53% | 8.04% | 2.78% | 4.17% | 8.31% | 12.21% |
| 38 | 5.63% | 8.19% | 2.83% | 4.25% | 8.46% | 12.44% |
| 39 | 5.74% | 8.35% | 2.89% | 4.34% | 8.63% | 12.69% |
| 40 | 5.84% | 8.50% | 2.95% | 4.42% | 8.79% | 12.92% |

| Entry Age | Basic First $350 | Basic Over $350 | COLA First $350 | COLA Over $350 | Total First $350 | Total Over $350 |
|---|---|---|---|---|---|---|
| 41 | 5.94% | 8.65% | 3.01% | 4.51% | 8.95% | 13.16% |
| 42 | 6.05% | 8.81% | 3.06% | 4.59% | 9.11% | 13.40% |
| 43 | 6.15% | 8.96% | 3.12% | 4.68% | 9.27% | 13.64% |
| 44 | 6.25% | 9.12% | 3.18% | 4.77% | 9.43% | 13.89% |
| 45 | 6.36% | 9.28% | 3.23% | 4.85% | 9.59% | 14.13% |
| 46 | 6.47% | 9.44% | 3.29% | 4.94% | 9.76% | 14.38% |
| 47 | 6.57% | 9.60% | 3.35% | 5.03% | 9.92% | 14.63% |
| 48 | 6.68% | 9.76% | 3.41% | 5.12% | 10.09% | 14.88% |
| 49 | 6.77% | 9.90% | 3.47% | 5.20% | 10.24% | 15.10% |
| 50 | 6.87% | 10.05% | 3.52% | 5.28% | 10.39% | 15.33% |
| 51 | 6.98% | 10.21% | 3.58% | 5.37% | 10.56% | 15.58% |
| 52 | 7.09% | 10.37% | 3.64% | 5.46% | 10.73% | 15.83% |
| 53 | 7.19% | 10.53% | 3.70% | 5.55% | 10.89% | 16.08% |
| 54 | 7.29% | 10.67% | 3.75% | 5.63% | 11.04% | 16.30% |
| 55 | 7.38% | 10.81% | 3.80% | 5.70% | 11.18% | 16.51% |
| 56 | 7.45% | 10.92% | 3.84% | 5.76% | 11.29% | 16.68% |
| 57 | 7.45% | 10.91% | 3.84% | 5.76% | 11.29% | 16.67% |
| 58 | 7.41% | 10.85% | 3.81% | 5.72% | 11.22% | 16.57% |
| 59 and over | 7.25% | 10.61% | 3.73% | 5.59% | 10.98% | 16.20% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 1.00% |
| COLA loading factor: | 55.42%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Group 5 (General) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 5.45% | 3.10% | 8.55% |
| 16 | 5.55% | 3.16% | 8.71% |
| 17 | 5.65% | 3.22% | 8.87% |
| 18 | 5.75% | 3.29% | 9.04% |
| 19 | 5.85% | 3.35% | 9.20% |
| 20 | 5.95% | 3.41% | 9.36% |
| 21 | 6.06% | 3.48% | 9.54% |
| 22 | 6.17% | 3.55% | 9.72% |
| 23 | 6.27% | 3.61% | 9.88% |
| 24 | 6.39% | 3.69% | 10.08% |
| 25 | 6.50% | 3.76% | 10.26% |
| 26 | 6.61% | 3.83% | 10.44% |
| 27 | 6.73% | 3.90% | 10.63% |
| 28 | 6.85% | 3.98% | 10.83% |
| 29 | 6.97% | 4.05% | 11.02% |
| 30 | 7.10% | 4.13% | 11.23% |
| 31 | 7.22% | 4.21% | 11.43% |
| 32 | 7.35% | 4.29% | 11.64% |
| 33 | 7.48% | 4.37% | 11.85% |
| 34 | 7.62% | 4.46% | 12.08% |
| 35 | 7.76% | 4.55% | 12.31% |
| 36 | 7.90% | 4.64% | 12.54% |
| 37 | 8.04% | 4.73% | 12.77% |
| 38 | 8.19% | 4.82% | 13.01% |
| 39 | 8.35% | 4.92% | 13.27% |
| 40 | 8.50% | 5.01% | 13.51% |

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 41 | 8.65% | 5.11% | 13.76% |
| 42 | 8.81% | 5.21% | 14.02% |
| 43 | 8.96% | 5.30% | 14.26% |
| 44 | 9.12% | 5.40% | 14.52% |
| 45 | 9.28% | 5.50% | 14.78% |
| 46 | 9.44% | 5.61% | 15.05% |
| 47 | 9.60% | 5.71% | 15.31% |
| 48 | 9.76% | 5.81% | 15.57% |
| 49 | 9.90% | 5.89% | 15.79% |
| 50 | 10.05% | 5.99% | 16.04% |
| 51 | 10.21% | 6.09% | 16.30% |
| 52 | 10.37% | 6.19% | 16.56% |
| 53 | 10.53% | 6.29% | 16.82% |
| 54 | 10.67% | 6.38% | 17.05% |
| 55 | 10.81% | 6.47% | 17.28% |
| 56 | 10.92% | 6.54% | 17.46% |
| 57 | 10.91% | 6.53% | 17.44% |
| 58 | 10.85% | 6.49% | 17.34% |
| 59 and over | 10.61% | 6.34% | 16.95% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 1.00% |
| COLA loading factor: | 62.84%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Group 6 (General) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic First $350 | Basic Over $350 | COLA First $350 | COLA Over $350 | Total First $350 | Total Over $350 |
|---|---|---|---|---|---|---|
| 15 | 4.31% | 6.20% | 1.73% | 2.59% | 6.04% | 8.79% |
| 16 | 4.38% | 6.31% | 1.76% | 2.64% | 6.14% | 8.95% |
| 17 | 4.45% | 6.42% | 1.79% | 2.69% | 6.24% | 9.11% |
| 18 | 4.53% | 6.54% | 1.83% | 2.74% | 6.36% | 9.28% |
| 19 | 4.61% | 6.65% | 1.86% | 2.79% | 6.47% | 9.44% |
| 20 | 4.69% | 6.77% | 1.90% | 2.85% | 6.59% | 9.62% |
| 21 | 4.77% | 6.89% | 1.93% | 2.90% | 6.70% | 9.79% |
| 22 | 4.85% | 7.01% | 1.97% | 2.96% | 6.82% | 9.97% |
| 23 | 4.93% | 7.14% | 2.01% | 3.02% | 6.94% | 10.16% |
| 24 | 5.02% | 7.27% | 2.05% | 3.08% | 7.07% | 10.35% |
| 25 | 5.11% | 7.40% | 2.09% | 3.14% | 7.20% | 10.54% |
| 26 | 5.19% | 7.53% | 2.13% | 3.20% | 7.32% | 10.73% |
| 27 | 5.28% | 7.66% | 2.17% | 3.25% | 7.45% | 10.91% |
| 28 | 5.37% | 7.80% | 2.21% | 3.32% | 7.58% | 11.12% |
| 29 | 5.47% | 7.94% | 2.25% | 3.38% | 7.72% | 11.32% |
| 30 | 5.57% | 8.09% | 2.30% | 3.45% | 7.87% | 11.54% |
| 31 | 5.67% | 8.24% | 2.35% | 3.52% | 8.02% | 11.76% |
| 32 | 5.77% | 8.39% | 2.39% | 3.59% | 8.16% | 11.98% |
| 33 | 5.87% | 8.54% | 2.44% | 3.66% | 8.31% | 12.20% |
| 34 | 5.97% | 8.70% | 2.49% | 3.73% | 8.46% | 12.43% |
| 35 | 6.08% | 8.86% | 2.53% | 3.80% | 8.61% | 12.66% |
| 36 | 6.19% | 9.03% | 2.59% | 3.88% | 8.78% | 12.91% |
| 37 | 6.29% | 9.18% | 2.63% | 3.95% | 8.92% | 13.13% |
| 38 | 6.41% | 9.35% | 2.68% | 4.02% | 9.09% | 13.37% |
| 39 | 6.51% | 9.51% | 2.73% | 4.10% | 9.24% | 13.61% |
| 40 | 6.63% | 9.69% | 2.79% | 4.18% | 9.42% | 13.87% |

| Entry Age | Basic First $350 | Basic Over $350 | COLA First $350 | COLA Over $350 | Total First $350 | Total Over $350 |
|---|---|---|---|---|---|---|
| 41 | 6.74% | 9.85% | 2.83% | 4.25% | 9.57% | 14.10% |
| 42 | 6.85% | 10.01% | 2.89% | 4.33% | 9.74% | 14.34% |
| 43 | 6.97% | 10.19% | 2.94% | 4.41% | 9.91% | 14.60% |
| 44 | 7.07% | 10.34% | 2.99% | 4.48% | 10.06% | 14.82% |
| 45 | 7.17% | 10.50% | 3.03% | 4.55% | 10.20% | 15.05% |
| 46 | 7.27% | 10.65% | 3.08% | 4.62% | 10.35% | 15.27% |
| 47 | 7.39% | 10.83% | 3.13% | 4.70% | 10.52% | 15.53% |
| 48 | 7.49% | 10.98% | 3.18% | 4.77% | 10.67% | 15.75% |
| 49 | 7.60% | 11.14% | 3.23% | 4.84% | 10.83% | 15.98% |
| 50 | 7.71% | 11.31% | 3.28% | 4.92% | 10.99% | 16.23% |
| 51 | 7.77% | 11.39% | 3.30% | 4.95% | 11.07% | 16.34% |
| 52 | 7.79% | 11.43% | 3.31% | 4.97% | 11.10% | 16.40% |
| 53 | 7.73% | 11.33% | 3.29% | 4.93% | 11.02% | 16.26% |
| 54 and over | 7.47% | 10.94% | 3.17% | 4.75% | 10.64% | 15.69% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 0.00% |
| COLA loading factor: | 45.58%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Group 7 (Safety) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 9.92% | 6.66% | 16.58% |
| 16 | 9.92% | 6.66% | 16.58% |
| 17 | 9.92% | 6.66% | 16.58% |
| 18 | 9.92% | 6.66% | 16.58% |
| 19 | 9.92% | 6.66% | 16.58% |
| 20 | 9.92% | 6.66% | 16.58% |
| 21 | 9.92% | 6.66% | 16.58% |
| 22 | 10.08% | 6.78% | 16.86% |
| 23 | 10.23% | 6.88% | 17.11% |
| 24 | 10.39% | 7.00% | 17.39% |
| 25 | 10.55% | 7.11% | 17.66% |
| 26 | 10.72% | 7.23% | 17.95% |
| 27 | 10.89% | 7.35% | 18.24% |
| 28 | 11.07% | 7.48% | 18.55% |
| 29 | 11.25% | 7.61% | 18.86% |
| 30 | 11.41% | 7.72% | 19.13% |
| 31 | 11.57% | 7.83% | 19.40% |
| 32 | 11.73% | 7.95% | 19.68% |
| 33 | 11.91% | 8.08% | 19.99% |
| 34 | 12.09% | 8.20% | 20.29% |
| 35 | 12.27% | 8.33% | 20.60% |
| 36 | 12.46% | 8.47% | 20.93% |
| 37 | 12.67% | 8.61% | 21.28% |
| 38 | 12.87% | 8.76% | 21.63% |
| 39 | 13.08% | 8.91% | 21.99% |
| 40 | 13.31% | 9.07% | 22.38% |

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 41 | 13.55% | 9.24% | 22.79% |
| 42 | 13.80% | 9.42% | 23.22% |
| 43 | 14.02% | 9.57% | 23.59% |
| 44 | 14.19% | 9.69% | 23.88% |
| 45 | 14.26% | 9.74% | 24.00% |
| 46 | 14.30% | 9.77% | 24.07% |
| 47 | 14.29% | 9.76% | 24.05% |
| 48 | 14.11% | 9.64% | 23.75% |
| 49 and over | 13.65% | 9.31% | 22.96% |

| | |
|---|---|
| Interest: | 6.75 % per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 0.50% |
| COLA loading factor: | 70.90%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Group 8 (Safety) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 9.90% | 6.84% | 16.74% |
| 16 | 9.90% | 6.84% | 16.74% |
| 17 | 9.90% | 6.84% | 16.74% |
| 18 | 9.90% | 6.84% | 16.74% |
| 19 | 9.90% | 6.84% | 16.74% |
| 20 | 9.90% | 6.84% | 16.74% |
| 21 | 9.90% | 6.84% | 16.74% |
| 22 | 10.06% | 6.96% | 17.02% |
| 23 | 10.21% | 7.07% | 17.28% |
| 24 | 10.37% | 7.19% | 17.56% |
| 25 | 10.53% | 7.30% | 17.83% |
| 26 | 10.70% | 7.43% | 18.13% |
| 27 | 10.87% | 7.55% | 18.42% |
| 28 | 11.04% | 7.68% | 18.72% |
| 29 | 11.22% | 7.81% | 19.03% |
| 30 | 11.38% | 7.92% | 19.30% |
| 31 | 11.54% | 8.04% | 19.58% |
| 32 | 11.71% | 8.17% | 19.88% |
| 33 | 11.88% | 8.29% | 20.17% |
| 34 | 12.06% | 8.42% | 20.48% |
| 35 | 12.25% | 8.56% | 20.81% |
| 36 | 12.44% | 8.70% | 21.14% |
| 37 | 12.64% | 8.84% | 21.48% |
| 38 | 12.85% | 9.00% | 21.85% |
| 39 | 13.06% | 9.15% | 22.21% |
| 40 | 13.28% | 9.31% | 22.59% |

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 41 | 13.53% | 9.49% | 23.02% |
| 42 | 13.76% | 9.66% | 23.42% |
| 43 | 13.97% | 9.81% | 23.78% |
| 44 | 14.16% | 9.95% | 24.11% |
| 45 | 14.22% | 10.00% | 24.22% |
| 46 | 14.24% | 10.01% | 24.25% |
| 47 | 14.31% | 10.06% | 24.37% |
| 48 | 13.97% | 9.81% | 23.78% |
| 49 and over | 13.68% | 9.60% | 23.28% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 0.25% |
| COLA loading factor: | 72.97%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Group 9 (Safety) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 9.52% | 4.19% | 13.71% |
| 16 | 9.52% | 4.19% | 13.71% |
| 17 | 9.52% | 4.19% | 13.71% |
| 18 | 9.52% | 4.19% | 13.71% |
| 19 | 9.52% | 4.19% | 13.71% |
| 20 | 9.52% | 4.19% | 13.71% |
| 21 | 9.52% | 4.19% | 13.71% |
| 22 | 9.67% | 4.26% | 13.93% |
| 23 | 9.82% | 4.33% | 14.15% |
| 24 | 9.97% | 4.40% | 14.37% |
| 25 | 10.13% | 4.48% | 14.61% |
| 26 | 10.29% | 4.55% | 14.84% |
| 27 | 10.45% | 4.63% | 15.08% |
| 28 | 10.61% | 4.70% | 15.31% |
| 29 | 10.77% | 4.77% | 15.54% |
| 30 | 10.92% | 4.84% | 15.76% |
| 31 | 11.07% | 4.91% | 15.98% |
| 32 | 11.23% | 4.99% | 16.22% |
| 33 | 11.40% | 5.07% | 16.47% |
| 34 | 11.57% | 5.15% | 16.72% |
| 35 | 11.74% | 5.23% | 16.97% |
| 36 | 11.92% | 5.31% | 17.23% |
| 37 | 12.11% | 5.40% | 17.51% |
| 38 | 12.30% | 5.49% | 17.79% |
| 39 | 12.50% | 5.58% | 18.08% |
| 40 | 12.70% | 5.67% | 18.37% |

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 41 | 12.90% | 5.77% | 18.67% |
| 42 | 13.07% | 5.85% | 18.92% |
| 43 | 13.16% | 5.89% | 19.05% |
| 44 | 13.23% | 5.92% | 19.15% |
| 45 | 13.20% | 5.91% | 19.11% |
| 46 | 13.07% | 5.85% | 18.92% |
| 47 | 12.80% | 5.72% | 18.52% |
| 48 | 13.21% | 5.91% | 19.12% |
| 49 and over | 13.72% | 6.15% | 19.87% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 0.00% |
| COLA loading factor: | 46.58%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.00% assumed COLA. |

## Cost Group 10 (Safety) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 9.90% | 6.68% | 16.58% |
| 16 | 9.90% | 6.68% | 16.58% |
| 17 | 9.90% | 6.68% | 16.58% |
| 18 | 9.90% | 6.68% | 16.58% |
| 19 | 9.90% | 6.68% | 16.58% |
| 20 | 9.90% | 6.68% | 16.58% |
| 21 | 9.90% | 6.68% | 16.58% |
| 22 | 10.06% | 6.79% | 16.85% |
| 23 | 10.21% | 6.90% | 17.11% |
| 24 | 10.37% | 7.01% | 17.38% |
| 25 | 10.53% | 7.12% | 17.65% |
| 26 | 10.70% | 7.25% | 17.95% |
| 27 | 10.87% | 7.37% | 18.24% |
| 28 | 11.04% | 7.49% | 18.53% |
| 29 | 11.22% | 7.62% | 18.84% |
| 30 | 11.38% | 7.73% | 19.11% |
| 31 | 11.54% | 7.84% | 19.38% |
| 32 | 11.71% | 7.96% | 19.67% |
| 33 | 11.88% | 8.08% | 19.96% |
| 34 | 12.06% | 8.21% | 20.27% |
| 35 | 12.25% | 8.35% | 20.60% |
| 36 | 12.44% | 8.48% | 20.92% |
| 37 | 12.64% | 8.63% | 21.27% |
| 38 | 12.85% | 8.78% | 21.63% |
| 39 | 13.06% | 8.92% | 21.98% |
| 40 | 13.28% | 9.08% | 22.36% |

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 41 | 13.53% | 9.26% | 22.79% |
| 42 | 13.76% | 9.42% | 23.18% |
| 43 | 13.97% | 9.57% | 23.54% |
| 44 | 14.16% | 9.71% | 23.87% |
| 45 | 14.22% | 9.75% | 23.97% |
| 46 | 14.24% | 9.76% | 24.00% |
| 47 | 14.31% | 9.81% | 24.12% |
| 48 | 13.97% | 9.57% | 23.54% |
| 49 and over | 13.68% | 9.37% | 23.05% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 0.25% |
| COLA loading factor: | 71.17%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Group 11 (Safety) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 10.15% | 6.94% | 17.09% |
| 16 | 10.15% | 6.94% | 17.09% |
| 17 | 10.15% | 6.94% | 17.09% |
| 18 | 10.15% | 6.94% | 17.09% |
| 19 | 10.15% | 6.94% | 17.09% |
| 20 | 10.15% | 6.94% | 17.09% |
| 21 | 10.15% | 6.94% | 17.09% |
| 22 | 10.31% | 7.06% | 17.37% |
| 23 | 10.47% | 7.17% | 17.64% |
| 24 | 10.63% | 7.29% | 17.92% |
| 25 | 10.80% | 7.41% | 18.21% |
| 26 | 10.97% | 7.54% | 18.51% |
| 27 | 11.14% | 7.66% | 18.80% |
| 28 | 11.32% | 7.79% | 19.11% |
| 29 | 11.50% | 7.92% | 19.42% |
| 30 | 11.66% | 8.03% | 19.69% |
| 31 | 11.83% | 8.16% | 19.99% |
| 32 | 12.00% | 8.28% | 20.28% |
| 33 | 12.18% | 8.41% | 20.59% |
| 34 | 12.36% | 8.54% | 20.90% |
| 35 | 12.54% | 8.67% | 21.21% |
| 36 | 12.74% | 8.81% | 21.55% |
| 37 | 12.95% | 8.96% | 21.91% |
| 38 | 13.15% | 9.11% | 22.26% |
| 39 | 13.37% | 9.27% | 22.64% |
| 40 | 13.59% | 9.42% | 23.01% |

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 41 | 13.84% | 9.61% | 23.45% |
| 42 | 14.08% | 9.78% | 23.86% |
| 43 | 14.30% | 9.94% | 24.24% |
| 44 | 14.47% | 10.06% | 24.53% |
| 45 | 14.53% | 10.10% | 24.63% |
| 46 | 14.53% | 10.10% | 24.63% |
| 47 | 14.55% | 10.12% | 24.67% |
| 48 | 14.25% | 9.90% | 24.15% |
| 49 and over | 13.67% | 9.48% | 23.15% |

Interest: 6.75% per annum

Mortality: See *Section 4, Exhibit 1*

Salary increase: Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)

Administrative expense: 0.52% of payroll added to Basic rates

Leave cashout: 3.00%

COLA loading factor: 72.11%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA.

## Cost Group 12 (Safety) — Member Contribution Rates (Membership before January 1, 2013)

*(% of Monthly Payroll)*

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 10.04% | 5.33% | 15.37% |
| 16 | 10.04% | 5.33% | 15.37% |
| 17 | 10.04% | 5.33% | 15.37% |
| 18 | 10.04% | 5.33% | 15.37% |
| 19 | 10.04% | 5.33% | 15.37% |
| 20 | 10.04% | 5.33% | 15.37% |
| 21 | 10.04% | 5.33% | 15.37% |
| 22 | 10.19% | 5.42% | 15.61% |
| 23 | 10.35% | 5.50% | 15.85% |
| 24 | 10.51% | 5.59% | 16.10% |
| 25 | 10.68% | 5.69% | 16.37% |
| 26 | 10.84% | 5.78% | 16.62% |
| 27 | 11.02% | 5.88% | 16.90% |
| 28 | 11.19% | 5.98% | 17.17% |
| 29 | 11.37% | 6.08% | 17.45% |
| 30 | 11.54% | 6.17% | 17.71% |
| 31 | 11.70% | 6.26% | 17.96% |
| 32 | 11.87% | 6.36% | 18.23% |
| 33 | 12.05% | 6.46% | 18.51% |
| 34 | 12.22% | 6.55% | 18.77% |
| 35 | 12.41% | 6.66% | 19.07% |
| 36 | 12.61% | 6.77% | 19.38% |
| 37 | 12.81% | 6.88% | 19.69% |
| 38 | 13.01% | 6.99% | 20.00% |
| 39 | 13.23% | 7.12% | 20.35% |
| 40 | 13.45% | 7.24% | 20.69% |

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 41 | 13.69% | 7.38% | 21.07% |
| 42 | 13.95% | 7.52% | 21.47% |
| 43 | 14.15% | 7.63% | 21.78% |
| 44 | 14.31% | 7.72% | 22.03% |
| 45 | 14.42% | 7.78% | 22.20% |
| 46 | 14.38% | 7.76% | 22.14% |
| 47 | 14.42% | 7.78% | 22.20% |
| 48 | 14.18% | 7.65% | 21.83% |
| 49 and over | 13.49% | 7.26% | 20.75% |

| | |
|---|---|
| Interest: | 6.75% per annum |
| Mortality: | See *Section 4, Exhibit 1* |
| Salary increase: | Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*) |
| Administrative expense: | 0.52% of payroll added to Basic rates |
| Leave cashout: | 1.75% |
| COLA loading factor: | 56.00%, applied to Basic rates prior to adjustment for administrative expenses, based on 2.75% assumed COLA. |

## Cost Groups 1 through 6 (General) — Member Contribution Rates (Membership on or After January 1, 2013)

*(% of Monthly Payroll)*

| Cost Group | Basic | COLA | Total |
|---|---|---|---|
| Cost Group 1 — PEPRA Tier 4 (2% COLA) | 9.09% | 2.09% | 11.18% |
| Cost Group 1 — PEPRA Tier 4 (3% COLA) | 9.59% | 3.22% | 12.81% |
| Cost Group 2 — PEPRA Tier 5 (2% COLA) | 8.48% | 1.90% | 10.38% |
| Cost Group 2 — PEPRA Tier 5 (3%/4% COLA) | 8.48% | 2.81% | 11.29% |
| Cost Group 3 — PEPRA Tier 4 (3% COLA) | 8.54% | 2.98% | 11.52% |
| Cost Group 4 — PEPRA Tier 4 (3% COLA) | 9.17% | 3.07% | 12.24% |
| Cost Group 5 — PEPRA Tier 4 (2% COLA) | 10.08% | 2.31% | 12.39% |
| Cost Group 5 — PEPRA Tier 4 (3% COLA) | 11.31% | 3.83% | 15.14% |
| Cost Group 6 — PEPRA Tier 4 (3% COLA) | 10.18% | 3.41% | 13.59% |

The PEPRA member contribution rates are 50% of the normal cost rate. The Basic rates shown above include an administrative expense load of 0.52% of payroll.

**Note**: It is our understanding that in the determination of pension benefits under the PEPRA formulas, the maximum compensation that can be taken into account should be limited by the compensation limit as noted in *Section 4, Exhibit 2* on page 129 (§7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers for future years (§7522.10(d)).

## Cost Groups 7 through 12 (Safety) — Member Contribution Rates
## (Membership on or After January 1, 2013)
*(% of Monthly Payroll)*

| Cost Group | Basic | COLA | Total |
|---|---|---|---|
| Cost Group 7 — PEPRA Tier D | 14.61% | 6.05% | 20.66% |
| Cost Group 8 — PEPRA Tier D | 12.87% | 5.42% | 18.29% |
| Cost Group 8 — PEPRA Tier E | 12.91% | 3.61% | 16.52% |
| Cost Group 9 — PEPRA Tier E | 13.73% | 3.80% | 17.53% |
| Cost Group 10 — PEPRA Tier D | 13.25% | 5.59% | 18.84% |
| Cost Group 11 — PEPRA Tier D | 11.61% | 4.91% | 16.52% |
| Cost Group 12 — PEPRA Tier D | 14.88% | 6.05% | 20.93% |

The PEPRA member contribution rates are 50% of the normal cost rate. The Basic rates shown above include an administrative expense load of 0.52% of payroll.

**Note**: It is our understanding that in the determination of pension benefits under the PEPRA formulas, the maximum compensation that can be taken into account should be limited by the compensation limit as noted in *Section 4, Exhibit 2* on page 129 (§7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers for future years (§7522.10(d)).

# Appendix A: Definition of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

| Term | Definition |
|---|---|
| Actuarial accrued liability for actives | The equivalent of the accumulated normal costs allocated to the years before the valuation date. |
| Actuarial accrued liability for retirees and beneficiaries | Actuarial present value of lifetime benefits to existing retirees and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits. |
| Actuarial cost method | A procedure allocating the actuarial present value of future benefits to various time periods; a method used to determine the normal cost and the actuarial accrued liability that are used to determine the actuarially determined contribution. |
| Actuarial gain or loss | A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates. To the extent that actual experience differs from that assumed, actuarial accrued liabilities emerge which may be the same as forecasted or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected. |
| Actuarially equivalent | Of equal actuarial present value, determined as of a given date and based on a given set of actuarial assumptions. |
| Actuarial present value | The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions. Each such amount or series of amounts is:<br>Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)<br>Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and<br>Discounted according to an assumed rate (or rates) of return to reflect the time value of money. |

# Appendix A: Definition of Pension Terms

| Term | Definition |
|---|---|
| Actuarial present value of future benefits | The actuarial present value of benefit amounts expected to be paid at various future times under a particular set of actuarial assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The actuarial present value of future benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due. |
| Actuarial valuation | The determination, as of a valuation date, of the Normal cost, actuarial accrued liability, actuarial value of assets, and related actuarial present values for a plan, as well as actuarially determined contributions. |
| Actuarial value of assets | The value of the Plan's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially determined contribution. |
| Actuarially determined | Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the Plan. |
| Actuarially determined contribution | The employer's contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The actuarially determined contribution consists of the employer normal cost and the amortization payment. |
| Amortization method | A method for determining the amortization payment. The most common methods used are level dollar and level percentage of payroll. Under the level dollar method, the amortization payment is one of a stream of payments, all equal, whose actuarial present value is equal to the unfunded actuarial accrued liability. Under the level percentage of pay method, the amortization payment is one of a stream of increasing payments, whose actuarial present value is equal to the unfunded actuarial accrued liability. Under the level percentage of pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase. |
| Amortization payment | The portion of the pension plan contribution, or actuarially determined contribution, that is intended to pay off the unfunded actuarial accrued liability. |

# Appendix A: Definition of Pension Terms

| Term | Definition |
|---|---|
| Assumptions or actuarial assumptions | The estimates upon which the cost of the Plan is calculated, including:<br>**Investment return** — the rate of investment yield that the Plan will earn over the long-term future;<br>**Mortality rates** — the rate or probability of death at a given age for employees and retirees;<br>**Retirement rates** — the rate or probability of retirement at a given age or service;<br>**Disability rates** — the rate or probability of disability retirement at a given age;<br>**Withdrawal rates** — the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement;<br>**Salary increase rates** — the rates of salary increase due to inflation, real wage growth and merit and promotion increases. |
| Closed amortization period | A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See "open amortization period." |
| Decrements | Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal. |
| Defined benefit plan | A retirement plan in which benefits are defined by a formula based on the member's compensation, age and/or years of service. |
| Defined contribution plan | A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance. |
| Employer normal cost | The portion of the normal cost to be paid by the employer. This is equal to the normal cost less expected member contributions. |
| Experience study | A periodic review and analysis of the actual experience of the Plan that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified based on recommendations from the Actuary. |
| Funded ratio | The ratio of the valuation value of assets to the actuarial accrued liability. Plans sometimes also calculate a market funded ratio, using the market value of assets, rather than the valuation value of assets. |
| GASB 67 and GASB 68 | Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves. |

# Appendix A: Definition of Pension Terms

| Term | Definition |
|---|---|
| Investment return | The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next. |
| Negative amortization | Negative amortization is a result of an increase in the unfunded actuarial accrued liability when the amortization payment is less than the interest accrued on the unfunded actuarial accrued liability. |
| Net pension liability | The net pension liability is equal to the total pension liability minus the plan fiduciary net position. |
| Normal cost | The portion of the actuarial present value of future benefits and expenses, if applicable, allocated to a valuation year by the actuarial cost method. Any payment with respect to an unfunded actuarial accrued liability is not part of the normal cost (see "amortization payment"). For pension plan benefits that are provided in part by employee contributions, normal cost refers to the total of member contributions and employer normal cost unless otherwise specifically stated. |
| Open amortization period | An open amortization period is one which is used to determine the amortization payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in each future year in determining the amortization period. |
| Plan fiduciary net position | Market value of assets. |
| Service costs | The portions of the actuarial present value of projected benefit payments that are attributed to valuation years. |
| Total pension liability | The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68. |
| Unfunded actuarial accrued liability | The excess of the actuarial accrued liability over the valuation value of assets. This value may be negative, in which case it may be expressed as a negative unfunded actuarial accrued liability, also called the funding surplus or an overfunded actuarial accrued liability. |
| Valuation date or actuarial valuation date | The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Benefits is determined. The expected benefits to be paid in the future are discounted to this date. |
| Valuation value of assets | The actuarial value of assets reduced by the value of non-valuation reserves. |

# Appendix B: Non-Refundability Factors

## Non-Refundability Factors as of December 31

| Cost Group and Plan | 2023 Legacy Tiers | 2023 PEPRA Tiers | 2022 Legacy Tiers | 2022 PEPRA Tiers |
|---|---|---|---|---|
| **General** | | | | |
| Cost Group 1 – County and Small Districts (Tier 1) | 0.9680 | | 0.9676 | |
| • PEPRA Tier 4 (2% COLA) | | 0.9558 | | 0.9567 |
| • PEPRA Tier 4 (3% COLA) | | 0.9610 | | 0.9611 |
| Cost Group 2 – County and Small Districts (Tier 3) | 0.9558 | | 0.9559 | |
| • PEPRA Tier 5 (2% COLA) | | 0.9558 | | 0.9569 |
| • PEPRA Tier 5 (3%/4% COLA) | | 0.9605 | | 0.9610 |
| Cost Group 3 – Central Contra Costa Sanitary District | 0.9631 | 0.9678 | 0.9628 | 0.9685 |
| Cost Group 4 – Contra Costa Housing Authority | 0.9605 | 0.9614 | 0.9620 | 0.9633 |
| Cost Group 5 – Contra Costa County Fire Protection District | 0.9834 | | 0.9773 | |
| • PEPRA Tier 4 (2% COLA) | | 0.9581 | | 0.9588 |
| • PEPRA Tier 4 (3% COLA) | | 0.9582 | | 0.9621 |
| Cost Group 6 – Small Districts (Non-Enhanced Tiers 1 and 4) | 0.9624 | 0.9532 | 0.9625 | 0.9508 |
| **Safety** | | | | |
| Cost Group 7 – County (Tiers A and D) | 0.9717 | 0.9773 | 0.9710 | 0.9783 |
| Cost Group 8 – Contra Costa Fire Protection District | 0.9774 | | 0.9762 | |
| • PEPRA Tier D (3% COLA) | | 0.9793 | | 0.9803 |
| • PEPRA Tier E (2% COLA) | | 0.9799 | | 0.9785 |
| Cost Group 9 – County (Tiers C and E) | 0.9712 | 0.9753 | 0.9712 | 0.9761 |
| Cost Group 10 – Moraga-Orinda Fire District | 0.9726 | 0.9780 | 0.9732 | 0.9781 |
| Cost Group 11 – San Ramon Valley Fire District | 0.9774 | 0.9808 | 0.9769 | 0.9804 |
| Cost Group 12 – Rodeo-Hercules Fire Protection District | 0.9809 | 0.9741 | 0.9824 | 0.9803 |

# Appendix C: Summary of Cost Groups

## General Cost Groups and Employers

| Cost Group | Employer Name | Benefit Structure | Special Adjustment |
|---|---|---|---|
| 1 | County General | Tier 1 Enhanced/PEPRA Tier 4 | |
| | Local Agency Formation Commission (LAFCO) | Tier 1 Enhanced/PEPRA Tier 4 | Yes |
| | Contra Costa Mosquito and Vector Control District | Tier 1 Enhanced/PEPRA Tier 4 | |
| | Bethel Island Municipal District (Non-Integrated) | Tier 1 Enhanced/PEPRA Tier 4 | |
| | First 5-Children & Families Commission | Tier 1 Enhanced/PEPRA Tier 4 | |
| | Contra Costa County Employees' Retirement Association | Tier 1 Enhanced/PEPRA Tier 4 | |
| | Superior Court | Tier 1 Enhanced/PEPRA Tier 4 | |
| | Moraga-Orinda Fire District (Non-Integrated) | Tier 1 Enhanced/PEPRA Tier 4 | |
| | Rodeo-Hercules Fire Protection District (Non-Integrated) | Tier 1 Enhanced/PEPRA Tier 4 | |
| | San Ramon Valley Fire District (Non-Integrated) | Tier 1 Enhanced/PEPRA Tier 4 | |
| 2 | County General | Tier 3 Enhanced/PEPRA Tier 5 | |
| | In-Home Supportive Services Authority (IHSS) | Tier 3 Enhanced/PEPRA Tier 5 | Yes |
| | Contra Costa Mosquito and Vector Control District | Tier 3 Enhanced/PEPRA Tier 5 | |
| | Superior Court | Tier 3 Enhanced/PEPRA Tier 5 | |
| 3 | Central Contra Costa Sanitary District (Non-Integrated) (CCCSD) | Tier 1 Enhanced/PEPRA Tier 4 | |
| 4 | Contra Costa Housing Authority | Tier 1 Enhanced/PEPRA Tier 4 | |
| 5 | Contra Costa County Fire Protection District (Non-Integrated) (CCCFPD) | Tier 1 Enhanced/PEPRA Tier 4 | |
| 6 | Rodeo Sanitary District | Tier 1 Non-Enhanced/PEPRA Tier 4 | |
| | Byron Brentwood Cemetery | Tier 1 Non-Enhanced/PEPRA Tier 4 | |

# Appendix C: Summary of Cost Groups

## Safety Cost Groups and Employers

| Cost Group | Employer Name | Benefit Structure | Special Adjustment |
|---|---|---|---|
| 7 | County Safety | Tier A Enhanced/PEPRA Tier D | |
| 8 | Contra Costa County Fire Protection District (CCCFPD) | Tier A Enhanced/PEPRA Tier D/E | |
| 9 | County Safety[1] | Tier C Enhanced/PEPRA Tier E | |
| 10 | Moraga-Orinda Fire District | Tier A Enhanced/PEPRA Tier D | |
| 11 | San Ramon Valley Fire District | Tier A Enhanced/PEPRA Tier D | |
| 12 | Rodeo-Hercules Fire Protection District | Tier A Non-Enhanced/PEPRA Tier D | |

**Note**: A special adjustment is made for employers that have a remaining balance of special contributions as described on page 126.

[1] Members hired on or after January 1, 2007.

# Appendix D: Allocation of Valuation Assets

## Cost Groups 1 through 5 — Cashflow for January 1, 2023 to December 31, 2023

| Line Description | Cost Groups 1 & 2 | Cost Group 3 | Cost Group 4 | Cost Group 5 |
|---|---|---|---|---|
| 1. Allocated VVA as of beginning of year | $6,122,172,306 | $493,608,669 | $70,907,252 | $63,031,950 |
| 2. Asset transfer[1] | (1,996,529) | 174,259 | 0 | (524,739) |
| **3. Allocated VVA after asset transfer 1 + 2** | **$6,120,175,777** | **$493,782,928** | **$70,907,252** | **$62,507,211** |
| 4. Total contributions[2] January – June | 146,370,598 | 4,294,082 | 1,777,619 | 1,964,911 |
| *a. Member contributions* | *43,383,380* | *2,109,190* | *384,021* | *495,250* |
| *b. Employer normal contributions* | *102,987,219* | *2,184,892* | *1,393,598* | *1,469,661* |
| *c. Employer special contributions* | *0* | *0* | *0* | *0* |
| 5. Total benefit payments[3] January – June | 166,618,439 | 12,575,905 | 1,989,484 | 2,116,999 |
| 6. Administrative expenses[4] January – June | 5,339,173 | 268,660 | 45,407 | 52,607 |
| **7. Subtotal 3 + 4 − 5 − 6** | **$6,094,588,764** | **$485,232,445** | **$70,649,980** | **$62,302,516** |
| 8. Earnings allocated in proportion to **3** | 146,202,260 | 11,795,769 | 1,693,873 | 1,493,208 |
| **9. Allocated VVA as of middle of year 7 + 8** | **$6,240,791,024** | **$497,028,214** | **$72,343,853** | **$63,795,724** |
| 10. Total contributions[2] July – December | 154,610,453 | 6,009,736 | 1,813,773 | 2,154,561 |
| *a. Member contributions* | *44,213,242* | *2,577,956* | *389,819* | *535,709* |
| *b. Employer normal contributions* | *110,307,196* | *3,431,780* | *1,423,954* | *1,618,853* |
| *c. Employer special contributions* | *90,015* | *0* | *0* | *0* |
| 11. Total benefit payments[3] July – December | 167,878,402 | 12,783,787 | 2,122,520 | 2,153,332 |
| 12. Administrative expenses[4] July – December | 4,996,849 | 251,435 | 42,496 | 49,234 |
| **13. Subtotal 9 + 10 − 11 − 12** | **$6,222,526,226** | **$490,002,728** | **$71,992,610** | **$63,747,720** |
| 14. Earnings allocated in proportion to **9** | 177,687,431 | 14,151,358 | 2,059,770 | 1,816,388 |
| **15. Allocated VVA as of end of year 13 + 14** | **$6,400,213,657** | **$504,154,086** | **$74,052,380** | **$65,564,108** |

**Note:** Results may be slightly off due to rounding.

[1] Starting with the December 31, 2023 valuation, an asset amount equal to the actuarial accrued liability has been transferred for members who have moved between cost groups.
[2] Employer contributions include "member subvention of employer contributions" and exclude "employer subvention of member contributions".
[3] Excludes post-retirement death benefits.
[4] Allocated based on expected administrative expenses from the prior valuation.

# Appendix D: Allocation of Valuation Assets

## Cost Groups 6 through 10 — Cashflow for January 1, 2023 to December 31, 2023

| Line Description | Cost Group 6 | Cost Groups 7 & 9 | Cost Group 8 | Cost Group 10 |
|---|---|---|---|---|
| 1. Allocated VVA as of beginning of year | $8,911,002 | $2,224,164,010 | $1,085,162,619 | $193,367,236 |
| 2. Asset transfer[1] | 0 | 1,808,641 | 847,837 | 0 |
| **3. Allocated VVA after asset transfer 1 + 2** | **$8,911,002** | **$2,225,972,651** | **$1,086,010,456** | **$193,367,236** |
| 4. Total contributions[2] January – June | 170,533 | 45,229,506 | 24,399,268 | 3,631,838 |
| *a. Member contributions* | *78,217* | *9,624,412* | *5,171,755* | *740,034* |
| *b. Employer normal contributions* | *92,316* | *35,605,094* | *19,227,514* | *2,891,804* |
| *c. Employer special contributions* | *0* | *0* | *0* | *0* |
| 5. Total benefit payments[3] January – June | 204,418 | 59,361,762 | 33,104,572 | 6,893,808 |
| 6. Administrative expenses[4] January – June | 7,355 | 759,236 | 401,525 | 59,672 |
| **7. Subtotal 3 + 4 − 5 − 6** | **$8,869,761** | **$2,211,081,159** | **$1,076,903,627** | **$190,045,594** |
| 8. Earnings allocated in proportion to **3** | 212,871 | 53,175,308 | 25,943,239 | 4,619,267 |
| **9. Allocated VVA as of middle of year 7 + 8** | **$9,082,632** | **$2,264,256,467** | **$1,102,846,866** | **$194,664,861** |
| 10. Total contributions[2] July – December | 239,626 | 51,874,391 | 29,256,604 | 4,431,641 |
| *a. Member contributions* | *106,610* | *10,824,869* | *6,098,665* | *838,016* |
| *b. Employer normal contributions* | *133,016* | *41,049,522* | *23,157,939* | *3,593,624* |
| *c. Employer special contributions* | *0* | *0* | *0* | *0* |
| 11. Total benefit payments[3] July – December | 207,439 | 60,456,313 | 33,810,235 | 6,053,305 |
| 12. Administrative expenses[4] July – December | 6,883 | 710,557 | 375,781 | 55,846 |
| **13. Subtotal 9 + 10 − 11 – 12** | **$9,107,935** | **$2,254,963,988** | **$1,097,917,454** | **$192,987,351** |
| 14. Earnings allocated in proportion to **9** | 258,600 | 64,467,775 | 31,400,190 | 5,542,486 |
| **15. Allocated VVA as of end of year 13 + 14** | **$9,366,535** | **$2,319,431,763** | **$1,129,317,644** | **$198,529,837** |

**Note:** Results may be slightly off due to rounding.

[1] Starting with the December 31, 2023 valuation, an asset amount equal to the actuarial accrued liability has been transferred for members who have moved between cost groups.
[2] Employer contributions include “member subvention of employer contributions” and exclude “employer subvention of member contributions”.
[3] Excludes post-retirement death benefits.
[4] Allocated based on expected administrative expenses from the prior valuation.

# Appendix D: Allocation of Valuation Assets

## Cost Groups 11 and 12, Withdrawn Employers and Total Plan — Cashflow for January 1, 2023 to December 31, 2023

| Line Description | Cost Group 11 | Cost Group 12 | Withdrawn Employers | Total Plan |
|---|---|---|---|---|
| 1. Allocated VVA as of beginning of year | $502,547,644 | $45,955,440 | $51,993,934 | $10,861,822,062 |
| 2. Asset transfer[1] | 42,401 | (351,870) | 0 | 0 |
| **3. Allocated VVA after asset transfer 1 + 2** | **$502,590,045** | **$45,603,570** | **$51,993,934** | **$10,861,822,062** |
| 4. Total contributions[2] January – June | 10,985,619 | 1,297,985 | 711,103 | 240,833,062 |
| *a. Member contributions* | *2,025,400* | *171,461* | *0* | *64,183,119* |
| *b. Employer normal contributions* | *8,960,219* | *1,126,524* | *0* | *175,938,840* |
| *c. Employer special contributions* | *0* | *0* | *711,103* | *711,103* |
| 5. Total benefit payments[3] January – June | 13,354,902 | 1,370,645 | 2,576,695 | 300,167,629 |
| 6. Administrative expenses[4] January – June | 167,111 | 15,549 | 0 | 7,116,295 |
| **7. Subtotal 3 + 4 − 5 − 6** | **$500,053,651** | **$45,515,361** | **$50,128,342** | **$10,795,371,200** |
| 8. Earnings allocated in proportion to **3** | 12,006,159 | 1,089,404 | 1,242,061 | 259,473,419 |
| **9. Allocated VVA as of middle of year 7 + 8** | **$512,059,810** | **$46,604,765** | **$51,370,403** | **$11,054,844,619** |
| 10. Total contributions[2] July – December | 12,342,774 | 1,588,296 | 96,763 | 264,418,618 |
| *a. Member contributions* | *2,121,876* | *213,734* | *0* | *67,920,494* |
| *b. Employer normal contributions* | *9,932,899* | *1,374,563* | *0* | *196,023,346* |
| *c. Employer special contributions* | *288,000* | *0* | *96,763* | *474,778* |
| 11. Total benefit payments[3] July – December | 14,186,117 | 1,391,122 | 2,566,160 | 303,608,731 |
| 12. Administrative expenses[4] July – December | 156,397 | 14,551 | 0 | 6,660,029 |
| **13. Subtotal 9 + 10 − 11 – 12** | **$510,060,070** | **$46,787,389** | **$48,901,006** | **$11,008,994,477** |
| 14. Earnings allocated in proportion to **9** | 14,579,336 | 1,326,928 | 1,191,915 | 314,482,177 |
| **15. Allocated VVA as of end of year 13 + 14** | **$524,639,406** | **$48,114,317** | **$50,092,921** | **$11,323,476,654** |

**Note:** Results may be slightly off due to rounding.

[1] Starting with the December 31, 2023 valuation, an asset amount equal to the actuarial accrued liability has been transferred for members who have moved between cost groups.
[2] Employer contributions include "member subvention of employer contributions" and exclude "employer subvention of member contributions".
[3] Excludes post-retirement death benefits.
[4] Allocated based on expected administrative expenses from the prior valuation.

# Appendix E: Recommended Employer Rates

The recommended employer contribution rates found on pages 34 through 42 have been shown on an aggregate basis. For purposes of preparing the contribution rate packet, we have included in this Appendix the recommended legacy tier employer contribution rates as of December 31, 2023 for employers who are in Social Security and for employers who are not in Social Security. For completeness, we have also included the PEPRA tier employer contribution rates.

## Recommended Employer Contribution Rates – For use in Preparing the Contribution Rate Packet

| Cost Group and Tier | Basic First $350 Monthly[1] | Basic Excess of $350 Monthly[1] | Basic All Eligible Pay[2] | COLA First $350 Monthly[1] | COLA Excess of $350 Monthly[1] | COLA All Eligible Pay[2] | Total First $350 Monthly[1] | Total Excess of $350 Monthly[1] | Total All Eligible Pay[2] | All Aggregate Pay |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cost Group 1** | | | | | | | | | | |
| Tier 1 Non-LAFCO | 15.36% | 23.04% | 22.80% | 1.97% | 2.96% | 2.93% | 17.33% | 26.00% | 25.73% | 25.73% |
| Tier 1 LAFCO | 12.18% | 18.27% | N/A | 1.98% | 2.97% | N/A | 14.16% | 21.24% | N/A | 21.03% |
| Tier 4 (3% COLA) Non-LAFCO | N/A | N/A | 19.19% | N/A | N/A | 2.47% | N/A | N/A | 21.66% | 21.66% |
| Tier 4 (3% COLA) LAFCO | N/A | N/A | 14.49% | N/A | N/A | 2.47% | N/A | N/A | 16.96% | 16.96% |
| Tier 4 (2% COLA) | N/A | N/A | 18.69% | N/A | N/A | 1.34% | N/A | N/A | 20.03% | 20.03% |
| **Cost Group 2** | | | | | | | | | | |
| Tier 3 Non-IHSS | 14.48% | 21.72% | N/A | 1.78% | 2.66% | N/A | 16.26% | 24.38% | N/A | 24.10% |
| Tier 3 IHSS | 14.18% | 21.26% | N/A | 1.66% | 2.50% | N/A | 15.84% | 23.76% | N/A | 23.46% |
| Tier 5 (3%/4% COLA) Non-IHSS | N/A | N/A | 18.08% | N/A | N/A | 2.06% | N/A | N/A | 20.14% | 20.14% |
| Tier 5 (3%/4% COLA) IHSS | N/A | N/A | 17.60% | N/A | N/A | 1.90% | N/A | N/A | 19.50% | 19.50% |
| Tier 5 (2% COLA) Non-IHSS | N/A | N/A | 18.08% | N/A | N/A | 1.15% | N/A | N/A | 19.23% | 19.23% |
| Tier 5 (2% COLA) IHSS | N/A | N/A | 17.60% | N/A | N/A | 0.99% | N/A | N/A | 18.59% | 18.59% |

[1] If employer is in Social Security.
[2] For legacy tier, applies to employer who is not in Social Security. For PEPRA tier, applies to all employers.

# Appendix E: Recommended Employer Rates

| Cost Group and Tier | Basic First $350 Monthly[1] | Basic Excess of $350 Monthly[1] | Basic All Eligible Pay[2] | COLA First $350 Monthly[1] | COLA Excess of $350 Monthly[1] | COLA All Eligible Pay[2] | Total First $350 Monthly[1] | Total Excess of $350 Monthly[1] | Total All Eligible Pay[2] | All Aggregate Pay |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cost Group 3** | | | | | | | | | | |
| CCCSD Tier 1 | N/A | N/A | 14.66% | N/A | N/A | 5.31% | N/A | N/A | 19.97% | 19.97% |
| CCCSD Tier 4 (3% COLA) | N/A | N/A | 9.71% | N/A | N/A | 4.41% | N/A | N/A | 14.12% | 14.12% |
| **Cost Group 4** | | | | | | | | | | |
| Contra Costa Housing Authority Tier 1 | 14.76% | 22.14% | N/A | 5.29% | 7.94% | N/A | 20.05% | 30.08% | N/A | 29.65% |
| Contra Costa Housing Authority Tier 4 (3% COLA) | N/A | N/A | 18.25% | N/A | N/A | 7.18% | N/A | N/A | 25.43% | 25.43% |
| **Cost Group 5** | | | | | | | | | | |
| CCCFPD Tier 1 | N/A | N/A | 28.53% | N/A | N/A | 15.19% | N/A | N/A | 43.72% | 43.72% |
| CCCFPD Tier 4 (3% COLA) | N/A | N/A | 24.14% | N/A | N/A | 14.91% | N/A | N/A | 39.05% | 39.05% |
| CCCFPD Tier 4 (2% COLA) | N/A | N/A | 22.91% | N/A | N/A | 13.39% | N/A | N/A | 36.30% | 36.30% |
| **Cost Group 6** | | | | | | | | | | |
| Non-Enhanced District Tier 1 | 8.60% | 12.89% | N/A | 2.54% | 3.82% | N/A | 11.14% | 16.71% | N/A | 16.57% |
| Non-Enhanced District Tier 4 (3% COLA) | N/A | N/A | 10.31% | N/A | N/A | 3.41% | N/A | N/A | 13.72% | 13.72% |
| **Cost Group 7** | | | | | | | | | | |
| County Tier A | N/A | N/A | 32.94% | N/A | N/A | 27.59% | N/A | N/A | 60.53% | 60.53% |
| County Tier D | N/A | N/A | 24.46% | N/A | N/A | 26.16% | N/A | N/A | 50.62% | 50.62% |
| **Cost Group 8** | | | | | | | | | | |
| CCCFPD Tier A | N/A | N/A | 31.43% | N/A | N/A | 35.72% | N/A | N/A | 67.15% | 67.15% |
| CCCFPD Tier D | N/A | N/A | 20.21% | N/A | N/A | 33.36% | N/A | N/A | 53.57% | 53.57% |
| CCCFPD Tier E | N/A | N/A | 20.25% | N/A | N/A | 31.55% | N/A | N/A | 51.80% | 51.80% |

[1] If employer is in Social Security.
[2] For legacy tier, applies to employer who is not in Social Security. For PEPRA tier, applies to all employers.

# Appendix E: Recommended Employer Rates

| Cost Group and Tier | Basic First $350 Monthly[1] | Basic Excess of $350 Monthly[1] | Basic All Eligible Pay[2] | COLA First $350 Monthly[1] | COLA Excess of $350 Monthly[1] | COLA All Eligible Pay[2] | Total First $350 Monthly[1] | Total Excess of $350 Monthly[1] | Total All Eligible Pay[2] | All Aggregate Pay |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cost Group 9** | | | | | | | | | | |
| County Tier C | N/A | N/A | 31.59% | N/A | N/A | 24.82% | N/A | N/A | 56.41% | 56.41% |
| County Tier E | N/A | N/A | 23.58% | N/A | N/A | 23.91% | N/A | N/A | 47.49% | 47.49% |
| **Cost Group 10** | | | | | | | | | | |
| Moraga-Orinda FD Tier A | N/A | N/A | 37.87% | N/A | N/A | 56.07% | N/A | N/A | 93.94% | 93.94% |
| Moraga-Orinda FD Tier D | N/A | N/A | 29.21% | N/A | N/A | 54.40% | N/A | N/A | 83.61% | 83.61% |
| **Cost Group 11** | | | | | | | | | | |
| San Ramon FD Tier A | N/A | N/A | 34.43% | N/A | N/A | 21.47% | N/A | N/A | 55.90% | 55.90% |
| San Ramon FD Tier D | N/A | N/A | 22.06% | N/A | N/A | 18.48% | N/A | N/A | 40.54% | 40.54% |
| **Cost Group 12** | | | | | | | | | | |
| Rodeo-Hercules FPD Tier A | N/A | N/A | 46.52% | N/A | N/A | 32.08% | N/A | N/A | 78.60% | 78.60% |
| Rodeo-Hercules FPD Tier D | N/A | N/A | 42.09% | N/A | N/A | 31.18% | N/A | N/A | 73.27% | 73.27% |

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[1] If employer is in Social Security.
[2] For legacy tier, applies to employer who is not in Social Security. For PEPRA tier, applies to all employers.

Segal

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Meeting Date
09/11/2024
Agenda Item
#7

**Via Email**

July 26, 2024

Ms. Christina Dunn
Chief Executive Officer
Contra Costa County Employees' Retirement Association
1200 Concord Avenue, Suite 300
Concord, CA 94520

**Re: Contra Costa County Employees' Retirement Association (CCCERA)
Contribution Rate Packet for the Period from July 1, 2025 through June 30, 2026**

Dear Christina:

As requested, we have prepared the enclosed contribution rate packet that contains the employer and member contribution rates for the period from July 1, 2025 through June 30, 2026.

The following documents are enclosed:

- Contribution Rate Packet Cover Page
- Contribution Rate Packet Table of Contents
- Contribution Rate Packet Cover Memo
- Board of Supervisors Resolution
- Employer Contribution Rates (Exhibits 1 through 12)
- Member Contribution Rates (Exhibits A through M)*
- Examples for Subvention and Employee Cost Sharing
- Prepayment Discount Factor for 2025-2026

The undersigned is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

* As requested, we have included the names of the employers for each member rates tables for easy reference.

Please let us know if you have any questions.

Sincerely,

Andy Yeung

Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

AW/bbf

Enclosures (5899868)

cc: Henry Gudino

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Contra Costa County Employees' Retirement Association

# CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

# CONTRIBUTION RATE PACKET FOR July 1, 2025 through June 30, 2026

1200 Concord Avenue Suite 300 Concord CA 94520 925.521.3960
FAX: 925.521.3969 www.cccera.org

## CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

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Contra Costa County Employees' Retirement Association

# MEMORANDUM

Date: September 11, 2024

To: Interested Parties and Participating Employers

From: Christina Dunn, Chief Executive Officer

Subject: Contribution Rates Effective July 1, 2025

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At its September 11, 2024 meeting, the Retirement Board reviewed the actuary's valuation report for the year ending December 31, 2023 and adopted the recommended employer and employee contribution rates, which will become effective on July 1, 2025. A copy of the December 31, 2023 Actuarial Valuation can be found on CCCERA's website at www.cccera.org under the Actuarial Valuations link.

Enclosed are the employer and employee contribution rates to be used effective July 1, 2025 through June 30, 2026.

Please note the following:

- ✓ **The rates are effective July 1, 2025 through June 30, 2026 and have not yet been adopted by the County Board of Supervisors.**
- ✓ **The rates are BEFORE ANY EMPLOYER SUBVENTION of the employee contribution.** The rates quoted here are the employer required rates without taking into consideration any employer subvention of employee contributions. A convenient methodology for adding subvention is included for your use on page 30. Note that subvention is not always permitted for PEPRA members.
- ✓ **The rates are BEFORE ANY INCREASE IN EMPLOYEE RATE to pay a portion of the employer contribution.**
  If an employee's rate needs to be increased to pay a portion of the employer contribution, both employee and employer rates would need to be adjusted accordingly. A convenient methodology for adding subvention is included for your use on page 30.

# THE BOARD OF SUPERVISORS OF CONTRA COSTA COUNTY, CALIFORNIA

Adopted this Order on ____________________________________, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

SUBJECT: Approving Contribution Rates to be charged by the Contra Costa County Employees' Retirement Association. Resolution No.______

Pursuant to Government Code Section 31454 and on recommendation of the Board of the Contra Costa County Employees' Retirement Association, BE IT RESOLVED that the following contribution rates are approved to be effective for the period July 1, 2025 through June 30, 2026.

I. Employer Contribution Rates for Basic and Cost-of-Living Components and Non-refundability Discount Factors

A. For General Members (Sec. 31676.11, Sec. 31676.16 and Sec. 7522.20(a)) See attached Exhibits 1 through 6

B. For Safety Members (Sec. 31664, Sec. 31664.1 and Sec. 7522.25(d)) See attached Exhibits 7 through 12

II. Employee Contribution Rates for Basic and Cost-of-Living Components

See attached Exhibits A through M

The following employers made UAAL prepayments and their Unfunded Actuarial Accrued Liability (UAAL) contribution rates reflect those UAAL prepayments:

- Central Contra Costa Sanitary District made a UAAL prepayment in 2013, 2014, 2015 and 2021 which affected contribution rates for that employer.
- Local Agency Formation Commission (LAFCO) made a UAAL prepayment in 2017, 2019, 2020 and 2021 which affected contribution rates for that employer.
- In-Home Supportive Services Authority (IHSS) made a UAAL prepayment in 2023 which affected contribution rates for that employer.
- San Ramon Valley Fire Protection District made a UAAL prepayment in 2017, 2018, 2019, 2020, 2021, 2022 and 2023 which affected contribution rates for the Safety members of that employer.

# Exhibit 1

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #1**

| Cost Group #1 | Basic: In Social Security[1] | Basic: Not In Social Security[2] | COLA: In Social Security[1] | COLA: Not In Social Security[2] | Non-Refundability Factor |
|---|---|---|---|---|---|
| General Tier 1 Non-LAFCO (in Social Security) | 23.04% | N/A | 2.96% | N/A | 0.9680 |
| General Tier 1 Non-LAFCO (not in Social Security) | N/A | 22.80% | N/A | 2.93% | 0.9680 |
| General Tier 1 LAFCO | 18.27% | N/A | 2.97% | N/A | 0.9680 |
| General Tier 4 (3% COLA) Non-LAFCO | 19.19% | | 2.47% | | 0.9610 |
| General Tier 4 (3% COLA) LAFCO | 14.49% | | 2.47% | | 0.9610 |
| General Tier 4 (2% COLA) | 18.69% | | 1.34% | | 0.9558 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- County General
- Local Agency Formation Commission (LAFCO)
- CC Mosquito & Vector Control District
- Bethel Island Municipal Improvement District
- First 5 - Children and Families Commission
- Contra Costa County Employees' Retirement Association
- Superior Court
- Moraga-Orinda Fire Protection District
- Rodeo-Hercules Fire Protection District
- San Ramon Valley Fire Protection District

**Tiers:**

- Tier 1 Enhanced (2% @ 55)
- Tier 4 (2.5% @ 67)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 2

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #2**

| Cost Group #2 | Basic | | COLA | | Non-Refundability Factor |
|---|---|---|---|---|---|
| | In Social Security[1] | Not In Social Security[2] | In Social Security[1] | Not In Social Security[2] | |
| General Tier 3 Non-IHSS | 21.72% | N/A | 2.66% | N/A | 0.9558 |
| General Tier 3 IHSS | 21.26% | N/A | 2.50% | N/A | 0.9558 |
| General Tier 5 (3%/4% COLA) Non-IHSS | 18.08% | | 2.06% | | 0.9605 |
| General Tier 5 (3%/4% COLA) IHSS | 17.60% | | 1.90% | | 0.9605 |
| General Tier 5 (2% COLA) Non-IHSS | 18.08% | | 1.15% | | 0.9558 |
| General Tier 5 (2% COLA) IHSS | 17.60% | | 0.99% | | 0.9558 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- County General
- In-Home Supportive Services Authority
- CC Mosquito & Vector Control District
- Superior Court

**Tiers:**

- Tier 3 Enhanced (2% @ 55)
- Tier 5 (2.5% @ 67)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 3

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #3**

| Cost Group #3 | Basic | | COLA | | Non-Refundability Factor |
|---|---|---|---|---|---|
| | In Social Security[1] | Not In Social Security[2] | In Social Security[1] | Not In Social Security[2] | |
| Central Contra Costa Sanitary District General Tier 1 | N/A | 14.66% | N/A | 5.31% | 0.9631 |
| Central Contra Costa Sanitary District General Tier 4 (3% COLA) | 9.71% | | 4.41% | | 0.9678 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- Central Contra Costa Sanitary District

**Tiers:**

- Tier 1 Enhanced (2% @ 55)
- Tier 4 (2.5% @ 67)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 4

**Contra Costa County Employees' Retirement Association**
**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #4**

| Cost Group #4 | Basic | | COLA | | Non-Refundability Factor |
|---|---|---|---|---|---|
| | In Social Security[1] | Not In Social Security[2] | In Social Security[1] | Not In Social Security[2] | |
| Contra Costa Housing Authority General Tier 1 | 22.14% | N/A | 7.94% | N/A | 0.9605 |
| Contra Costa Housing Authority General Tier 4 (3% COLA) | 18.25% | | 7.18% | | 0.9614 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- Contra Costa Housing Authority

**Tiers:**

- Tier 1 Enhanced (2% @ 55)
- Tier 4 (2.5% @ 67)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 5

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #5**

| Cost Group #5 | Basic: In Social Security[1] | Basic: Not In Social Security[2] | COLA: In Social Security[1] | COLA: Not In Social Security[2] | Non-Refundability Factor |
|---|---|---|---|---|---|
| Contra Costa County Fire Protection District General Tier 1 | N/A | 28.53% | N/A | 15.19% | 0.9834 |
| Contra Costa County Fire Protection District General Tier 4 (3% COLA) | 24.14% | | 14.91% | | 0.9582 |
| Contra Costa County Fire Protection District General Tier 4 (2% COLA) | 22.91% | | 13.39% | | 0.9581 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- Contra Costa County Fire Protection District

**Tiers:**

- Tier 1 Enhanced (2% @ 55)
- Tier 4 (2.5% @ 67)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 6

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #6**

| Cost Group #6 | Basic: In Social Security[1] | Basic: Not In Social Security[2] | COLA: In Social Security[1] | COLA: Not In Social Security[2] | Non-Refundability Factor |
|---|---|---|---|---|---|
| Non-Enhanced District General Tier 1 | 12.89% | N/A | 3.82% | N/A | 0.9624 |
| Non-Enhanced District General Tier 4 (3% COLA) | 10.31% | | 3.41% | | 0.9532 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- Rodeo Sanitary District
- Byron Brentwood Cemetery District

**Tiers:**

- Tier 1 Non-Enhanced (1.67% @ 55)
- Tier 4 (2.5% @ 67)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 7

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #7**

| Cost Group #7 | Basic | | COLA | | Non-Refundability Factor |
|---|---|---|---|---|---|
| | In Social Security[1] | Not In Social Security[2] | In Social Security[1] | Not In Social Security[2] | |
| County Safety Tier A | N/A | 32.94% | N/A | 27.59% | 0.9717 |
| County Safety Tier D | 24.46% | | 26.16% | | 0.9773 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- County Safety

**Tiers:**

- Tier A Enhanced (3% @ 50)
- Tier D (2.7% @ 57)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 8

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #8**

| Cost Group #8 | Basic | | COLA | | Non-Refundability Factor |
|---|---|---|---|---|---|
| | In Social Security[1] | Not In Social Security[2] | In Social Security[1] | Not In Social Security[2] | |
| Contra Costa County Fire Protection District Safety Tier A | N/A | 31.43% | N/A | 35.72% | 0.9774 |
| Contra Costa County Fire Protection District Safety Tier D | 20.21% | | 33.36% | | 0.9793 |
| Contra Costa County Fire Protection District Safety Tier E | 20.25% | | 31.55% | | 0.9799 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- Contra Costa County Fire Protection District

**Tiers:**

- Tier A Enhanced (3% @ 50)
- Tier D (2.7% @ 57)
- Tier E (2.7% @ 57)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 9

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #9**

| | Basic | | COLA | | Non-Refundability Factor |
|---|---|---|---|---|---|
| **Cost Group #9** | **In Social Security[1]** | **Not In Social Security[2]** | **In Social Security[1]** | **Not In Social Security[2]** | |
| County Safety Tier C | N/A | 31.59% | N/A | 24.82% | 0.9712 |
| County Safety Tier E | 23.58% | | 23.91% | | 0.9753 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- County Safety (Members hired on or after January 1, 2007)

**Tiers:**

- Tier C Enhanced (3% @ 50)
- Tier E (2.7% @ 57)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 10

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #10**

| Cost Group #10 | Basic: In Social Security[1] | Basic: Not In Social Security[2] | COLA: In Social Security[1] | COLA: Not In Social Security[2] | Non-Refundability Factor |
|---|---|---|---|---|---|
| Moraga-Orinda Fire Protection District Safety Tier A | N/A | 37.87% | N/A | 56.07% | 0.9726 |
| Moraga-Orinda Fire Protection District Safety Tier D | 29.21% | | 54.40% | | 0.9780 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- Moraga-Orinda Fire Protection District

**Tiers:**

- Tier A Enhanced (3% @ 50)
- Tier D (2.7% @ 57)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit 11

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #11**

| | Basic | | COLA | | |
|---|---|---|---|---|---|
| **Cost Group #11** | **In Social Security[1]** | **Not In Social Security[2]** | **In Social Security[1]** | **Not In Social Security[2]** | **Non-Refundability Factor** |
| San Ramon Valley Fire Protection District Safety Tier A | N/A | 34.43% | N/A | 21.47% | 0.9774 |
| San Ramon Valley Fire Protection District Safety Tier D | 22.06% | | 18.48% | | 0.9808 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- San Ramon Valley Fire Protection District

**Tiers:**

- Tier A Enhanced (3% @ 50)
- Tier D (2.7% @ 57)

[1] If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

## Exhibit 12

**Contra Costa County Employees' Retirement Association**

**Employer Contribution Rates Effective for July 1, 2025 through June 30, 2026 for Cost Group #12**

| Cost Group #12 | Basic In Social Security[1] | Basic Not In Social Security[2] | COLA In Social Security[1] | COLA Not In Social Security[2] | Non-Refundability Factor |
|---|---|---|---|---|---|
| Rodeo-Hercules Fire Protection District Safety Tier A | N/A | 46.52% | N/A | 32.08% | 0.9809 |
| Rodeo-Hercules Fire Protection District Safety Tier D | 42.09% | | 31.18% | | 0.9741 |

Basic rates shown include an administrative expense load of 0.65% of payroll.

**Employers:**

- Rodeo-Hercules Fire Protection District

**Tiers:**

- Tier A Non-Enhanced (2% @ 50)
- Tier D (2.7% @ 57)

1 If employer is in Social Security, the rate should only be applied to monthly compensation in excess of $116.67. The rate should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

2 For legacy tier, applies to employer who is not in Social Security and the rate should be applied to all compensation up to the annual IRC 401(a)(17) compensation limit. For PEPRA tier, applies to all employers and the rate should be applied to all compensation up to the applicable annual Gov. Code 7522.10(d) compensation limit.

# Exhibit A

## General Cost Group #1 Non-PEPRA Member Contribution Rates

### Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| | Basic[2] | | | Total | |
|---|---|---|---|---|---|
| Entry Age | In Social Security | Not In Social Security | COLA | In Social Security | Not In Social Security |
| 15 | 5.46% | 5.45% | 2.81% | 8.27% | 8.26% |
| 16 | 5.56% | 5.55% | 2.87% | 8.43% | 8.42% |
| 17 | 5.66% | 5.65% | 2.93% | 8.59% | 8.58% |
| 18 | 5.76% | 5.75% | 2.98% | 8.74% | 8.73% |
| 19 | 5.86% | 5.85% | 3.04% | 8.90% | 8.89% |
| 20 | 5.96% | 5.95% | 3.10% | 9.06% | 9.05% |
| 21 | 6.07% | 6.06% | 3.16% | 9.23% | 9.22% |
| 22 | 6.18% | 6.17% | 3.22% | 9.40% | 9.39% |
| 23 | 6.28% | 6.27% | 3.28% | 9.56% | 9.55% |
| 24 | 6.40% | 6.39% | 3.35% | 9.75% | 9.74% |
| 25 | 6.51% | 6.50% | 3.41% | 9.92% | 9.91% |
| 26 | 6.62% | 6.61% | 3.47% | 10.09% | 10.08% |
| 27 | 6.74% | 6.73% | 3.54% | 10.28% | 10.27% |
| 28 | 6.86% | 6.85% | 3.61% | 10.47% | 10.46% |
| 29 | 6.98% | 6.97% | 3.68% | 10.66% | 10.65% |
| 30 | 7.11% | 7.10% | 3.75% | 10.86% | 10.85% |
| 31 | 7.23% | 7.22% | 3.82% | 11.05% | 11.04% |
| 32 | 7.36% | 7.35% | 3.89% | 11.25% | 11.24% |
| 33 | 7.49% | 7.48% | 3.97% | 11.46% | 11.45% |
| 34 | 7.63% | 7.62% | 4.05% | 11.68% | 11.67% |
| 35 | 7.77% | 7.76% | 4.13% | 11.90% | 11.89% |
| 36 | 7.91% | 7.90% | 4.21% | 12.12% | 12.11% |
| 37 | 8.05% | 8.04% | 4.29% | 12.34% | 12.33% |
| 38 | 8.20% | 8.19% | 4.37% | 12.57% | 12.56% |
| 39 | 8.36% | 8.35% | 4.46% | 12.82% | 12.81% |
| 40 | 8.51% | 8.50% | 4.55% | 13.06% | 13.05% |
| 41 | 8.66% | 8.65% | 4.64% | 13.30% | 13.29% |
| 42 | 8.82% | 8.81% | 4.73% | 13.55% | 13.54% |
| 43 | 8.97% | 8.96% | 4.81% | 13.78% | 13.77% |
| 44 | 9.13% | 9.12% | 4.90% | 14.03% | 14.02% |
| 45 | 9.29% | 9.28% | 4.99% | 14.28% | 14.27% |
| 46 | 9.45% | 9.44% | 5.09% | 14.54% | 14.53% |
| 47 | 9.61% | 9.60% | 5.18% | 14.79% | 14.78% |
| 48 | 9.77% | 9.76% | 5.27% | 15.04% | 15.03% |
| 49 | 9.91% | 9.90% | 5.35% | 15.26% | 15.25% |
| 50 | 10.06% | 10.05% | 5.43% | 15.49% | 15.48% |
| 51 | 10.22% | 10.21% | 5.53% | 15.75% | 15.74% |
| 52 | 10.38% | 10.37% | 5.62% | 16.00% | 15.99% |
| 53 | 10.54% | 10.53% | 5.71% | 16.25% | 16.24% |
| 54 | 10.68% | 10.67% | 5.79% | 16.47% | 16.46% |
| 55 | 10.82% | 10.81% | 5.87% | 16.69% | 16.68% |
| 56 | 10.93% | 10.92% | 5.93% | 16.86% | 16.85% |
| 57 | 10.92% | 10.91% | 5.92% | 16.84% | 16.83% |
| 58 | 10.86% | 10.85% | 5.89% | 16.75% | 16.74% |
| 59 & Over | 10.62% | 10.61% | 5.75% | 16.37% | 16.36% |

Administrative Expense: 0.52% of payroll added to Basic Rates

COLA Loading: 57.02% applied to Basic Rates prior to adjustment for administrative expenses

1 For members in Social Security, the "In Social Security" rate should only be applied to monthly compensation in excess of $116.67. All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

2 The Basic Rate for members in Social Security is increased by 0.01% to account for the administrative expense rate of 0.52% that is applicable to the first $116.67 of compensation.

# Exhibit A

**Employers:**

- County General
- LAFCO
- CC Mosquito & Vector Control District
- Bethel Island Municipal Improvement District
- First 5 - Children and Families Commission
- Contra Costa County Employees' Retirement Association
- Superior Court
- Moraga-Orinda Fire Protection District
- Rodeo-Hercules Fire Protection District
- San Ramon Valley Fire Protection District

Tier:

- Tier 1 Enhanced (2% @ 55)

# Exhibit B

## General Cost Group #2 Non-PEPRA Member Contribution Rates

## Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| | Basic[2] | | | Total | |
|---|---|---|---|---|---|
| Entry Age | In Social Security | Not In Social Security | COLA | In Social Security | Not In Social Security |
| 15 | 5.45% | 5.44% | 2.45% | 7.90% | 7.89% |
| 16 | 5.55% | 5.54% | 2.50% | 8.05% | 8.04% |
| 17 | 5.65% | 5.64% | 2.55% | 8.20% | 8.19% |
| 18 | 5.75% | 5.74% | 2.60% | 8.35% | 8.34% |
| 19 | 5.85% | 5.84% | 2.65% | 8.50% | 8.49% |
| 20 | 5.95% | 5.94% | 2.70% | 8.65% | 8.64% |
| 21 | 6.06% | 6.05% | 2.75% | 8.81% | 8.80% |
| 22 | 6.16% | 6.15% | 2.80% | 8.96% | 8.95% |
| 23 | 6.27% | 6.26% | 2.86% | 9.13% | 9.12% |
| 24 | 6.38% | 6.37% | 2.91% | 9.29% | 9.28% |
| 25 | 6.49% | 6.48% | 2.97% | 9.46% | 9.45% |
| 26 | 6.61% | 6.60% | 3.03% | 9.64% | 9.63% |
| 27 | 6.73% | 6.72% | 3.09% | 9.82% | 9.81% |
| 28 | 6.85% | 6.84% | 3.15% | 10.00% | 9.99% |
| 29 | 6.97% | 6.96% | 3.21% | 10.18% | 10.17% |
| 30 | 7.09% | 7.08% | 3.26% | 10.35% | 10.34% |
| 31 | 7.22% | 7.21% | 3.33% | 10.55% | 10.54% |
| 32 | 7.35% | 7.34% | 3.39% | 10.74% | 10.73% |
| 33 | 7.48% | 7.47% | 3.46% | 10.94% | 10.93% |
| 34 | 7.61% | 7.60% | 3.52% | 11.13% | 11.12% |
| 35 | 7.75% | 7.74% | 3.59% | 11.34% | 11.33% |
| 36 | 7.89% | 7.88% | 3.66% | 11.55% | 11.54% |
| 37 | 8.04% | 8.03% | 3.74% | 11.78% | 11.77% |
| 38 | 8.18% | 8.17% | 3.81% | 11.99% | 11.98% |
| 39 | 8.33% | 8.32% | 3.88% | 12.21% | 12.20% |
| 40 | 8.49% | 8.48% | 3.96% | 12.45% | 12.44% |
| 41 | 8.64% | 8.63% | 4.04% | 12.68% | 12.67% |
| 42 | 8.80% | 8.79% | 4.12% | 12.92% | 12.91% |
| 43 | 8.95% | 8.94% | 4.19% | 13.14% | 13.13% |
| 44 | 9.11% | 9.10% | 4.27% | 13.38% | 13.37% |
| 45 | 9.27% | 9.26% | 4.35% | 13.62% | 13.61% |
| 46 | 9.43% | 9.42% | 4.43% | 13.86% | 13.85% |
| 47 | 9.59% | 9.58% | 4.51% | 14.10% | 14.09% |
| 48 | 9.74% | 9.73% | 4.58% | 14.32% | 14.31% |
| 49 | 9.90% | 9.89% | 4.66% | 14.56% | 14.55% |
| 50 | 10.04% | 10.03% | 4.73% | 14.77% | 14.76% |
| 51 | 10.20% | 10.19% | 4.81% | 15.01% | 15.00% |
| 52 | 10.36% | 10.35% | 4.89% | 15.25% | 15.24% |
| 53 | 10.51% | 10.50% | 4.97% | 15.48% | 15.47% |
| 54 | 10.65% | 10.64% | 5.04% | 15.69% | 15.68% |
| 55 | 10.78% | 10.77% | 5.10% | 15.88% | 15.87% |
| 56 | 10.87% | 10.86% | 5.15% | 16.02% | 16.01% |
| 57 | 10.92% | 10.91% | 5.17% | 16.09% | 16.08% |
| 58 | 10.87% | 10.86% | 5.15% | 16.02% | 16.01% |
| 59 & Over | 10.33% | 10.32% | 4.88% | 15.21% | 15.20% |

Administrative Expense: 0.52% of payroll added to Basic Rates

COLA Loading: 49.77% applied to Basic Rates prior to adjustment for administrative expenses

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[1] For members in Social Security, the "In Social Security" rate should only be applied to monthly compensation in excess of $116.67. All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] The Basic Rate for members in Social Security is increased by 0.01% to account for the administrative expense rate of 0.52% that is applicable to the first $116.67 of compensation.

## Exhibit B

**Employers:**

- County General
- In-Home Supportive Services Authority
- CC Mosquito & Vector Control District
- Superior Court

Tier:

- Tier 3 Enhanced (2% @ 55)

# Exhibit C

## General Cost Group #3 Non-PEPRA Member Contribution Rates

**Effective for July 1, 2025 through June 30, 2026**

Expressed as a Percentage of Monthly Payroll[1]

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 5.66% | 2.87% | 8.53% |
| 16 | 5.76% | 2.92% | 8.68% |
| 17 | 5.86% | 2.98% | 8.84% |
| 18 | 5.97% | 3.04% | 9.01% |
| 19 | 6.07% | 3.10% | 9.17% |
| 20 | 6.18% | 3.16% | 9.34% |
| 21 | 6.29% | 3.22% | 9.51% |
| 22 | 6.40% | 3.28% | 9.68% |
| 23 | 6.51% | 3.34% | 9.85% |
| 24 | 6.63% | 3.41% | 10.04% |
| 25 | 6.75% | 3.48% | 10.23% |
| 26 | 6.87% | 3.54% | 10.41% |
| 27 | 6.99% | 3.61% | 10.60% |
| 28 | 7.11% | 3.68% | 10.79% |
| 29 | 7.24% | 3.75% | 10.99% |
| 30 | 7.37% | 3.82% | 11.19% |
| 31 | 7.50% | 3.89% | 11.39% |
| 32 | 7.63% | 3.97% | 11.60% |
| 33 | 7.77% | 4.04% | 11.81% |
| 34 | 7.91% | 4.12% | 12.03% |
| 35 | 8.05% | 4.20% | 12.25% |
| 36 | 8.20% | 4.28% | 12.48% |
| 37 | 8.35% | 4.37% | 12.72% |
| 38 | 8.50% | 4.45% | 12.95% |
| 39 | 8.66% | 4.54% | 13.20% |
| 40 | 8.82% | 4.63% | 13.45% |
| 41 | 8.98% | 4.72% | 13.70% |
| 42 | 9.14% | 4.81% | 13.95% |
| 43 | 9.30% | 4.90% | 14.20% |
| 44 | 9.46% | 4.99% | 14.45% |
| 45 | 9.62% | 5.08% | 14.70% |
| 46 | 9.79% | 5.17% | 14.96% |
| 47 | 9.95% | 5.26% | 15.21% |
| 48 | 10.11% | 5.35% | 15.46% |
| 49 | 10.26% | 5.43% | 15.69% |
| 50 | 10.42% | 5.52% | 15.94% |
| 51 | 10.57% | 5.61% | 16.18% |
| 52 | 10.71% | 5.68% | 16.39% |
| 53 | 10.87% | 5.77% | 16.64% |
| 54 | 11.02% | 5.86% | 16.88% |
| 55 | 11.18% | 5.95% | 17.13% |
| 56 | 11.23% | 5.97% | 17.20% |
| 57 | 11.19% | 5.95% | 17.14% |
| 58 | 11.05% | 5.87% | 16.92% |
| 59 & Over | 10.50% | 5.57% | 16.07% |

Administrative Expense: 0.52% of payroll added to Basic Rates

COLA Loading: 55.78% applied to Basic Rates prior to adjustment for administrative expenses

**Employers:**

- Central Contra Costa Sanitary District

**Tier:**

- Tier 1 Enhanced (2% @ 55)

[1] All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

# Exhibit D

## General Cost Group #4 Non-PEPRA Member Contribution Rates

### Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| | Basic[2] | | | Total | |
|---|---|---|---|---|---|
| Entry Age | In Social Security | Not In Social Security | COLA | In Social Security | Not In Social Security |
| 15 | 5.46% | 5.45% | 2.73% | 8.19% | 8.18% |
| 16 | 5.56% | 5.55% | 2.79% | 8.35% | 8.34% |
| 17 | 5.66% | 5.65% | 2.84% | 8.50% | 8.49% |
| 18 | 5.76% | 5.75% | 2.90% | 8.66% | 8.65% |
| 19 | 5.86% | 5.85% | 2.95% | 8.81% | 8.80% |
| 20 | 5.96% | 5.95% | 3.01% | 8.97% | 8.96% |
| 21 | 6.07% | 6.06% | 3.07% | 9.14% | 9.13% |
| 22 | 6.18% | 6.17% | 3.13% | 9.31% | 9.30% |
| 23 | 6.28% | 6.27% | 3.19% | 9.47% | 9.46% |
| 24 | 6.40% | 6.39% | 3.25% | 9.65% | 9.64% |
| 25 | 6.51% | 6.50% | 3.31% | 9.82% | 9.81% |
| 26 | 6.62% | 6.61% | 3.38% | 10.00% | 9.99% |
| 27 | 6.74% | 6.73% | 3.44% | 10.18% | 10.17% |
| 28 | 6.86% | 6.85% | 3.51% | 10.37% | 10.36% |
| 29 | 6.98% | 6.97% | 3.57% | 10.55% | 10.54% |
| 30 | 7.11% | 7.10% | 3.65% | 10.76% | 10.75% |
| 31 | 7.23% | 7.22% | 3.71% | 10.94% | 10.93% |
| 32 | 7.36% | 7.35% | 3.79% | 11.15% | 11.14% |
| 33 | 7.49% | 7.48% | 3.86% | 11.35% | 11.34% |
| 34 | 7.63% | 7.62% | 3.93% | 11.56% | 11.55% |
| 35 | 7.77% | 7.76% | 4.01% | 11.78% | 11.77% |
| 36 | 7.91% | 7.90% | 4.09% | 12.00% | 11.99% |
| 37 | 8.05% | 8.04% | 4.17% | 12.22% | 12.21% |
| 38 | 8.20% | 8.19% | 4.25% | 12.45% | 12.44% |
| 39 | 8.36% | 8.35% | 4.34% | 12.70% | 12.69% |
| 40 | 8.51% | 8.50% | 4.42% | 12.93% | 12.92% |
| 41 | 8.66% | 8.65% | 4.51% | 13.17% | 13.16% |
| 42 | 8.82% | 8.81% | 4.59% | 13.41% | 13.40% |
| 43 | 8.97% | 8.96% | 4.68% | 13.65% | 13.64% |
| 44 | 9.13% | 9.12% | 4.77% | 13.90% | 13.89% |
| 45 | 9.29% | 9.28% | 4.85% | 14.14% | 14.13% |
| 46 | 9.45% | 9.44% | 4.94% | 14.39% | 14.38% |
| 47 | 9.61% | 9.60% | 5.03% | 14.64% | 14.63% |
| 48 | 9.77% | 9.76% | 5.12% | 14.89% | 14.88% |
| 49 | 9.91% | 9.90% | 5.20% | 15.11% | 15.10% |
| 50 | 10.06% | 10.05% | 5.28% | 15.34% | 15.33% |
| 51 | 10.22% | 10.21% | 5.37% | 15.59% | 15.58% |
| 52 | 10.38% | 10.37% | 5.46% | 15.84% | 15.83% |
| 53 | 10.54% | 10.53% | 5.55% | 16.09% | 16.08% |
| 54 | 10.68% | 10.67% | 5.63% | 16.31% | 16.30% |
| 55 | 10.82% | 10.81% | 5.70% | 16.52% | 16.51% |
| 56 | 10.93% | 10.92% | 5.76% | 16.69% | 16.68% |
| 57 | 10.92% | 10.91% | 5.76% | 16.68% | 16.67% |
| 58 | 10.86% | 10.85% | 5.72% | 16.58% | 16.57% |
| 59 & Over | 10.62% | 10.61% | 5.59% | 16.21% | 16.20% |

Administrative Expense: 0.52% of payroll added to Basic Rates

COLA Loading: 55.42% applied to Basic Rates prior to adjustment for administrative expenses

[1] For members in Social Security, the "In Social Security" rate should only be applied to monthly compensation in excess of $116.67. All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] The Basic Rate for members in Social Security is increased by 0.01% to account for the administrative expense rate of 0.52% that is applicable to the first $116.67 of compensation.

# Exhibit D

**Employers:**

- Contra Costa Housing Authority

**Tier:**

- Tier 1 Enhanced (2% @ 55)

# Exhibit E

## General Cost Group #5 Non-PEPRA Member Contribution Rates

### Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 5.45% | 3.10% | 8.55% |
| 16 | 5.55% | 3.16% | 8.71% |
| 17 | 5.65% | 3.22% | 8.87% |
| 18 | 5.75% | 3.29% | 9.04% |
| 19 | 5.85% | 3.35% | 9.20% |
| 20 | 5.95% | 3.41% | 9.36% |
| 21 | 6.06% | 3.48% | 9.54% |
| 22 | 6.17% | 3.55% | 9.72% |
| 23 | 6.27% | 3.61% | 9.88% |
| 24 | 6.39% | 3.69% | 10.08% |
| 25 | 6.50% | 3.76% | 10.26% |
| 26 | 6.61% | 3.83% | 10.44% |
| 27 | 6.73% | 3.90% | 10.63% |
| 28 | 6.85% | 3.98% | 10.83% |
| 29 | 6.97% | 4.05% | 11.02% |
| 30 | 7.10% | 4.13% | 11.23% |
| 31 | 7.22% | 4.21% | 11.43% |
| 32 | 7.35% | 4.29% | 11.64% |
| 33 | 7.48% | 4.37% | 11.85% |
| 34 | 7.62% | 4.46% | 12.08% |
| 35 | 7.76% | 4.55% | 12.31% |
| 36 | 7.90% | 4.64% | 12.54% |
| 37 | 8.04% | 4.73% | 12.77% |
| 38 | 8.19% | 4.82% | 13.01% |
| 39 | 8.35% | 4.92% | 13.27% |
| 40 | 8.50% | 5.01% | 13.51% |
| 41 | 8.65% | 5.11% | 13.76% |
| 42 | 8.81% | 5.21% | 14.02% |
| 43 | 8.96% | 5.30% | 14.26% |
| 44 | 9.12% | 5.40% | 14.52% |
| 45 | 9.28% | 5.50% | 14.78% |
| 46 | 9.44% | 5.61% | 15.05% |
| 47 | 9.60% | 5.71% | 15.31% |
| 48 | 9.76% | 5.81% | 15.57% |
| 49 | 9.90% | 5.89% | 15.79% |
| 50 | 10.05% | 5.99% | 16.04% |
| 51 | 10.21% | 6.09% | 16.30% |
| 52 | 10.37% | 6.19% | 16.56% |
| 53 | 10.53% | 6.29% | 16.82% |
| 54 | 10.67% | 6.38% | 17.05% |
| 55 | 10.81% | 6.47% | 17.28% |
| 56 | 10.92% | 6.54% | 17.46% |
| 57 | 10.91% | 6.53% | 17.44% |
| 58 | 10.85% | 6.49% | 17.34% |
| 59 & Over | 10.61% | 6.34% | 16.95% |

Administrative Expense: 0.52% of payroll added to Basic Rates
COLA Loading: 62.84% applied to Basic Rates prior to adjustment for administrative expenses

**Employers:**

- Contra Costa County Fire Protection District

**Tier:**

- Tier 1 Enhanced (2% @ 55)

[1] All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

# Exhibit F

## General Cost Group #6 Non-PEPRA Member Contribution Rates

### Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| | Basic[2] | | | Total | |
|---|---|---|---|---|---|
| Entry Age | In Social Security | Not In Social Security | COLA | In Social Security | Not In Social Security |
| 15 | 6.21% | 6.20% | 2.59% | 8.80% | 8.79% |
| 16 | 6.32% | 6.31% | 2.64% | 8.96% | 8.95% |
| 17 | 6.43% | 6.42% | 2.69% | 9.12% | 9.11% |
| 18 | 6.55% | 6.54% | 2.74% | 9.29% | 9.28% |
| 19 | 6.66% | 6.65% | 2.79% | 9.45% | 9.44% |
| 20 | 6.78% | 6.77% | 2.85% | 9.63% | 9.62% |
| 21 | 6.90% | 6.89% | 2.90% | 9.80% | 9.79% |
| 22 | 7.02% | 7.01% | 2.96% | 9.98% | 9.97% |
| 23 | 7.15% | 7.14% | 3.02% | 10.17% | 10.16% |
| 24 | 7.28% | 7.27% | 3.08% | 10.36% | 10.35% |
| 25 | 7.41% | 7.40% | 3.14% | 10.55% | 10.54% |
| 26 | 7.54% | 7.53% | 3.20% | 10.74% | 10.73% |
| 27 | 7.67% | 7.66% | 3.25% | 10.92% | 10.91% |
| 28 | 7.81% | 7.80% | 3.32% | 11.13% | 11.12% |
| 29 | 7.95% | 7.94% | 3.38% | 11.33% | 11.32% |
| 30 | 8.10% | 8.09% | 3.45% | 11.55% | 11.54% |
| 31 | 8.25% | 8.24% | 3.52% | 11.77% | 11.76% |
| 32 | 8.40% | 8.39% | 3.59% | 11.99% | 11.98% |
| 33 | 8.55% | 8.54% | 3.66% | 12.21% | 12.20% |
| 34 | 8.71% | 8.70% | 3.73% | 12.44% | 12.43% |
| 35 | 8.87% | 8.86% | 3.80% | 12.67% | 12.66% |
| 36 | 9.04% | 9.03% | 3.88% | 12.92% | 12.91% |
| 37 | 9.19% | 9.18% | 3.95% | 13.14% | 13.13% |
| 38 | 9.36% | 9.35% | 4.02% | 13.38% | 13.37% |
| 39 | 9.52% | 9.51% | 4.10% | 13.62% | 13.61% |
| 40 | 9.70% | 9.69% | 4.18% | 13.88% | 13.87% |
| 41 | 9.86% | 9.85% | 4.25% | 14.11% | 14.10% |
| 42 | 10.02% | 10.01% | 4.33% | 14.35% | 14.34% |
| 43 | 10.20% | 10.19% | 4.41% | 14.61% | 14.60% |
| 44 | 10.35% | 10.34% | 4.48% | 14.83% | 14.82% |
| 45 | 10.51% | 10.50% | 4.55% | 15.06% | 15.05% |
| 46 | 10.66% | 10.65% | 4.62% | 15.28% | 15.27% |
| 47 | 10.84% | 10.83% | 4.70% | 15.54% | 15.53% |
| 48 | 10.99% | 10.98% | 4.77% | 15.76% | 15.75% |
| 49 | 11.15% | 11.14% | 4.84% | 15.99% | 15.98% |
| 50 | 11.32% | 11.31% | 4.92% | 16.24% | 16.23% |
| 51 | 11.40% | 11.39% | 4.95% | 16.35% | 16.34% |
| 52 | 11.44% | 11.43% | 4.97% | 16.41% | 16.40% |
| 53 | 11.34% | 11.33% | 4.93% | 16.27% | 16.26% |
| 54 & Over | 10.95% | 10.94% | 4.75% | 15.70% | 15.69% |

Administrative Expense: 0.52% of payroll added to Basic Rates

COLA Loading: 45.58% applied to Basic Rates prior to adjustment for administrative expenses

**Employers:**

- Rodeo Sanitary District
- Byron Brentwood Cemetery District

**Tier:**

- Tier 1 Non-Enhanced (1.67% @ 55)

[1] For members in Social Security, the "In Social Security" rate should only be applied to monthly compensation in excess of $116.67. All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

[2] The Basic Rate for members in Social Security is increased by 0.01% to account for the administrative expense rate of 0.52% that is applicable to the first $116.67 of compensation.

# Exhibit G

## Safety Cost Group #7 Non-PEPRA Member Contribution Rates

## Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 9.92% | 6.66% | 16.58% |
| 16 | 9.92% | 6.66% | 16.58% |
| 17 | 9.92% | 6.66% | 16.58% |
| 18 | 9.92% | 6.66% | 16.58% |
| 19 | 9.92% | 6.66% | 16.58% |
| 20 | 9.92% | 6.66% | 16.58% |
| 21 | 9.92% | 6.66% | 16.58% |
| 22 | 10.08% | 6.78% | 16.86% |
| 23 | 10.23% | 6.88% | 17.11% |
| 24 | 10.39% | 7.00% | 17.39% |
| 25 | 10.55% | 7.11% | 17.66% |
| 26 | 10.72% | 7.23% | 17.95% |
| 27 | 10.89% | 7.35% | 18.24% |
| 28 | 11.07% | 7.48% | 18.55% |
| 29 | 11.25% | 7.61% | 18.86% |
| 30 | 11.41% | 7.72% | 19.13% |
| 31 | 11.57% | 7.83% | 19.40% |
| 32 | 11.73% | 7.95% | 19.68% |
| 33 | 11.91% | 8.08% | 19.99% |
| 34 | 12.09% | 8.20% | 20.29% |
| 35 | 12.27% | 8.33% | 20.60% |
| 36 | 12.46% | 8.47% | 20.93% |
| 37 | 12.67% | 8.61% | 21.28% |
| 38 | 12.87% | 8.76% | 21.63% |
| 39 | 13.08% | 8.91% | 21.99% |
| 40 | 13.31% | 9.07% | 22.38% |
| 41 | 13.55% | 9.24% | 22.79% |
| 42 | 13.80% | 9.42% | 23.22% |
| 43 | 14.02% | 9.57% | 23.59% |
| 44 | 14.19% | 9.69% | 23.88% |
| 45 | 14.26% | 9.74% | 24.00% |
| 46 | 14.30% | 9.77% | 24.07% |
| 47 | 14.29% | 9.76% | 24.05% |
| 48 | 14.11% | 9.64% | 23.75% |
| 49 & Over | 13.65% | 9.31% | 22.96% |

Administrative Expense: 0.52% of payroll added to Basic Rates
COLA Loading: 70.90% applied to Basic Rates prior to adjustment for administrative expenses

**Employers:**

- County Safety

**Tier:**

- Tier A Enhanced (3% @ 50)

[1] All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

# Exhibit H

## Safety Cost Group #8 Non-PEPRA Member Contribution Rates

**Effective for July 1, 2025 through June 30, 2026**

Expressed as a Percentage of Monthly Payroll[1]

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 9.90% | 6.84% | 16.74% |
| 16 | 9.90% | 6.84% | 16.74% |
| 17 | 9.90% | 6.84% | 16.74% |
| 18 | 9.90% | 6.84% | 16.74% |
| 19 | 9.90% | 6.84% | 16.74% |
| 20 | 9.90% | 6.84% | 16.74% |
| 21 | 9.90% | 6.84% | 16.74% |
| 22 | 10.06% | 6.96% | 17.02% |
| 23 | 10.21% | 7.07% | 17.28% |
| 24 | 10.37% | 7.19% | 17.56% |
| 25 | 10.53% | 7.30% | 17.83% |
| 26 | 10.70% | 7.43% | 18.13% |
| 27 | 10.87% | 7.55% | 18.42% |
| 28 | 11.04% | 7.68% | 18.72% |
| 29 | 11.22% | 7.81% | 19.03% |
| 30 | 11.38% | 7.92% | 19.30% |
| 31 | 11.54% | 8.04% | 19.58% |
| 32 | 11.71% | 8.17% | 19.88% |
| 33 | 11.88% | 8.29% | 20.17% |
| 34 | 12.06% | 8.42% | 20.48% |
| 35 | 12.25% | 8.56% | 20.81% |
| 36 | 12.44% | 8.70% | 21.14% |
| 37 | 12.64% | 8.84% | 21.48% |
| 38 | 12.85% | 9.00% | 21.85% |
| 39 | 13.06% | 9.15% | 22.21% |
| 40 | 13.28% | 9.31% | 22.59% |
| 41 | 13.53% | 9.49% | 23.02% |
| 42 | 13.76% | 9.66% | 23.42% |
| 43 | 13.97% | 9.81% | 23.78% |
| 44 | 14.16% | 9.95% | 24.11% |
| 45 | 14.22% | 10.00% | 24.22% |
| 46 | 14.24% | 10.01% | 24.25% |
| 47 | 14.31% | 10.06% | 24.37% |
| 48 | 13.97% | 9.81% | 23.78% |
| 49 & Over | 13.68% | 9.60% | 23.28% |

Administrative Expense: 0.52% of payroll added to Basic Rates
COLA Loading: 72.97% applied to Basic Rates prior to adjustment for administrative expenses

**Employers:**
- Contra Costa County Fire Protection District

**Tier:**
- Tier A Enhanced (3% @ 50)

[1] All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

# Exhibit I

## Safety Cost Group #9 Non-PEPRA Member Contribution Rates

### Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 9.52% | 4.19% | 13.71% |
| 16 | 9.52% | 4.19% | 13.71% |
| 17 | 9.52% | 4.19% | 13.71% |
| 18 | 9.52% | 4.19% | 13.71% |
| 19 | 9.52% | 4.19% | 13.71% |
| 20 | 9.52% | 4.19% | 13.71% |
| 21 | 9.52% | 4.19% | 13.71% |
| 22 | 9.67% | 4.26% | 13.93% |
| 23 | 9.82% | 4.33% | 14.15% |
| 24 | 9.97% | 4.40% | 14.37% |
| 25 | 10.13% | 4.48% | 14.61% |
| 26 | 10.29% | 4.55% | 14.84% |
| 27 | 10.45% | 4.63% | 15.08% |
| 28 | 10.61% | 4.70% | 15.31% |
| 29 | 10.77% | 4.77% | 15.54% |
| 30 | 10.92% | 4.84% | 15.76% |
| 31 | 11.07% | 4.91% | 15.98% |
| 32 | 11.23% | 4.99% | 16.22% |
| 33 | 11.40% | 5.07% | 16.47% |
| 34 | 11.57% | 5.15% | 16.72% |
| 35 | 11.74% | 5.23% | 16.97% |
| 36 | 11.92% | 5.31% | 17.23% |
| 37 | 12.11% | 5.40% | 17.51% |
| 38 | 12.30% | 5.49% | 17.79% |
| 39 | 12.50% | 5.58% | 18.08% |
| 40 | 12.70% | 5.67% | 18.37% |
| 41 | 12.90% | 5.77% | 18.67% |
| 42 | 13.07% | 5.85% | 18.92% |
| 43 | 13.16% | 5.89% | 19.05% |
| 44 | 13.23% | 5.92% | 19.15% |
| 45 | 13.20% | 5.91% | 19.11% |
| 46 | 13.07% | 5.85% | 18.92% |
| 47 | 12.80% | 5.72% | 18.52% |
| 48 | 13.21% | 5.91% | 19.12% |
| 49 & Over | 13.72% | 6.15% | 19.87% |

Administrative Expense: 0.52% of payroll added to Basic Rates
COLA Loading: 46.58% applied to Basic Rates prior to adjustment for administrative expenses

**Employers:**

- County Safety
  (Members hired on or after January 1, 2007)

**Tier:**

- Tier C Enhanced (3% @ 50)

[1] All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

# Exhibit J

## Safety Cost Group #10 Non-PEPRA Member Contribution Rates

### Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 9.90% | 6.68% | 16.58% |
| 16 | 9.90% | 6.68% | 16.58% |
| 17 | 9.90% | 6.68% | 16.58% |
| 18 | 9.90% | 6.68% | 16.58% |
| 19 | 9.90% | 6.68% | 16.58% |
| 20 | 9.90% | 6.68% | 16.58% |
| 21 | 9.90% | 6.68% | 16.58% |
| 22 | 10.06% | 6.79% | 16.85% |
| 23 | 10.21% | 6.90% | 17.11% |
| 24 | 10.37% | 7.01% | 17.38% |
| 25 | 10.53% | 7.12% | 17.65% |
| 26 | 10.70% | 7.25% | 17.95% |
| 27 | 10.87% | 7.37% | 18.24% |
| 28 | 11.04% | 7.49% | 18.53% |
| 29 | 11.22% | 7.62% | 18.84% |
| 30 | 11.38% | 7.73% | 19.11% |
| 31 | 11.54% | 7.84% | 19.38% |
| 32 | 11.71% | 7.96% | 19.67% |
| 33 | 11.88% | 8.08% | 19.96% |
| 34 | 12.06% | 8.21% | 20.27% |
| 35 | 12.25% | 8.35% | 20.60% |
| 36 | 12.44% | 8.48% | 20.92% |
| 37 | 12.64% | 8.63% | 21.27% |
| 38 | 12.85% | 8.78% | 21.63% |
| 39 | 13.06% | 8.92% | 21.98% |
| 40 | 13.28% | 9.08% | 22.36% |
| 41 | 13.53% | 9.26% | 22.79% |
| 42 | 13.76% | 9.42% | 23.18% |
| 43 | 13.97% | 9.57% | 23.54% |
| 44 | 14.16% | 9.71% | 23.87% |
| 45 | 14.22% | 9.75% | 23.97% |
| 46 | 14.24% | 9.76% | 24.00% |
| 47 | 14.31% | 9.81% | 24.12% |
| 48 | 13.97% | 9.57% | 23.54% |
| 49 & Over | 13.68% | 9.37% | 23.05% |

Administrative Expense: 0.52% of payroll added to Basic Rates
COLA Loading: 71.17% applied to Basic Rates prior to adjustment for administrative expenses

**Employers:**

- Moraga-Orinda Fire Protection District

**Tier:**

- Tier A Enhanced (3% @ 50)

[1] All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

# Exhibit K

## Safety Cost Group #11 Non-PEPRA Member Contribution Rates

### Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 10.15% | 6.94% | 17.09% |
| 16 | 10.15% | 6.94% | 17.09% |
| 17 | 10.15% | 6.94% | 17.09% |
| 18 | 10.15% | 6.94% | 17.09% |
| 19 | 10.15% | 6.94% | 17.09% |
| 20 | 10.15% | 6.94% | 17.09% |
| 21 | 10.15% | 6.94% | 17.09% |
| 22 | 10.31% | 7.06% | 17.37% |
| 23 | 10.47% | 7.17% | 17.64% |
| 24 | 10.63% | 7.29% | 17.92% |
| 25 | 10.80% | 7.41% | 18.21% |
| 26 | 10.97% | 7.54% | 18.51% |
| 27 | 11.14% | 7.66% | 18.80% |
| 28 | 11.32% | 7.79% | 19.11% |
| 29 | 11.50% | 7.92% | 19.42% |
| 30 | 11.66% | 8.03% | 19.69% |
| 31 | 11.83% | 8.16% | 19.99% |
| 32 | 12.00% | 8.28% | 20.28% |
| 33 | 12.18% | 8.41% | 20.59% |
| 34 | 12.36% | 8.54% | 20.90% |
| 35 | 12.54% | 8.67% | 21.21% |
| 36 | 12.74% | 8.81% | 21.55% |
| 37 | 12.95% | 8.96% | 21.91% |
| 38 | 13.15% | 9.11% | 22.26% |
| 39 | 13.37% | 9.27% | 22.64% |
| 40 | 13.59% | 9.42% | 23.01% |
| 41 | 13.84% | 9.61% | 23.45% |
| 42 | 14.08% | 9.78% | 23.86% |
| 43 | 14.30% | 9.94% | 24.24% |
| 44 | 14.47% | 10.06% | 24.53% |
| 45 | 14.53% | 10.10% | 24.63% |
| 46 | 14.53% | 10.10% | 24.63% |
| 47 | 14.55% | 10.12% | 24.67% |
| 48 | 14.25% | 9.90% | 24.15% |
| 49 & Over | 13.67% | 9.48% | 23.15% |

Administrative Expense: 0.52% of payroll added to Basic Rates
COLA Loading: 72.11% applied to Basic Rates prior to adjustment for administrative expenses

**Employers:**

- San Ramon Valley Fire Protection District

**Tier:**

- Tier A Enhanced (3% @ 50)

[1] All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

# Exhibit L

## Safety Cost Group #12 Non-PEPRA Member Contribution Rates

### Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| Entry Age | Basic | COLA | Total |
|---|---|---|---|
| 15 | 10.04% | 5.33% | 15.37% |
| 16 | 10.04% | 5.33% | 15.37% |
| 17 | 10.04% | 5.33% | 15.37% |
| 18 | 10.04% | 5.33% | 15.37% |
| 19 | 10.04% | 5.33% | 15.37% |
| 20 | 10.04% | 5.33% | 15.37% |
| 21 | 10.04% | 5.33% | 15.37% |
| 22 | 10.19% | 5.42% | 15.61% |
| 23 | 10.35% | 5.50% | 15.85% |
| 24 | 10.51% | 5.59% | 16.10% |
| 25 | 10.68% | 5.69% | 16.37% |
| 26 | 10.84% | 5.78% | 16.62% |
| 27 | 11.02% | 5.88% | 16.90% |
| 28 | 11.19% | 5.98% | 17.17% |
| 29 | 11.37% | 6.08% | 17.45% |
| 30 | 11.54% | 6.17% | 17.71% |
| 31 | 11.70% | 6.26% | 17.96% |
| 32 | 11.87% | 6.36% | 18.23% |
| 33 | 12.05% | 6.46% | 18.51% |
| 34 | 12.22% | 6.55% | 18.77% |
| 35 | 12.41% | 6.66% | 19.07% |
| 36 | 12.61% | 6.77% | 19.38% |
| 37 | 12.81% | 6.88% | 19.69% |
| 38 | 13.01% | 6.99% | 20.00% |
| 39 | 13.23% | 7.12% | 20.35% |
| 40 | 13.45% | 7.24% | 20.69% |
| 41 | 13.69% | 7.38% | 21.07% |
| 42 | 13.95% | 7.52% | 21.47% |
| 43 | 14.15% | 7.63% | 21.78% |
| 44 | 14.31% | 7.72% | 22.03% |
| 45 | 14.42% | 7.78% | 22.20% |
| 46 | 14.38% | 7.76% | 22.14% |
| 47 | 14.42% | 7.78% | 22.20% |
| 48 | 14.18% | 7.65% | 21.83% |
| 49 & Over | 13.49% | 7.26% | 20.75% |

Administrative Expense: 0.52% of payroll added to Basic Rates
COLA Loading: 56.00% applied to Basic Rates prior to adjustment for administrative expenses

**Employers:**

- Rodeo-Hercules Fire Protection District

**Tier:**

- Tier A Non-Enhanced (2% @ 50)

[1] All rates should be applied to compensation up to the annual IRC 401(a)(17) compensation limit, if applicable.

# Exhibit M

## PEPRA Tier Member Contribution Rates

### Effective for July 1, 2025 through June 30, 2026

Expressed as a Percentage of Monthly Payroll[1]

| General Tiers | Basic | COLA | Total |
|---|---|---|---|
| Cost Group #1 – PEPRA Tier 4 (2% COLA) | 9.09% | 2.09% | 11.18% |
| Cost Group #1 – PEPRA Tier 4 (3% COLA) | 9.59% | 3.22% | 12.81% |
| Cost Group #2 – PEPRA Tier 5 (2% COLA) | 8.48% | 1.90% | 10.38% |
| Cost Group #2 – PEPRA Tier 5 (3%/4% COLA) | 8.48% | 2.81% | 11.29% |
| Cost Group #3 – PEPRA Tier 4 (3% COLA) | 8.54% | 2.98% | 11.52% |
| Cost Group #4 – PEPRA Tier 4 (3% COLA) | 9.17% | 3.07% | 12.24% |
| Cost Group #5 – PEPRA Tier 4 (2% COLA) | 10.08% | 2.31% | 12.39% |
| Cost Group #5 – PEPRA Tier 4 (3% COLA) | 11.31% | 3.83% | 15.14% |
| Cost Group #6 – PEPRA Tier 4 (3% COLA) | 10.18% | 3.41% | 13.59% |

| Safety Tiers | Basic | COLA | Total |
|---|---|---|---|
| Cost Group #7 – PEPRA Tier D | 14.61% | 6.05% | 20.66% |
| Cost Group #8 – PEPRA Tier D | 12.87% | 5.42% | 18.29% |
| Cost Group #8 – PEPRA Tier E | 12.91% | 3.61% | 16.52% |
| Cost Group #9 – PEPRA Tier E | 13.73% | 3.80% | 17.53% |
| Cost Group #10 – PEPRA Tier D | 13.25% | 5.59% | 18.84% |
| Cost Group #11 – PEPRA Tier D | 11.61% | 4.91% | 16.52% |
| Cost Group #12 – PEPRA Tier D | 14.88% | 6.05% | 20.93% |

Administrative Expense: 0.52% of payroll added to Basic Rates

| Cost Group | Employers | Tiers |
|---|---|---|
| 1 | County General | Tier 4 (2.5% @ 67) |
| | Local Agency Formation Commission (LAFCO) | Tier 4 (2.5% @ 67) |
| | Contra Costa Mosquito and Vector Control District | Tier 4 (2.5% @ 67) |
| | Bethel Island Municipal Improvement District | Tier 4 (2.5% @ 67) |
| | First 5 - Children & Families Commission | Tier 4 (2.5% @ 67) |
| | Contra Costa County Employees’ Retirement Association | Tier 4 (2.5% @ 67) |
| | Superior Court | Tier 4 (2.5% @ 67) |
| | Moraga-Orinda Fire Protection District | Tier 4 (2.5% @ 67) |
| | Rodeo-Hercules Fire Protection District | Tier 4 (2.5% @ 67) |
| | San Ramon Valley Fire Protection District | Tier 4 (2.5% @ 67) |
| 2 | County General | Tier 5 (2.5% @ 67) |
| | In-Home Supportive Services Authority (IHSS) | Tier 5 (2.5% @ 67) |
| | Contra Costa Mosquito and Vector Control District | Tier 5 (2.5% @ 67) |
| | Superior Court | Tier 5 (2.5% @ 67) |
| 3 | Central Contra Costa Sanitary District (CCCSD) | Tier 4 (2.5% @ 67) |
| 4 | Contra Costa Housing Authority | Tier 4 (2.5% @ 67) |
| 5 | Contra Costa County Fire Protection District (CCCFPD) | Tier 4 (2.5% @ 67) |
| 6 | Rodeo Sanitary District | Tier 4 (2.5% @ 67) |
| | Byron Brentwood Cemetery District | Tier 4 (2.5% @ 67) |
| 7 | County Safety | Tier D (2.7% @ 57) |
| 8 | Contra Costa County Fire Protection District (CCCFPD) | Tier D (2.7% @ 57) |
| | | Tier E (2.7% @ 57) |
| 9 | County Safety (Members hired on or after January 1, 2007) | Tier E (2.7% @ 57) |
| 10 | Moraga-Orinda Fire Protection District | Tier D (2.7% @ 57) |
| 11 | San Ramon Valley Fire Protection District | Tier D (2.7% @ 57) |
| 12 | Rodeo-Hercules Fire Protection District | Tier D (2.7% @ 57) |

[1] All rates should be applied to all compensation (whether or not in Social Security) up to the applicable annual Gov. Code 7522.10(d) compensation limit.

## SUBVENTION

All rates are shown as a percent of payroll.

Employee contribution rates vary depending upon their tier and age at entry. To compute the exact subvention percent for each employee, do the following:

Employee rate: Decrease the employee's rate by the subvention percent (i.e. 25%, 50%, etc.).

Employer rate: Increase the employer's rate by a percent of the employee's decrease using the applicable non-refundability factor (found on Exhibits 1 through 12).

**EXAMPLE FOR COST GROUP #3 LEGACY MEMBERS:**

If the subvention percent is 25%, and the employee's rate is 6.00%,

Employee rates should be decreased by 1.50% (25% × 6.00%)
Employer rate should be increased by 1.44% (1.50% × 0.9631)

Please note that for PEPRA members, subvention is generally not permitted. The standard under Gov. Code §7522.30(a) is that employees pay at least 50 percent of normal costs and that employers not pay any of the required employee contribution, but there are some exceptions. Gov. Code §7522.30(f) allows the terms (regarding the employee's required contribution) of a contract, including a memorandum of understanding, that is in effect on January 1, 2013, to continue through the length of a contract. This means that it is possible that an employer will subvent a portion of a PEPRA member's required contribution until the expiration date of the current contract, so long as it has been determined that the contract has been impaired.

**CAUTION** – these rates are for employer subvention of up to one-half the member contribution under Gov. Code §31581.1, NOT employer pick-up of employee contribution rates. When an employer subvents, the contribution subvented is not placed in the member's account and is therefore not available to the member as a refund. For this reason, the employer pays the contribution at a discount (i.e. "Non-Refundability Factor").

Employer pick-ups of employee contributions are those made under Gov. Code §31581.2 and Internal Revenue Code §414 (h)(2) for the sole purpose of deferring income tax. These contributions are added to the member's account, are available to the member as a refund and are considered by CCCERA as part of the member's compensation for retirement purposes.

## EMPLOYEE PAYMENT OF EMPLOYER COST

There are several reasons why the attached contribution rates may need to be adjusted to increase the employee portion including the following:

Gov. Code §31631 allows for members to pay all or part of the employer contributions.

Gov. Code §31639.95 allows for Safety members to pay a portion of the employer cost for the "3% at 50" enhanced benefit.

Gov. Code §7522.30(c) requires that an employee's contribution rate be at least equal to that of similarly situated employees.

Gov. Code §7522.30(e) allows the employee contributions to be more than one-half of the normal cost rate if the increase has been agreed to through the collective bargaining process.

If you need to increase the employee contribution rate for any reason, you will need to adjust both employee and employer rates as follows:

Employee rate: Increase the employee's rate by the desired percent of payroll.

Employer rate: Decrease the employer's rate by a percent of the cost-sharing percent of payroll using the applicable non-refundability factor.

**EXAMPLE FOR COST GROUP #11 LEGACY MEMBERS:**

If the required increase in the employee rate is 8.00%,

Employee rates should be increased by 8.00%.
Employer rate should be decreased by 7.82% (8.00% × 0.9774)

**PREPAYMENT DISCOUNT FACTOR FOR 2025-2026**

Employer Contribution Prepayment Program & Discount Factor for 2025-2026 is **0.9707**

If you are currently participating in the prepayment program and wish to continue, you do not need to do anything other than prepay the July 1, 2025 through June 30, 2026 contributions on or before July 31, 2025. If you wish to start participating, please contact the Accounting Department at CCCERA by March 31, 2025.

The discount factor is calculated assuming the prepayment will be received on July 31 in accordance with Gov. Code §31582(b) in lieu of 12 equal payments due at the end of each month in accordance with Gov. Code §31582(a). The discount factor for the fiscal year July 1, 2025 through June 30, 2026 will be **0.9707** based on the interest assumption of 6.75% per annum. It is calculated by discounting each of the 12 equal payments back to the date that the prepayment is made and is the sum of the discount factors shown in the table below divided by 12. Each of the discount factors below is based on how many months early the payment is made.

| Payment Number | Number of Months Payment is Made Early | Discount Factor |
|---|---|---|
| 1 | 0 | 1.0000 |
| 2 | 1 | 0.9946 |
| 3 | 2 | 0.9892 |
| 4 | 3 | 0.9838 |
| 5 | 4 | 0.9785 |
| 6 | 5 | 0.9732 |
| 7 | 6 | 0.9679 |
| 8 | 7 | 0.9626 |
| 9 | 8 | 0.9574 |
| 10 | 9 | 0.9522 |
| 11 | 10 | 0.9470 |
| 12 | 11 | 0.9419 |
| **Sum of Discount Factors Divided by 12:** | | **0.9707** |