



AGENDA

RETIREMENT BOARD MEETING

REGULAR MEETING
May 1, 2024
9:00 a.m.

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

NOTICE OF TELECONFERENCE MEETING:

ONE OR MORE MEMBERS OF THE BOARD OF RETIREMENT FOR THE CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION MAY PARTICIPATE IN THE BOARD MEETING, SCHEDULED FOR MAY 1, 2024, VIA TELECONFERENCE AT THE LOCATION LISTED BELOW, WHICH IS OPEN TO THE PUBLIC.

TELECONFERENCE LOCATION:

The Atlantic
Large Conference Room
1401 Spruce Street
Philadelphia, PA 19102

THE LOCATION LISTED ABOVE IS ACCESSIBLE TO THE PUBLIC, INCLUDING THOSE WITH DISABILITIES.

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

1. Pledge of Allegiance.
2. Public Comment (3 minutes/speaker).

CONSENT ITEMS

- 3.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 April 10, 2024 meeting.

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.

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

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

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

CLOSED SESSION

4. 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:

<u>Member</u>	<u>Type Sought</u>	<u>Recommendation</u>
a. Christopher Drolette	Service Connected	Service Connected
b. Guy Hayashi	Service Connected	Service Connected
c. Christopher Sillers	Service Connected	Service Connected

OPEN SESSION

- 5. Consider and take possible action to adjust amortization layers to manage tail volatility. (Action Item)

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

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.



RETIREMENT BOARD MEETING MINUTES

REGULAR MEETING

April 10, 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, Dan Mierzwa, John Phillips, and Samson Wong

Absent: Jay Kwon, David MacDonald, and Mike Sloan

Staff: Christina Dunn, Chief Executive Officer; Karen Levy, General Counsel; and Ryan Luis, Retirement Services Manager

Outside Professional Support:
Graham Schmidt
Michael Moehle

Representing:
Cheiron
Cheiron

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 Ayinde Garza for 5 years of service

Gordon recognized Ayinde Garza for 5 years of service.

4A. Consent Items:

It was **M/S/C** to approve all consent items. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, 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 the following disability retirement application.

The Board moved into open session.

5. Disability Retirement Applications:

It was **M/S/C** to accept the Medical Advisor's recommendation and grant the following disability benefits:

- a. James Harder – Service Connected (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, Mierzwa, Phillips, and Wong).

6. Consider and take possible action to authorize the CEO to execute a contract with Cheiron Actuarial Auditing Services

It was **M/S/C** to approve the execution of a contract with Cheiron Actuarial Auditing Services. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, Mierzwa, Phillips, and Wong).

7. Review of Report on liquidity sub-portfolio

Mitchell Taylor presented a review on liquidity sub-portfolio.

8. Presentation of annual disability retirement report

Elise Diliberto and Luis presented the annual disability retirement report.

9. Consider authorizing the attendance of Board:

- a. It was **M/S/C** to authorize the attendance of 4 Board members at the CALAPRS Trustees Virtual Roundtable, May 3, 2024. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, Mierzwa, Phillips and Wong).

10. Miscellaneous:

- a. Staff Report – Dunn gave an update on the March 2024 retirement applications, stating the final number of retirement applications received for members retiring in March is 111.
- b. Outside Professionals’ Report – None
- c. Trustees’ Comments – None

It was **M/S/C** to adjourn the meeting. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, Mierzwa, Phillips, and Wong)

Scott W. Gordon, Chairperson

Jerry R. Holcombe, Secretary

CERTIFICATION OF MEMBERSHIPS

<u>Name</u>	<u>Employee Number</u>	<u>Tier</u>	<u>Membership Date</u>	<u>Employer</u>
Adams, Jayla	94421	S/E	03/01/24	Contra Costa County
Alkrizy, Ameer	94734	S/E	03/01/24	Contra Costa County
Aquino, Ryan	94691	P5.2	03/01/24	Contra Costa County
Arifin, Amelia	94744	P5.2	03/01/24	Contra Costa County
Asalati, Yusuf	94737	P5.2	03/01/24	Contra Costa County
Baker, JoAnn	94527	P5.2	03/01/24	Contra Costa County
Barrett, Lorenzo	94713	P5.2	03/01/24	Contra Costa County
Belen, Elena	83332	P5.2	03/01/24	Contra Costa County
Brandt, Michelle	94703	P5.2	03/01/24	Contra Costa County
Brooks, Kristen	88928	P5.2	03/01/24	Contra Costa County
Brown, Lauren	94730	P5.2	03/01/24	Contra Costa County
Browne, Janice	94638	P5.2	03/01/24	Contra Costa County
Brunson, Amy	94696	P5.2	03/01/24	Contra Costa County
Cardoza, Heather	94774	I	03/01/24	Contra Costa County Fire Protection District
Carter II, Alonzo	94424	S/E	03/01/24	Contra Costa County
Chihuahua-Hernandez,	94753	P5.2	03/01/24	Contra Costa County
Crescimbeni, Maria	D9500	P5.3	03/01/24	Contra Costa County Superior Courts
David, Larrei May	93616	P5.2	03/01/24	Contra Costa County
DeLong, Karen	D3460	P4.3	03/01/24	Central Contra Costa Sanitary District
Dijas, Idania	92347	P5.2	03/01/24	Contra Costa County
Domingo, Kathleen	94687	P5.2	03/01/24	Contra Costa County
Downing, Michael	82171	P5.2	03/01/24	Contra Costa County
Dryden, Sean	94772	P4.2	03/01/24	Contra Costa County Fire Protection District
Dunn, Maxwell	94636	P5.2	03/01/24	Contra Costa County
Duran, Eric	94643	P5.2	03/01/24	Contra Costa County
Ellington, Shayleen	94657	I	03/01/24	Contra Costa County Fire Protection District
Fiorina, Gregory	94752	P5.2	03/01/24	Contra Costa County
Gacheru, Maureen	94686	P5.2	03/01/24	Contra Costa County
Gates, Nova	94720	P5.2	03/01/24	Contra Costa County
Gathuru, Simon Peter	94712	P5.2	03/01/24	Contra Costa County
Gehring, Julia	94770	P4.2	03/01/24	Contra Costa County Fire Protection District
Gigliotti, Dominic	94694	P5.2	03/01/24	Contra Costa County
Giuntini, June	94698	P5.2	03/01/24	Contra Costa County
Gomez, Clarissa	94685	P5.2	03/01/24	Contra Costa County

Key:

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

CERTIFICATION OF MEMBERSHIPS

<u>Name</u>	<u>Employee Number</u>	<u>Tier</u>	<u>Membership Date</u>	<u>Employer</u>
Gomez, Maribel	D4980	P4.3	03/01/24	Contra Costa County Employees' Retirement Association
Gonzalez Galvan, Aurora	94704	P5.2	03/01/24	Contra Costa County
Grace, Landon	94788	P4.2	03/01/24	Contra Costa County Fire Protection District
Gulley, Gala	94781	P5.2	03/01/24	Contra Costa County
Hamilton, Tayler	94741	P5.2	03/01/24	Contra Costa County
Henrickson, Michelle	94749	P5.2	03/01/24	Contra Costa County
Hernandez, Edgardo	94778	S/E	03/01/24	Contra Costa County
Hernandez, Fabian	94688	S/E	03/01/24	Contra Costa County
Hernandez, Natalie	73381	P5.2	03/01/24	Contra Costa County
Hill-Ford, Zoey	94724	P5.2	03/01/24	Contra Costa County
Irgens, Megan	94660	P5.2	03/01/24	Contra Costa County
Jain, Shilpi	94797	P5.2	03/01/24	Contra Costa County
Jeczmien, Adam	94728	P5.2	03/01/24	Contra Costa County
Jenkins, Shanequa	94692	P5.2	03/01/24	Contra Costa County
Johnson, Samantha	93961	P5.2	03/01/24	Contra Costa County
Jones, Jessie	94733	P5.2	03/01/24	Contra Costa County
Kauppinen, Erik	94659	P5.2	03/01/24	Contra Costa County
Keys, Gerardo	94779	P5.2	03/01/24	Contra Costa County
Kogge Espe Epie, Joana	94678	P5.2	03/01/24	Contra Costa County
Kravariotis, Peter	D7830	P4.3	03/01/24	San Ramon Valley Fire Protection District
Kumar, Vikashni	94649	P5.2	03/01/24	Contra Costa County
Lazo, Carina	94119	P5.2	03/01/24	Contra Costa County
Lock, Sarah	94476	P5.2	03/01/24	Contra Costa County
Lopez, Desiree	94680	P5.2	03/01/24	Contra Costa County
Lott, Taneya	94789	P5.2	03/01/24	Contra Costa County
Martinez Vega, Juan	94738	P5.2	03/01/24	Contra Costa County
McFadden, Desiree	94709	P5.2	03/01/24	Contra Costa County
Melese, Fikir	90250	P5.2	03/01/24	Contra Costa County
Michael, Deven	94420	S/E	03/01/24	Contra Costa County
Minoza, Hera	94682	P5.2	03/01/24	Contra Costa County
Mojadidi, Sami	94736	P5.2	03/01/24	Contra Costa County
Montague, Divina Gracia	94683	P5.2	03/01/24	Contra Costa County
Morris, Angil	94721	P5.2	03/01/24	Contra Costa County

Key:

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II = Tier II	P4.3 = PEPR Tier 4 (3% COLA)	S/C = Safety Tier C
III = Tier III	P5.2 = PEPR Tier 5 (2% COLA)	S/D = Safety Tier D
	P5.3 = PEPR Tier 5 (3% COLA)	S/E = Safety Tier E

CERTIFICATION OF MEMBERSHIPS

<u>Name</u>	<u>Employee Number</u>	<u>Tier</u>	<u>Membership Date</u>	<u>Employer</u>
Okere, Gabriel	93515	P5.2	03/01/24	Contra Costa County
Ortega, Andrew	90932	P5.2	03/01/24	Contra Costa County
Osorio, Briana	94746	P5.2	03/01/24	Contra Costa County
Oziegbe, Lakisha	94665	P5.2	03/01/24	Contra Costa County
Padilla, Sandra	94487	P5.2	03/01/24	Contra Costa County
Palma, Carlos	94131	P4.2	03/01/24	Contra Costa County Fire Protection District
Payes, Rebeca	94725	P5.2	03/01/24	Contra Costa County
Phombo, Ajay	94641	P5.2	03/01/24	Contra Costa County
Piquero, James	94777	S/E	03/01/24	Contra Costa County
Prasad, Shaneel	94609	P5.2	03/01/24	Contra Costa County
Premo, Taylor	94701	P5.2	03/01/24	Contra Costa County
Raines, Brittney	94717	P5.2	03/01/24	Contra Costa County
Ramirez Aburto, Jorge	94729	P5.2	03/01/24	Contra Costa County
Ramirez, Cristina	94684	P5.2	03/01/24	Contra Costa County
Ramirez, Miriam	94745	P5.2	03/01/24	Contra Costa County
Ramos, Reynaldo	93784	S/E	03/01/24	Contra Costa County
Reed, Karen	94784	P5.2	03/01/24	Contra Costa County
Rivera, Olga	94707	P5.2	03/01/24	Contra Costa County
Romo, Cierra	93422	P5.2	03/01/24	Contra Costa County
Sandhu, Kabir	94748	P5.2	03/01/24	Contra Costa County
Sanduja, Dimpy	94608	P5.2	03/01/24	Contra Costa County
Shah, Gita	63370	S/E	03/01/24	Contra Costa County
Silva, Douglas	94700	S/E	03/01/24	Contra Costa County
Singh, Gurpreet	92716	P5.2	03/01/24	Contra Costa County
Slous, Trever	92836	P5.2	03/01/24	Contra Costa County
Solorzano, Nicholas	91201	P5.2	03/01/24	Contra Costa County
Stewart, Tashara	87297	P5.2	03/01/24	Contra Costa County
Uhri Chu, Tiffany	94617	P5.2	03/01/24	Contra Costa County
Valladares, Grace E Dorothy	94751	P5.2	03/01/24	Contra Costa County
Vang, Krystal	94697	P5.2	03/01/24	Contra Costa County
Washington, Mary	94719	P5.2	03/01/24	Contra Costa County
Webb, Megan	94663	P5.2	03/01/24	Contra Costa County
Whipps, Mackenzie	94690	P4.3	03/01/24	First Five of Contra Costa

Key:

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

SERVICE & DISABILITY RETIREMENT ALLOWANCES

<u>Name</u>	<u>Number</u>	<u>Effective Date</u>	<u>Option Type</u>	<u>Tier</u>	<u>Selected</u>
Brady, Laurel	D9500	11/01/23	SR	II	Unmodified
Augustine, Freda	51041	01/31/24	SR	II and III	Unmodified
Bushnell-Jackson, IvyGay	74370	10/14/23	SR	III	Unmodified
Calhoun, Sarahvone	69631	09/30/23	SR	III	Unmodified
Collen, Amy	64506	02/01/24	SR	I	Unmodified
Daugherty, Colleen	75805	09/30/23	SR	III	Unmodified
Edminster, Matthew	D7274	09/27/23	SR	Safety A	Unmodified
Esparza, Maria	D3406	09/21/23	SR	I	Unmodified
Evans, Phillip	62968	02/01/24	SR	III	Unmodified
Fontenot, Anthony	56357	10/13/23	SR	III	Unmodified
Fracasso, Piedad	86350	09/30/23	SR	PEPRA 5.2	Unmodified
Gantt, Tifton	D3406	02/28/24	SR	I	Unmodified
Grolnic-McClurg, Steven	78200	02/06/24	SR	PEPRA 5.3	Unmodified
Johnson, Christopher	62865	02/01/24	SR	II and III	Unmodified
Johnson, Denese	D9500	02/20/24	SR	III	Unmodified
Johnson, Dorothea	D9500	03/01/24	SR	III	Unmodified
Leenstra, Lynda	67831	02/02/24	SR	III	Unmodified
Linnell, Linda	43105	02/01/24	SR	II and III	Unmodified
Ly, Jenni	53810	01/31/24	SR	II and III	Unmodified
McQuaid, Kathleen	54558	02/01/24	SR	II and III	Unmodified
Miranda, Ernesto	71670	02/01/24	SR	III	Unmodified
Oha, Elizabeth	73849	02/01/24	SR	III	Unmodified
Olsen, Laura	D9500	01/27/24	SR	II and III	Unmodified
Perla-Bonilla, Roxanna	76133	02/02/24	SR	III	Unmodified
Scherer, Clare	50140	01/10/24	SR	II and III	Unmodified
Stehr, Shawn	60603	02/07/24	SR	Safety A	Unmodified
Stortz, Jocelyn	69183	02/01/24	SR	III	Unmodified
Ubaldo, Sofronio	79387	01/31/24	SR	PEPRA 5.2	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

DEATHS

<u>Name</u>	<u>Date of Death</u>	<u>Employer as of Date of Death</u>
Comly, John H.	03/28/24	Contra Costa County
Linn, Cameron	03/30/24	Contra Costa County Fire Protection District
Maestas, Shirley	03/30/24	Contra Costa County
Hansen, Sally	01/12/24	Contra Costa County
Friedhaber, Donald	04/08/24	Contra Costa County
Borlandelli, Carlo	04/03/24	Contra Costa County
Farrelly, Patricia	04/08/24	Contra Costa County
Schuetz, Margie	04/14/24	Contra Costa County



Meeting Date
05/01/2024
Agenda Item
#3.A-IId.

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

March 2024 Performance

	Cash Flow	Coverage Ratio
Benefit Cash Flow Projected by Model	\$51,500,000	
Liquidity Sub-Portfolio Cash Flow	\$51,500,000	100%
Actual Benefits Paid	\$51,607,881	99.8%
<i>Next Month's Projected Benefit Payment</i>	<i>\$52,000,000</i>	

Monthly Manager Positioning – March 2024

	Beginning Market Value	Liquidity Program Cash Flow	Market Value Change/Other Activity	Ending Market Value
DFA	\$346,503,210	(\$11,250,000)	\$1,664,484	\$336,917,694
Insight	\$566,263,230	(\$19,250,000)	\$2,425,856	\$549,439,086
Sit	\$613,235,567	(\$21,000,000)	\$4,380,538	\$596,616,105
Liquidity	\$1,526,002,007	(\$51,500,000)	\$8,470,878	\$1,482,972,885
Cash	\$157,993,014	(\$107,881)	\$16,144,694	\$174,029,827
Liquidity + Cash	\$1,683,995,021	(\$51,607,881)	\$24,615,572	\$1,657,002,712

Functional Roles

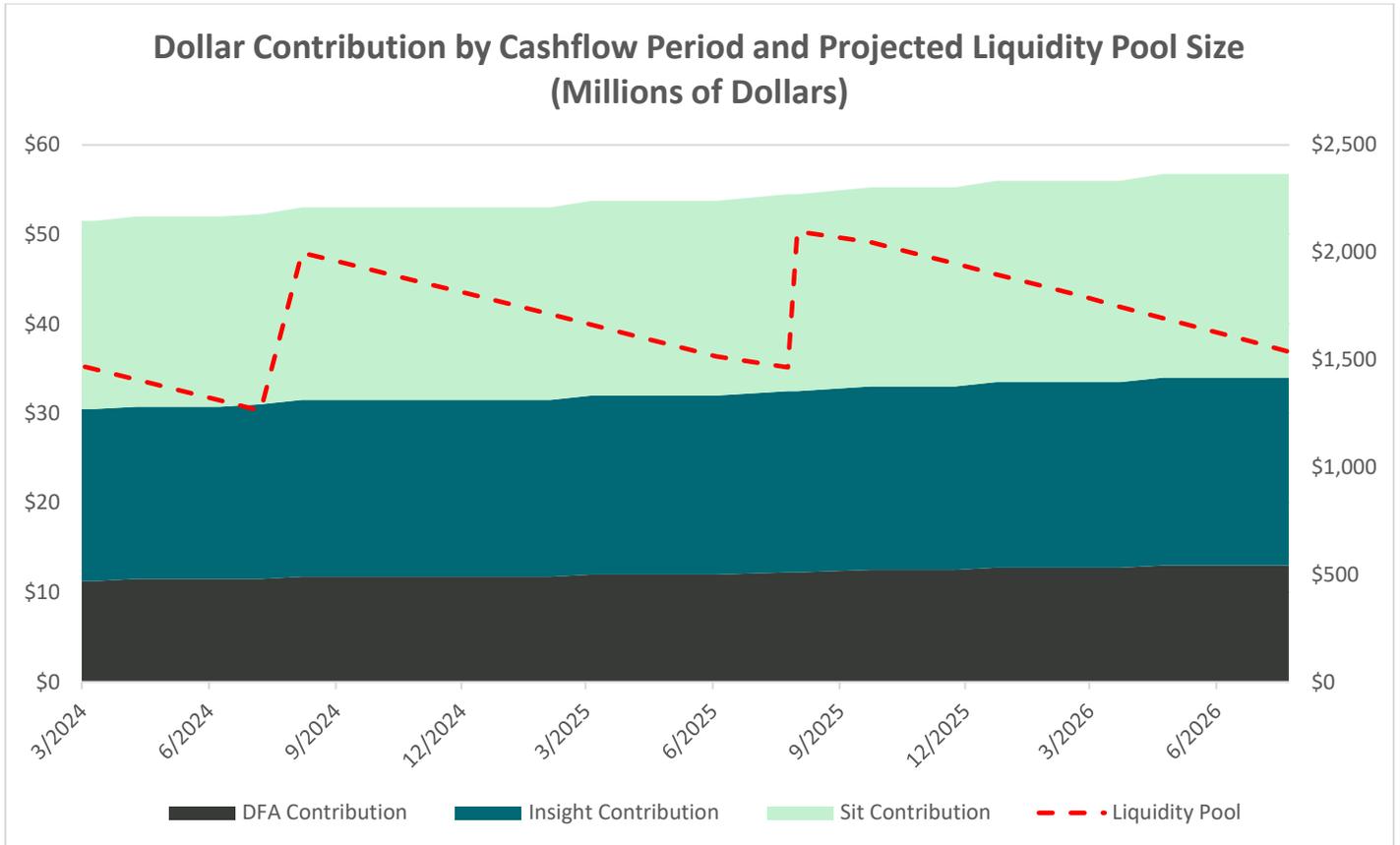
Manager	Portfolio Characteristics	Liquidity Contribution
Sit	High quality portfolio of small balance, government guaranteed mortgages with higher yields.	Pays out net income on monthly basis.
DFA	High quality, short duration portfolio of liquid, low volatility characteristics.	Pays out a pre-determined 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 third cash flow for 2024 from the liquidity program was completed on March 22nd. The actuarial model cash flow was slightly lower than actual experience, producing \$108 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.



DISABILITY RETIREMENT APPLICATIONS

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

<u>Name</u>	<u>Number</u>	<u>Filed</u>	<u>Type</u>
Oha, Elizabeth	73849	03/21/24	NSCD

<u>Option Type</u>	<u>Tier</u>
NSP = Non-Specified	I = Tier I
SCD = Service Connected Disability	II = Tier II
SR = Service Retirement	III = Tier III
NSCD = Non-Service Connected Disability	S/A = Safety Tier A
* = County Advance Selected w/option	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

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

Liquidity	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Dimensional Fund Advisors	336,917,694	3.0%	4.0%	-1.0%		
Insight	549,439,086	4.9%	6.5%	-1.6%		
Sit	596,616,105	5.3%	6.5%	-1.2%		
Total Liquidity	1,482,972,885	13.2%	17.0%	-3.8%	17.0%	-3.8%

**Range
11-22%**

Growth	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Domestic Equity						
Boston Partners	452,730,687	4.0%	3.0%	1.0%		
BlackRock Index Fund	1,333,773,694	11.8%	10.0%	1.8%		
Emerald Advisers	246,394,831	2.2%	1.5%	0.7%		
Ceredex	233,230,453	2.1%	1.5%	0.6%		
Total Domestic Equity	2,266,129,665	20.1%	16.0%	4.1%	13.0%	7.1%

Global & International Equity

Pyrford (Columbia)	511,125,103	4.5%	4.0%	0.5%		
William Blair	504,471,490	4.5%	4.0%	0.5%		
First Eagle	597,959,112	5.3%	5.0%	0.3%		
Artisan Global Opportunities	665,966,949	5.9%	5.0%	0.9%		
PIMCO/RAE Emerging Markets	259,484,680	2.3%	2.0%	0.3%		
TT Emerging Markets	247,527,838	2.2%	2.0%	0.2%		
Total Global & International Equity	2,786,535,173	24.7%	22.0%	2.7%	19.0%	5.7%

Private Equity**

Private Credit	1,312,911,959	11.6%	13.0%	-1.4%	18.0%	-6.4%
Real Estate - Value Add	1,105,621,501	9.8%	10.0%	-0.2%	13.0%	-3.2%
Real Estate - Opportunistic & Distressed	223,556,256	2.0%	4.0%	-2.0%	5.0%	-3.0%
Real Estate - REIT	308,197,460	2.7%	4.0%	-1.3%	5.0%	-2.3%
Adelante	98,152,536	0.9%	2.0%	-0.1%	0.0%	1.9%
Invesco	114,931,558	1.0%				
High Yield	159,409,366	1.4%	2.0%	-0.6%	0.0%	1.4%
Risk Parity			3.0%	0.1%	3.0%	0.1%
AQR GRP EL	182,826,494	1.6%				
PanAgora	167,177,979	1.5%				
Total Other Growth Assets	3,672,785,109	32.6%	38.0%	-5.4%	44.0%	-11.4%

Total Growth Assets	8,725,449,947	77.4%	76.0%	1.4%	76.0%	1.4%
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**Range
65-85%**

Risk Diversifying	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
AFL-CIO	221,307,577	2.0%	2.5%	-0.5%	2.5%	-0.5%
Acadian MAARS	163,606,331	1.5%	2.0%	-0.5%	2.5%	-1.0%
Sit LLCAR	372,229,605	3.3%	2.5%	0.8%	2.0%	1.3%
Total Risk Diversifying	757,143,513	6.7%	7.0%	-0.3%	7.0%	-0.3%

**Range
0% - 10%**

Cash and Overlay	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Overlay (Parametric)	131,628,297	1.2%		1.2%		
Cash	174,029,827	1.5%		1.5%		
Total Cash and Overlay	305,658,124	2.7%	0.0%	2.7%	0.0%	2.7%

Total Fund	11,271,224,469	100%	100%		100%	
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*Current targets and ranges reflect asset allocation targets accepted by the Board on July 12, 2023 (BOR Resolution 2023-3).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

**Private Market Investments
As of March 31, 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	8,356,632	0.07%	74,052,349
EQT Exeter Industrial Value Fund VI	06/02/23	06/02/31				60,000,000	4,962,651	0.04%	54,000,000
Invesco IREF IV	12/01/14	12/01/21				35,000,000	356,326	0.00%	4,453,599
Invesco IREF V	09/11/18	09/11/25				75,000,000	58,669,764	0.52%	6,581,100
Invesco IREF VI	09/21/21	09/22/29				100,000,000	45,377,700	0.40%	44,107,074
Long Wharf FREG IV	08/14/13	09/30/21				25,000,000	292,567	0.00%	
Long Wharf FREG V	10/31/16	09/30/24				50,000,000	26,625,270	0.24%	
Long Wharf LREP VI	02/05/20	02/05/28				50,000,000	34,458,333	0.31%	361,552
Long Wharf LREP VII	05/15/23	03/31/32				50,000,000	8,475,163	0.08%	40,098,071
LaSalle Income & Growth Fund VI	01/31/12	01/31/19				75,000,000	12,520,362	0.11%	3,946,000
LaSalle Income & Growth Fund VII	10/31/16	09/30/24				75,000,000	23,461,488	0.21%	87,245
						920,000,000	223,556,256	1.98%	227,686,990
Outstanding Commitments							227,686,990		
Total							451,243,246		

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	5,160,067	0.05%	95,692,812
Cross Lake Real Estate Fund IV	04/11/23	04/11/33				60,000,000	2,138,173	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	11,434,409	0.10%	4,031,338
DLJ Real Estate Capital Partners, L.P. IV	12/31/07	09/30/18				100,000,000	43,051,205	0.38%	1,876,084
DLJ Real Estate Capital Partners, L.P. V	07/31/13	12/31/22				75,000,000	12,398,180	0.11%	502,096
DLJ Real Estate Capital Partners, L.P. VI	02/28/19	01/31/29				50,000,000	12,109,351	0.11%	12,652,562
KSL Capital VI	10/24/23	10/24/33				50,000,000	9,230,169	0.08%	40,769,830
Oaktree Real Estate Opportunities Fund V	02/01/11	02/01/21				50,000,000	379,871	0.00%	25,750,000
Oaktree Real Estate Opportunities Fund VI	09/30/13	09/30/20				80,000,000	17,840,801	0.16%	18,400,000
Oaktree Real Estate Opportunities Fund VII	02/28/15	02/28/23				65,000,000	37,548,420	0.33%	16,120,000
PCCP Equity IX	04/11/22	04/01/30				75,000,000	64,923,960	0.58%	17,448,436
Siguler Guff Distressed Real Estate Opp. Fund	07/30/11	07/30/22				75,000,000	12,290,002	0.11%	5,625,000
Siguler Guff Distressed Real Estate Opp. Fund II	08/31/13	08/31/25				70,000,000	27,103,995	0.24%	8,015,000
Siguler Guff Distressed Real Estate Opp. II Co-Inv	01/31/16	10/31/25				25,000,000	12,248,272	0.11%	3,722,138
Paulson Real Estate Fund II	11/10/13	11/10/20				20,000,000	12,539,072	0.11%	654,377
Angelo Gordon Realty Fund VIII	12/31/11	12/31/18				80,000,000	10,216,357	0.09%	12,334,302
Angelo Gordon Realty Fund IX	10/10/14	10/10/22				65,000,000	17,585,156	0.16%	7,572,500
						1,115,000,000	308,197,460	2.67%	328,174,688
Outstanding Commitments							328,174,688		
Total							636,372,148		

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	3,446,984	0.03%	0
Torchlight Debt Opportunity Fund V	12/31/14	09/17/22				75,000,000	7,436,343	0.07%	15,000,000
Angelo Gordon Energy Credit Opportunities	09/10/15	09/10/20				16,500,000	2,323,574	0.02%	2,319,783
CCCERA StepStone	12/01/17	11/30/27				1,170,000,000	1,092,414,600	9.69%	271,890,386
						1,321,500,000	1,105,621,501	9.81%	289,210,169
Outstanding Commitments							289,210,169		
Total							1,394,831,670		

**Private Market Investments
As of March 31, 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	113,285,436	1.01%	16,200,628
Adams Street Secondary II	12/31/08	12/31/20				30,000,000	3,282,372	0.03%	1,635,000
Adams Street Secondary V	10/31/12	10/31/22				40,000,000	9,641,758	0.09%	9,154,125
Adams Street Venture Innovation Fund	03/09/16	03/09/28				75,000,000	158,085,571	1.40%	5,719,749
AE Industrial Partners Fund II	05/18/18	05/18/28				35,000,000	35,700,818	0.32%	7,831,761
Altaris Health Partners VI	07/28/23	07/28/33				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	13,081,700	0.12%	0
Carpenter Community BancFund	10/31/09	10/31/19				30,000,000	0	0.00%	0
EIF USPF II	06/15/05	06/15/15	3rd 1 YR	LP	06/15/18	50,000,000	10,602	0.00%	0
EIF USPF III	02/28/07	02/28/17	1st 1 YR	LP	02/28/18	65,000,000	2,206,910	0.02%	0
EIF USPF IV	06/28/10	06/28/20				50,000,000	18,909,056	0.17%	4
Ares EIF V	09/09/15	11/19/25				50,000,000	31,247,444	0.28%	3,888,697
EQT X	11/17/22	11/17/32				100,000,000	13,721,976	0.12%	84,044,628
Genstar Capital Partners IX	02/18/19	02/18/29				50,000,000	70,455,686	0.63%	6,983,671
Genstar Capital Partners X	04/01/31	04/01/31				42,500,000	40,605,958	0.36%	2,586,711
Genstar Capital Partners XI	04/26/23	04/26/33				75,000,000	106,530	0.00%	74,701,790
GTCR XIII	10/27/20	12/31/36				50,000,000	27,406,158	0.24%	23,422,247
GTCR XIV	01/12/23	01/12/33				100,000,000	0	0.00%	100,000,000
Hellman & Friedman Capital Partners X	05/10/21	05/10/31				75,000,000	57,503,532	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	12,622,180	0.11%	49,050,651
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	326,303	0.00%	6,308,961
Ocean Avenue Fund II	05/07/14	05/07/24				30,000,000	20,139,066	0.18%	3,000,000
Ocean Avenue Fund III	12/09/15	12/09/25				50,000,000	50,182,111	0.45%	3,500,000
Paladin III	08/15/08	08/15/18				25,000,000	8,478,402	0.08%	263,230
Pathway	11/09/98	05/31/21				125,000,000	1,527,909	0.01%	10,513,800
Pathway 2008	12/26/08	12/26/23				30,000,000	9,860,893	0.09%	2,588,505
Pathway 6	05/24/11	05/24/26				40,000,000	24,580,260	0.22%	3,626,887
Pathway 7	02/07/13	02/07/23				70,000,000	58,581,040	0.52%	5,127,103
Pathway 8	11/23/15	11/23/25				50,000,000	62,295,500	0.55%	2,949,208
Siguler Guff CCCERA Opportunities	06/03/14	05/31/25				200,000,000	99,199,947	0.88%	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	44,553,253	0.40%	943,230
Symphony Technology Group VII	12/21/22	12/21/32				50,000,000	4,153,818	0.04%	43,931,601
TA XIV	05/27/21	05/27/31				50,000,000	39,337,859	0.35%	9,750,000
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	24,963,424	0.22%	3,098,020
TPG Healthcare Partners II	06/30/22	06/30/32				60,000,000	12,042,201	0.11%	46,233,847
TPG Partners IX	06/30/22	06/30/32				65,000,000	16,766,691	0.15%	47,746,188
Trident VIII, L.P.	05/24/19	05/24/29				40,000,000	50,073,726	0.44%	4,992,136
Trident IX, L.P.	09/17/21	09/17/31				50,000,000	27,266,520	0.24%	24,615,378
Real Assets									
Aether III & III Surplus	11/30/13	11/30/20				75,000,000	55,954,497	0.50%	1,122,805
Aether IV	01/01/16	01/01/28				50,000,000	51,326,271	0.46%	5,412,880
Commonfund Capital Natural Resources IX	06/30/13	06/30/20				50,000,000	35,053,398	0.31%	2,250,007
Wastewater Opportunity Fund	12/31/15	11/30/22				25,000,000	8,375,182	0.07%	521,541
						2,851,065,614	1,312,911,959	12.65%	922,017,571
Outstanding Commitments							922,017,571		
Total							2,234,929,530		

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.
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.

Meeting Date
05/01/2024
Agenda Item
#5

**Contra Costa County
Employees' Retirement Association**

Proposal to Manage UAAL Amortization “Tail Volatility”

Prepared by Paul Angelo and Andy Yeung

May 2024

This document was prepared as part of a presentation made to CCCERA in May 2024 and is not complete without the remainder of presentation.

CCCERA's UAAL Amortization Structure

- Based on the Board's Funding Policy
 - Each new change in UAAL is amortized over separate, “closed” periods
 - 18 years for gains/losses, assumptions changes and method changes
 - 10 years for plan amendments but with certain exception
 - Amortization payments structured as a level percentage of projected total payroll

CCCERA's UAAL Amortization Structure

- For each amortization layer, the amortization schedule shows
 - Source and amount of each change in UAAL since 2008
 - Outstanding balance remaining
 - Years remaining before being fully amortized
 - Current amortization payment
- Sum of outstanding balances by layer equals total UAAL
 - Separate schedules for each cost group

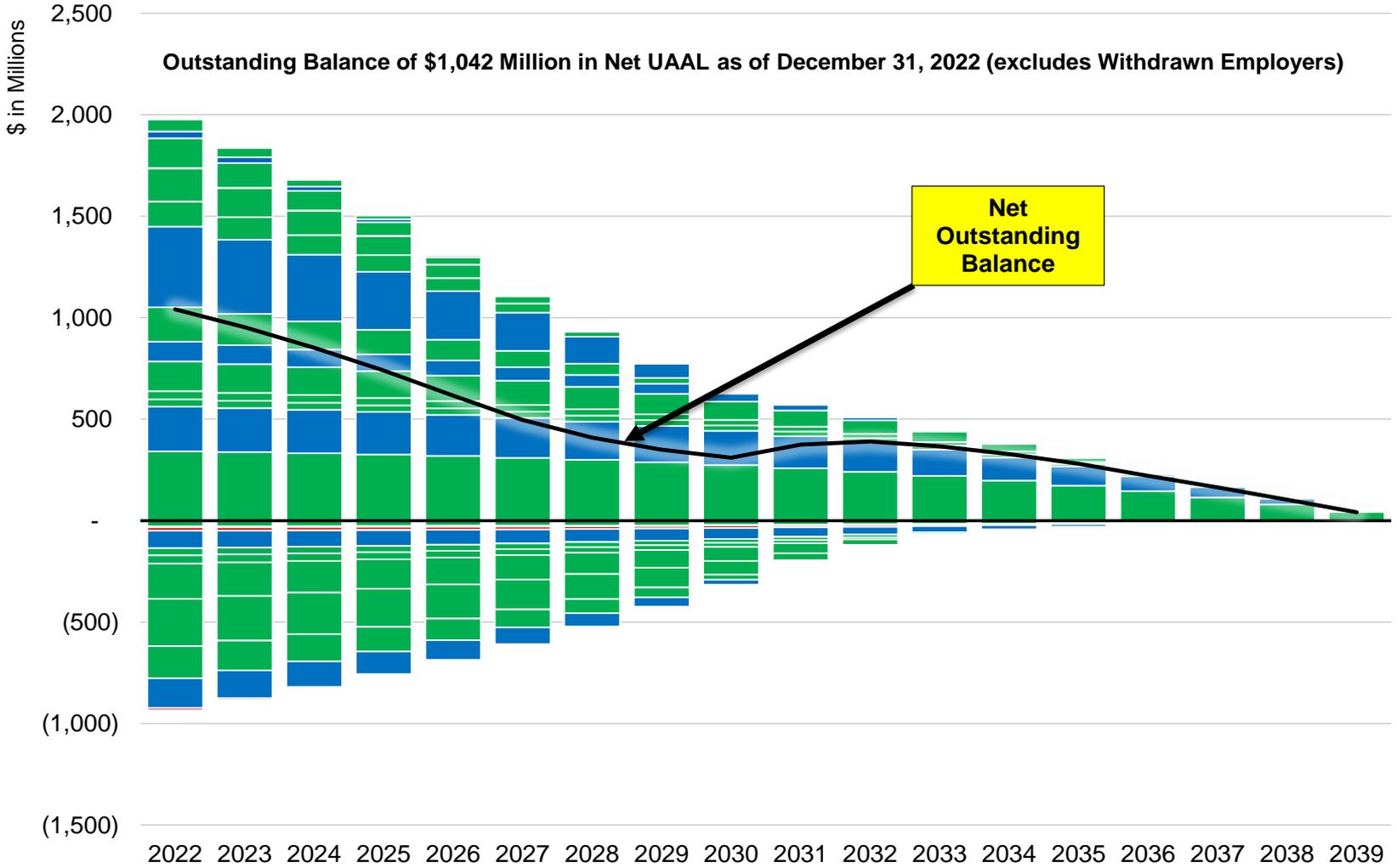
CCCERA December 31, 2022 Amortization Schedule

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment
Restart of Amortization	December 31, 2007	\$1,103,764,302	15	\$0	0	\$0
County General POBs	December 31, 2007	(453,973,319)	15	0	0	0
Moraga General POBs	December 31, 2007	(701,412)	15	0	0	0
CCCFPD Safety POBs	December 31, 2007	(127,509,711)	15	0	0	0
Actuarial Loss	December 31, 2008	127,228,371	18	58,586,568	4	15,996,683
Actuarial Loss	December 31, 2009	267,892,376	18	145,513,465	5	32,343,142
Assumption Change	December 31, 2009	60,965,491	18	33,115,164	5	7,360,477
Depooling Implementation	December 31, 2009	(18,188,149)	18	(9,879,417)	5	(2,195,889)
Actuarial Loss	December 31, 2010	265,289,245	18	163,223,737	6	30,760,405
Assumption Change	December 31, 2010	4,041,816	18	2,486,796	6	468,650
Actuarial Loss	December 31, 2011	183,273,836	18	124,190,957	7	20,408,763
First Five UAAL Prepayment	December 31, 2011	(1,794,205)	11	0	0	0
Actuarial Loss	December 31, 2012	231,260,954	18	169,083,889	8	24,731,794
Assumption Change	December 31, 2012	544,097,665	18	397,810,992	8	58,187,564
Actuarial Gain	December 31, 2013	(202,325,285)	18	(157,651,030)	9	(20,848,280)
Assumption Change	December 31, 2013	(189,066,417)	18	(147,319,774)	9	(19,482,039)
Actuarial Gain	December 31, 2014	(284,855,905)	18	(233,645,779)	10	(28,281,364)
Assumption Change	December 31, 2014	(51,701)	18	(42,406)	10	(5,133)
Actuarial Gain	December 31, 2015	(202,620,622)	18	(173,209,601)	11	(19,382,161)
Assumption Change	December 31, 2015	114,345,251	18	97,747,678	11	10,937,969
Actuarial Gain	December 31, 2016	(46,362,239)	18	(41,184,365)	12	(4,295,449)
San Ramon UAAL Prepayment	December 31, 2017	(303,806)	18	(278,524)	13	(27,263)
LAFCO UAAL Prepayment	December 31, 2017	(30,817)	18	(28,253)	13	(2,765)
Actuarial Gain	December 31, 2017	(38,341,514)	18	(35,150,870)	13	(3,440,639)
San Ramon UAAL Prepayment	December 31, 2018	(261,501)	18	(245,984)	14	(22,728)
Actuarial Loss	December 31, 2018	155,264,736	18	146,051,712	14	13,494,841
Assumption Change	December 31, 2018	(90,889,139)	18	(85,496,003)	14	(7,899,632)
San Ramon UAAL Prepayment	December 31, 2019	(1,267,559)	18	(1,217,287)	15	(106,706)
LAFCO UAAL Prepayment	December 31, 2019	(31,680)	18	(30,424)	15	(2,667)
Actuarial Loss	December 31, 2019	41,748,029	18	40,092,287	15	3,514,438
Method Change	December 31, 2019	(17,427,203)	18	(16,736,034)	15	(1,467,060)
San Ramon UAAL Prepayment	December 31, 2020	(267,529)	18	(261,155)	16	(21,813)
LAFCO UAAL Prepayment	December 31, 2020	(31,963)	18	(31,201)	16	(2,606)
CCCFPD UAAL Prepayment	December 31, 2020	(3,021,672)	18	(2,949,675)	16	(246,373)
Actuarial Loss	December 31, 2020	36,503,813	18	35,634,037	16	2,976,342
San Ramon UAAL Prepayment	December 31, 2021	(270,666)	18	(267,552)	17	(21,375)
LAFCO UAAL Prepayment	December 31, 2021	(31,804)	18	(31,438)	17	(2,512)
Actuarial Gain	December 31, 2021	(28,564,305)	18	(28,235,659)	17	(2,255,761)
Assumption Change	December 31, 2021	223,522,296	18	220,950,569	17	17,651,851
San Ramon UAAL Prepayment	December 31, 2022	(286,847)	18	(286,847)	18	(21,993)
Actuarial Loss	December 31, 2022	341,894,603	18	341,894,603	18	26,213,465
CG#6 - Actuarial Surplus	December 31, 2022	(634,577)	N/A	(634,577)	N/A	0
Total – All Cost Groups				\$1,041,568,598		\$155,014,176

CCCERA's UAAL Amortization Structure

- December 31, 2022 valuation includes graphical representation of UAAL amortization layers
 - Projects UAAL amortization bases and payments
 - **Assuming no future actuarial gains/losses, assumption changes or plan amendments**
 - Use graphs in conjunction with amortization schedule

CCCERA's UAAL Balances as of December 31, 2022



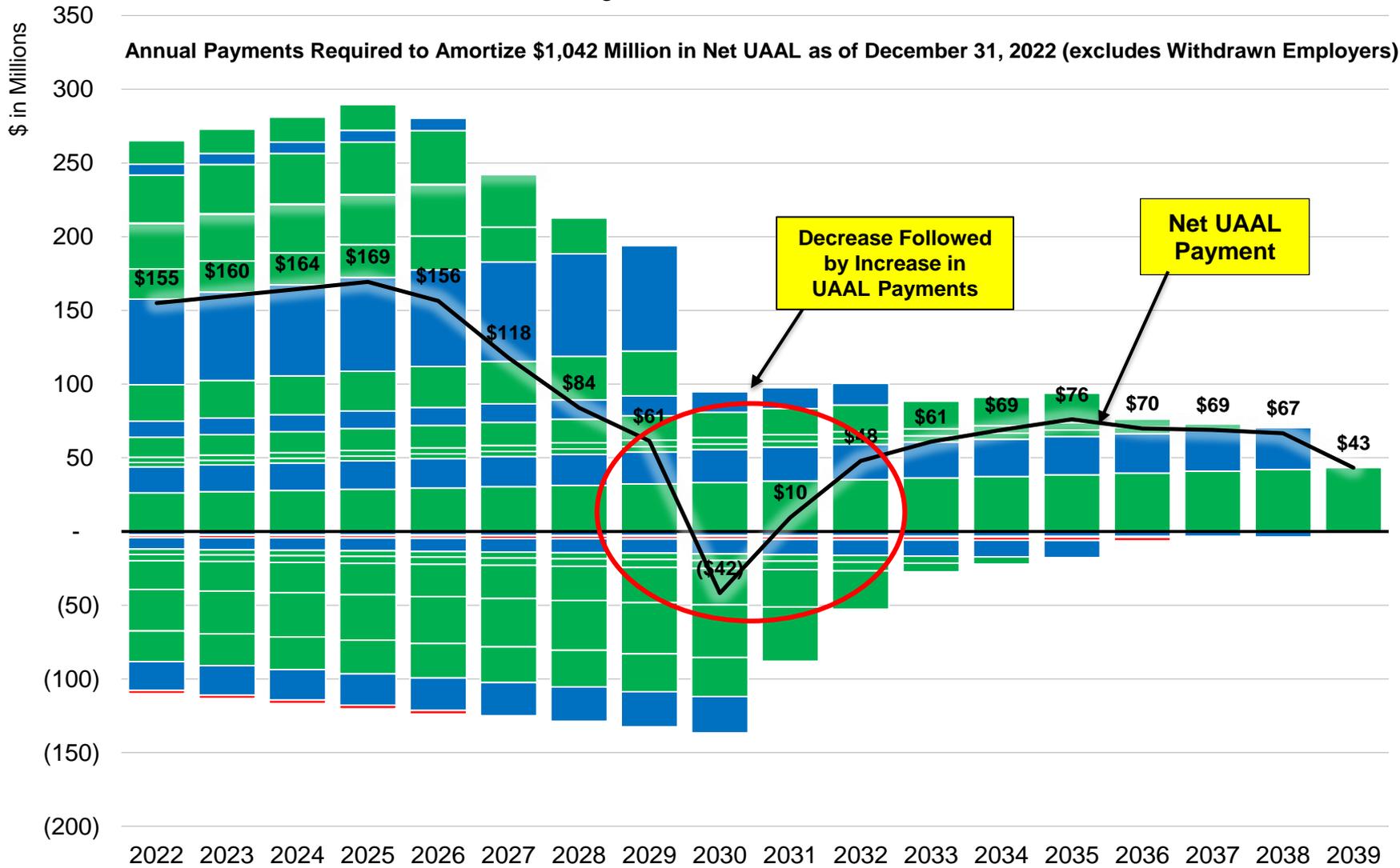
Gains & Losses
 Assumption / Plan Changes
 Other Changes

 Net Outstanding Balance

CCCERA's UAAL Amortization Structure

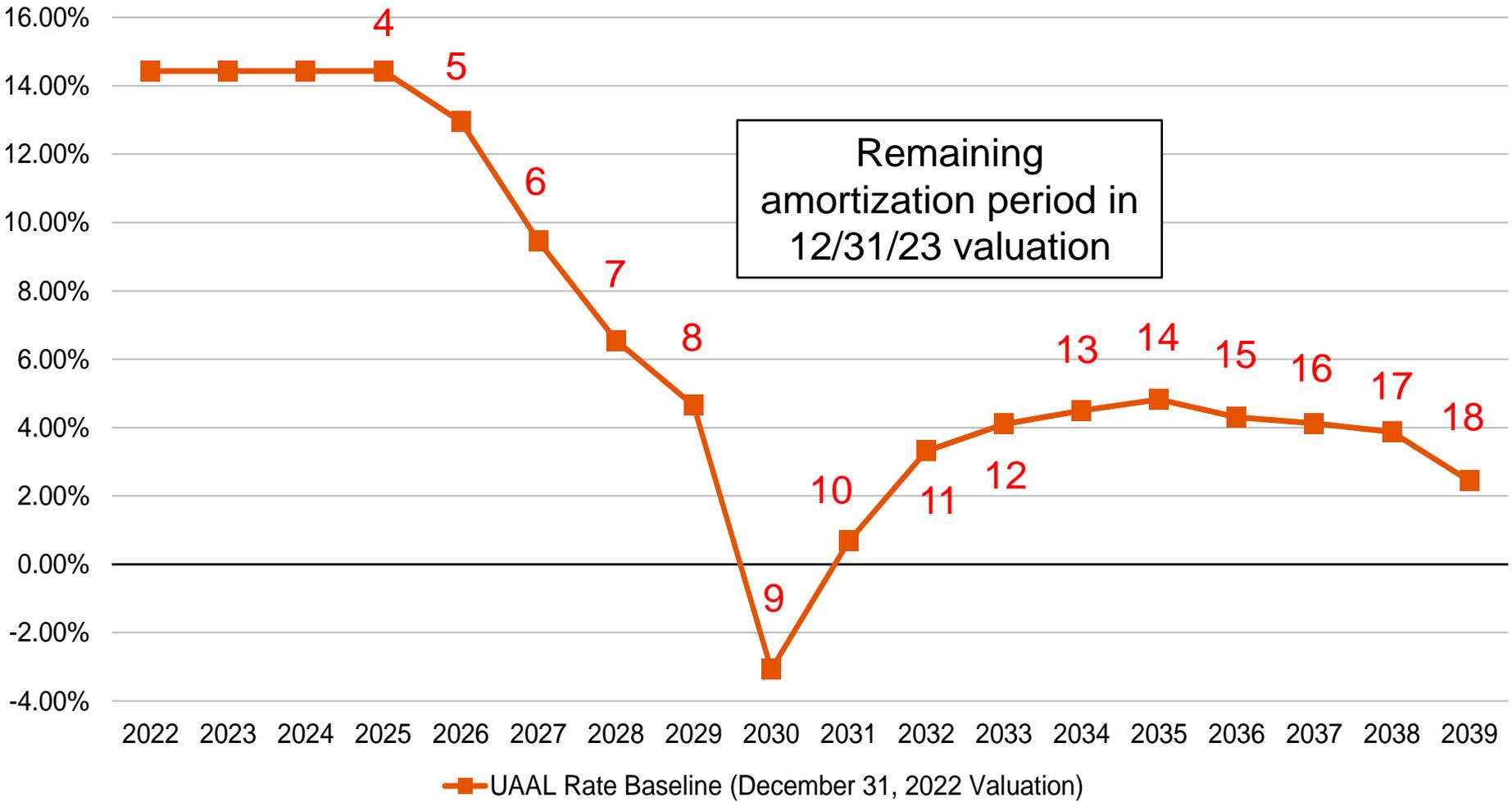
- Layered amortization allows full transparency by tracking:
 - Where UAAL came from
 - When each portion of UAAL will be fully amortized
- Ability to track UAAL comes at a policy price: tail volatility
 - Most layers are “charge” layers, but gain layers are “credit” layers
 - When a charge layer is fully amortized, next year’s contribution decreases
 - When a credit layer is fully amortized, next year’s contribution increases

CCCERA's UAAL Payments as of December 31, 2022



- Gains & Losses
- Assumption / Plan Changes
- Other Changes
- ^ Net UAAL Payment

CCCERA's Projection of UAAL Contribution Rates (% of Payroll)



Managing Tail Volatility

- Solution: occasional active management of amortization periods
 - Only to manage tail volatility
 - Not intended to accelerate or decelerate UAAL funding
- For CCCERA, net UAAL payments decrease then increase between 2029 and 2032 valuations
 - Decreases in 2029 and 2030 due to full amortization of net actuarial loss charge layers established in 2011 and 2012
 - Increases in 2031 and 2032 due to full amortization of net actuarial gain credit layers established in 2013 and 2014

Managing Tail Volatility – Proposed Adjustment to UAAL Amortization Periods

- To manage UAAL rate volatility in upcoming valuations
 - Proposed effective with the December 31, 2023 valuation
 - Action now reduces immediate impact on employer contributions
- Uses 6-year remaining amortization period for amortization layers established in the 2011 through 2018 valuations
 - 16 layers over 8 years, currently with 6 to 13 years remaining
 - Net total outstanding balance is \$39.9 million as of 12/31/2023
 - Note we adjust periods, not combine layers, to keep UAAL history
- First year impact on the net amortization payment
 - Adjustment results in a decrease UAAL contribution rate of about 1.6% of pay in the 12/31/2023 valuation

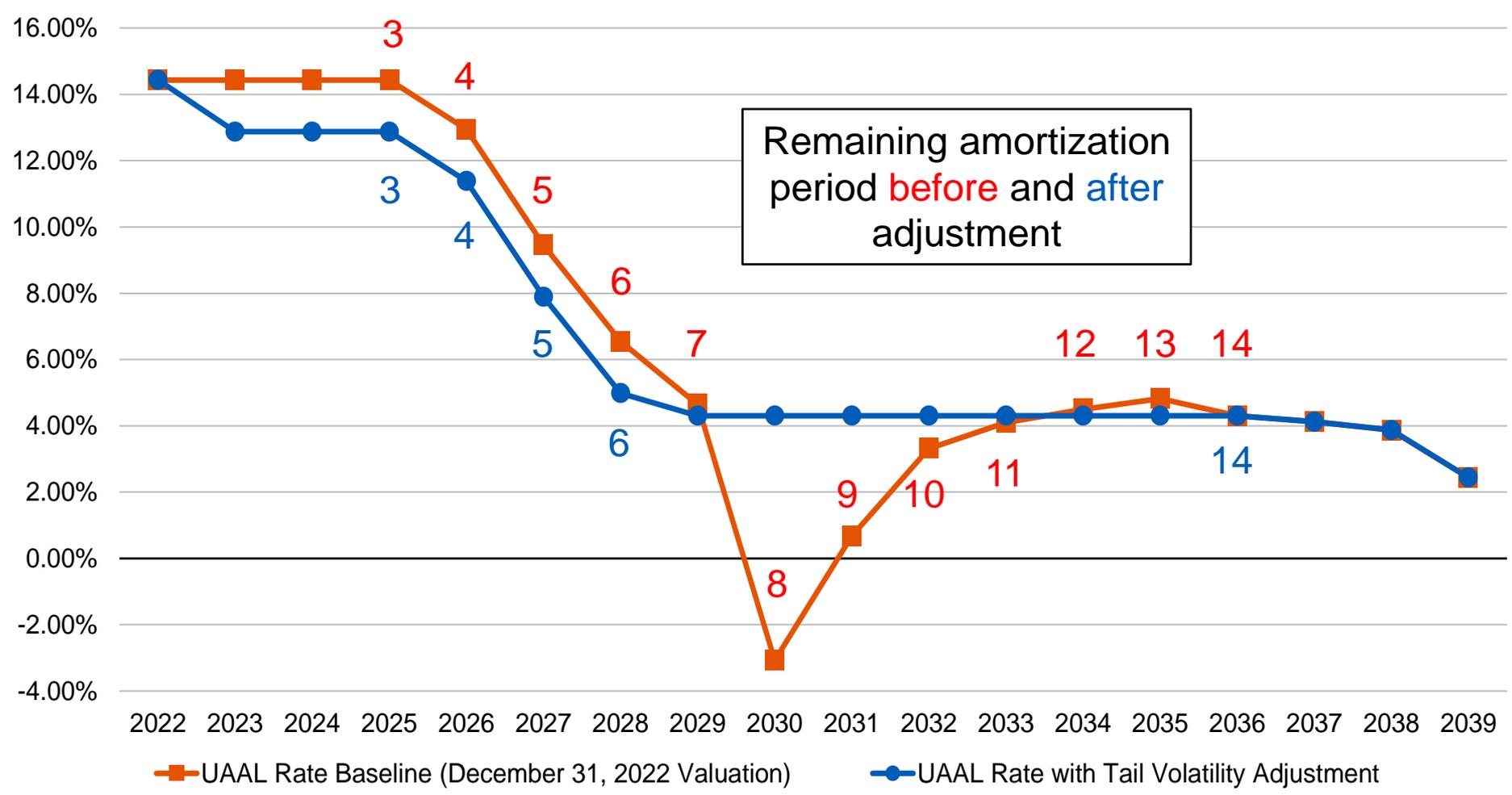
Projected Amortization Schedule as of December 31, 2023 **before** UAAL Tail Volatility Adjustment

Type	Date Established	Initial Amount	Initial Period	Outstanding		
				Balance	Years Remaining	Annual Payment
Actuarial Loss	December 31, 2008	\$127,228,371	18	\$46,057,454	3	\$16,476,584
Actuarial Loss	December 31, 2009	267,892,376	18	122,007,786	4	33,313,437
Assumption Change	December 31, 2009	60,965,491	18	27,765,869	4	7,581,291
Depooling Implementation	December 31, 2009	(18,188,149)	18	(8,283,535)	4	(2,261,766)
Actuarial Loss	December 31, 2010	265,289,245	18	142,544,425	5	31,683,217
Assumption Change	December 31, 2010	4,041,816	18	2,171,737	5	482,710
Actuarial Loss	December 31, 2011	183,273,836	18	111,543,733	6	21,021,026
Actuarial Loss	December 31, 2012	231,260,954	18	155,012,292	7	25,473,748
Assumption Change	December 31, 2012	544,097,665	18	364,704,134	7	59,933,191
Actuarial Gain	December 31, 2013	(202,325,285)	18	(146,809,463)	8	(21,473,728)
Assumption Change	December 31, 2013	(189,066,417)	18	(137,188,682)	8	(20,066,502)
Actuarial Gain	December 31, 2014	(284,855,905)	18	(220,274,471)	9	(29,129,805)
Assumption Change	December 31, 2014	(51,701)	18	(39,979)	9	(5,287)
Actuarial Gain	December 31, 2015	(202,620,622)	18	(164,928,993)	10	(19,963,626)
Assumption Change	December 31, 2015	114,345,251	18	93,074,668	10	11,266,108
Actuarial Gain	December 31, 2016	(46,362,239)	18	(39,538,084)	11	(4,424,313)
San Ramon UAAL Prepayment	December 31, 2017	(303,806)	18	(269,232)	12	(28,080)
LAFCO UAAL Prepayment	December 31, 2017	(30,817)	18	(27,310)	12	(2,848)
Actuarial Gain	December 31, 2017	(38,341,514)	18	(33,978,165)	12	(3,543,857)
San Ramon UAAL Prepayment	December 31, 2018	(261,501)	18	(239,168)	13	(23,410)
Actuarial Loss	December 31, 2018	155,264,736	18	142,004,507	13	13,899,686
Assumption Change	December 31, 2018	(90,889,139)	18	(83,126,844)	13	(8,136,622)
San Ramon UAAL Prepayment	December 31, 2019	(1,267,559)	18	(1,189,500)	14	(109,907)
LAFCO UAAL Prepayment	December 31, 2019	(31,680)	18	(29,729)	14	(2,747)
Actuarial Loss	December 31, 2019	41,748,029	18	39,177,080	14	3,619,872
Method Change	December 31, 2019	(17,427,203)	18	(16,353,992)	14	(1,511,071)
San Ramon UAAL Prepayment	December 31, 2020	(267,529)	18	(256,305)	15	(22,467)
LAFCO UAAL Prepayment	December 31, 2020	(31,963)	18	(30,622)	15	(2,684)
CCCFPD UAAL Prepayment	December 31, 2020	(3,021,672)	18	(2,894,904)	15	(253,764)
Actuarial Loss	December 31, 2020	36,503,813	18	34,972,376	15	3,065,634
San Ramon UAAL Prepayment	December 31, 2021	(270,666)	18	(263,586)	16	(22,016)
LAFCO UAAL Prepayment	December 31, 2021	(31,804)	18	(30,972)	16	(2,587)
Actuarial Gain	December 31, 2021	(28,564,305)	18	(27,817,128)	16	(2,323,434)
Assumption Change	December 31, 2021	223,522,296	18	217,675,465	16	18,181,407
San Ramon UAAL Prepayment	December 31, 2022	(286,847)	18	(283,547)	17	(22,653)
Actuarial Loss	December 31, 2022	341,894,603	18	337,960,947	17	26,999,869
CG#6 - Actuarial Surplus	December 31, 2022	(634,577)	N/A	(677,411)	N/A	0
Total – All Cost Groups				\$952,140,851		\$159,664,606

Projected Amortization Schedule as of December 31, 2023 **after** UAAL Tail Volatility Adjustment

Type	Date Established	Initial Amount	Initial Period	Outstanding		
				Balance	Years Remaining	Annual Payment
Actuarial Loss	December 31, 2008	\$127,228,371	18	\$46,057,454	3	\$16,476,584
Actuarial Loss	December 31, 2009	267,892,376	18	122,007,786	4	33,313,437
Assumption Change	December 31, 2009	60,965,491	18	27,765,869	4	7,581,291
Depooling Implementation	December 31, 2009	(18,188,149)	18	(8,283,535)	4	(2,261,766)
Actuarial Loss	December 31, 2010	265,289,245	18	142,544,425	5	31,683,217
Assumption Change	December 31, 2010	4,041,816	18	2,171,737	5	482,710
Actuarial Loss	December 31, 2011	183,273,836	18	111,543,733	6	21,021,026
Actuarial Loss	December 31, 2012	231,260,954	18	155,012,292	6	29,212,913
Assumption Change	December 31, 2012	544,097,665	18	364,704,134	6	68,730,487
Actuarial Gain	December 31, 2013	(202,325,285)	18	(146,809,463)	6	(27,667,046)
Assumption Change	December 31, 2013	(189,066,417)	18	(137,188,682)	6	(25,853,957)
Actuarial Gain	December 31, 2014	(284,855,905)	18	(220,274,471)	6	(41,511,928)
Assumption Change	December 31, 2014	(51,701)	18	(39,979)	6	(7,534)
Actuarial Gain	December 31, 2015	(202,620,622)	18	(164,928,993)	6	(31,081,770)
Assumption Change	December 31, 2015	114,345,251	18	93,074,668	6	17,540,430
Actuarial Gain	December 31, 2016	(46,362,239)	18	(39,538,084)	6	(7,451,168)
San Ramon UAAL Prepayment	December 31, 2017	(303,806)	18	(269,232)	6	(50,738)
LAFCO UAAL Prepayment	December 31, 2017	(30,817)	18	(27,310)	6	(5,147)
Actuarial Gain	December 31, 2017	(38,341,514)	18	(33,978,165)	6	(6,403,371)
San Ramon UAAL Prepayment	December 31, 2018	(261,501)	18	(239,168)	6	(45,072)
Actuarial Loss	December 31, 2018	155,264,736	18	142,004,507	6	26,761,525
Assumption Change	December 31, 2018	(90,889,139)	18	(83,126,844)	6	(15,665,708)
San Ramon UAAL Prepayment	December 31, 2019	(1,267,559)	18	(1,189,500)	14	(109,907)
LAFCO UAAL Prepayment	December 31, 2019	(31,680)	18	(29,729)	14	(2,747)
Actuarial Loss	December 31, 2019	41,748,029	18	39,177,080	14	3,619,872
Method Change	December 31, 2019	(17,427,203)	18	(16,353,992)	14	(1,511,071)
San Ramon UAAL Prepayment	December 31, 2020	(267,529)	18	(256,305)	15	(22,467)
LAFCO UAAL Prepayment	December 31, 2020	(31,963)	18	(30,622)	15	(2,684)
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Actuarial Loss	December 31, 2022	341,894,603	18	337,960,947	17	26,999,869
CG#6 - Actuarial Surplus	December 31, 2022	(634,577)	N/A	(677,411)	N/A	0
Total – All Cost Groups				\$952,140,851		\$142,391,867

CCCERA's Projection of UAAL Contribution Rates (% of Payroll) with Adjustment



Managing Tail Volatility – Recommendation

- Adjust selected amortization periods to manage tail volatility in the implementation of the UAAL “layered” amortization component of the CCCERA funding policy.
 - To reduce volatility in the employer contribution rates expected to occur beginning with the December 31, 2029 valuation
- Use a 6-year remaining amortization period for amortization layers established in the 2011 through 2018 valuations
 - Effective with the December 31, 2023 valuation
 - Note we adjust periods, not combine layers, to keep UAAL history
 - Does not change the ongoing CCCERA funding policy
- No impact on the December 31, 2022 valuation results that have already been adopted by the Board

Questions?