



Notice of Public Meeting

The Board of Retirement of the San Mateo County Employees' Retirement Association will meet on **Tuesday, September 29, 2020, at 10:00 A.M.**

In accordance with the Governor's Executive Order N-29-20 (3) the Members of the Board will be participating via Zoom video conference and teleconference. Pursuant to Government Code §54954.3, members of the public, to the extent required by law, will have the opportunity to directly address the Board concerning matters within the jurisdiction of the Board. The public can participate and provide comment using the instructions below:

To Join the Meeting

- To join the meeting via video conference, click here: <https://zoom.us/j/92664493480>
- To join the meeting via telephone, dial: (669) 900-9128, and enter Meeting ID: 926 6449 3480

Public Comment During the Meeting

Persons wishing to address the Board should follow the steps below:

- If joining via video conference, please use the "raise your hand" feature in Zoom during the Oral Communications from the Public period.
- If joining via teleconference dial in, please dial *9 to "raise your hand" during the Oral Communications from the Public period.

You will be called on at the appropriate time. At the beginning of your comment, please state your name.

Public Comment Prior to the Meeting

Persons who wish to address the Board may submit written comments via email to samcera@samcera.org at least 30 minutes before the start of the Board meeting. Please include your name, agenda item, and your comment. The Board will have the email read into the record and attached to the minutes.

For help joining a Zoom meeting, see: <https://support.zoom.us/hc/enus/articles/201362193>

PUBLIC SESSION – The Board will meet in Public Session at 10:00 a.m.

- 1. Call to Order, Roll Call and Miscellaneous Business**
- 2. Oral Communications**
 - 2.1 Oral Communications from the Board
 - 2.2 Oral Communications from the Public
- 3. Approval of the Minutes**
 - 3.1 Approval of Board Meeting Minutes from August 25, 2020

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4. Approval of the Consent Agenda*

- 4.1 Disability Retirements (none)
- 4.2 Survivor Death Benefits
- 4.3 Service Retirements
- 4.4 Continuances
- 4.5 Deferred Retirements
- 4.6 Member Account Refunds
- 4.7 Member Account Rollovers
- 4.8 Member Account Redeposits
- 4.9 Acceptance of Trustees' Reports of Educational Activities
- 4.10 Approval of Questions for Annual Review of Brown Armstrong

5. Benefit & Actuarial Services

- 5.1 Consideration of Agenda Items, if any, Removed from the Consent Agenda
- 5.2 Presentation of the June 30, 2020 Annual Actuarial Valuation by Milliman, Inc
- 5.3 Presentation of the June 30, 2020 Annual Actuarial Valuation Audit by Cheiron, Inc
- 5.4 Approval of Resolution Accepting the Fiscal Year 2021-2022 Employer and Member Contribution Rates and Recommendations

6. Investment Services

- 6.1 Report on Preliminary Monthly Portfolio Performance Report for the Period Ended August 31, 2020
- 6.2 Report on Fixed Income Manager Annual Reviews
- 6.3 Report on Opportunistic Credit Manager Annual Reviews
- 6.4 Education Presentation on Cash Flow Analysis
- 6.5 Approval of Proposed Alternative Investments (to be heard in Closed Session, Confidential Under Gov. Code §54956.81 and §6254.26, see item C2)

7. Board & Management Support

- 7.1 Approval of Resolution Authorizing the Chief Executive Officer to Execute Documentation for Investments as Required
- 7.2 Approval of Resolution Amending Policy for Procurement and Contracting Services for Certain Goods and Services

8. Management Reports

- 8.1 Chief Executive Officer's Report
- 8.2 Assistant Executive Officer's Report
- 8.3 Chief Investment Officer's Report
- 8.4 Chief Legal Counsel's Report

CLOSED SESSION – The Board may meet in closed session prior to adjournment

- C1 Consideration of Disability Items, if any, removed from the Consent Agenda
- C2 Approval of Proposed Alternative Investment (to be heard in Closed Session, Confidential Under Gov. Code § 54956.81 and 6254.26, see item 6.5)
- C3 Conference with Legal Counsel – Anticipated Litigation
Significant Exposure to litigation pursuant to paragraph (2) of subdivision (d) of Section 54956.9. (One case.)

9. Report on Actions Taken in Closed Session

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10. Adjournment in Memory of the Following Deceased Members:

Lambert, Thomas	March 16, 2020	General Services
Simmons, Kevin	August 9, 2020	Sheriff's
Leed, Donald	August 13, 2020	Sheriff's
Wilson, Brent	August 14, 2020	DPW
Burns, Mary	August 22, 2020	Parks
Monto, Alexander	August 29, 2020	Health Dept.
Beber Vanzo, Barbara	August 31, 2020	Mental Health
Gerhardt, Jack	September 3, 2020	Sheriff's
Lesui, Clark	September 4, 2020	H.S.A.



Scott Hood, Chief Executive Officer

Posted: September 23, 2020

(* ALL ITEMS ON THE CONSENT AGENDA ARE APPROVED BY ONE ROLL CALL MOTION UNLESS A REQUEST IS MADE BY A BOARD MEMBER THAT AN ITEM BE WITHDRAWN OR TRANSFERRED TO THE REGULAR AGENDA. ANY ITEM ON THE REGULAR AGENDA MAY BE TRANSFERRED TO THE CONSENT AGENDA. ANY 4.1 ITEMS REMOVED FROM THE CONSENT AGENDA WILL BE TAKEN UP UNDER CLOSED SESSION; ALL OTHER ITEMS REMOVED FROM THE CONSENT AGENDA WILL BE TAKEN UP UNDER ITEM 5.1.)

THE BOARD NORMALLY MEETS AT 100 MARINE PARKWAY, SUITE 160, WHICH IS LOCATED ON THE SE CORNER OF TWIN DOLPHIN & MARINE PARKWAY IN REDWOOD CITY. Detailed directions are available on the "Contact Us" page of the website www.samcera.org. Free Parking is available in all lots in the vicinity of the building. A copy of the Board of Retirement's open session agenda packet is available for review at the SamCERA offices and on our website unless the writings are privileged or otherwise exempt from disclosure under the provisions of the California Public Records Act. Office hours are Monday through Thursday 7 a.m. – 6 p.m.

IN COMPLIANCE WITH THE CALIFORNIA GOVERNMENT CODE AND THE AMERICANS WITH DISABILITIES ACT: SamCERA's facilities and board and committee meetings are accessible to individuals with disabilities. Contact SamCERA at (650) 599-1234 at least three business days prior to the meeting if (1) you need special assistance or a disability-related modification or accommodation, including auxiliary aids or services, in order to participate in this meeting; or (2) you have a disability and wish to receive the agenda, meeting notice, agenda packet or other writings that may be distributed at the meeting in an alternative format. Notification in advance of the meeting will enable SamCERA to make reasonable arrangements to ensure full accessibility to this meeting and the materials related to it.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
AUGUST 25, 2020 – REGULAR BOARD MEETING MINUTES

2008.1 Call to Order, Roll Call and Miscellaneous Business

Call to Order: Mr. David, Chair, called the Regular Meeting of the Board of Retirement to order at 10:00 a.m. via Zoom.

Roll Call:

Present: Sandie Arnott, Mark Battey, Al David, Paul Hackleman, Kurt Hoefer, Katherine O'Malley, and Robert Raw.

Absent: Ben Bowler and Eric Tashman.

Alternates present: Susan Lee and Alma Salas.

Staff: Brenda Carlson, Michael Coultrip, Lili Dames, Scott Hood, Elizabeth LeNguyen, JulieAnne Nagal, Doris Ng, Gladys Smith and Anne Trujillo.

Consultants and speakers: Joe Abdou, Marc Gesell, Margaret Jadallah, John Nicolini and John Wasnock (Verus).

2008.1.1 Announcement of Appointment of Board Committees: Mr. David announced the following appointments to Board Committees for FY 2020-2021:

Standing Committees:

Audit Committee: Kurt Hoefer, Robert Raw and Alma Salas, Chair.

Investment Committee: Ben Bowler, Susan Lee, Katherine O'Malley and Mark Battey, Chair.

Ad Hoc Committee:

CEO Evaluation Committee: Kurt Hoefer, Katherine O'Malley and Sandie Arnott, Chair.

2008.2.1 Oral Communications from the Board: None.

2008.2.2 Oral Communications from the Public: Mr. David asked if there was any public comment from those individuals participating on the telephone or via Zoom. There were no public comments and no written comments received ahead of the meeting.

2008.3.1 Approval of Regular Board Meeting Minutes from July 28, 2020: Mr. David asked if there were any changes or corrections, or objections, to the meeting minutes from the Board meeting held on July 28, 2020.

Action: Ms. Arnott moved to approve the minutes from the Board meeting on July 28, 2020. The motion was seconded by Mr. Hackleman and carried with a vote of 7-0, with trustees Arnott, Battey, David, Hackleman, Hoefer, O'Malley and Raw all in favor; none opposed.

2008.4.0 Approval of the Consent Agenda: Mr. David asked if there were any items to be removed for discussion from the Consent Agenda. No items were removed.

Action: Ms. Arnott moved to approve the items on the Consent Agenda, and the motion was seconded by Mr. Hackleman. The motion carried with a vote of 7-0, with trustees Arnott, Battey, David, Hackleman, Hoefer, O'Malley and Raw all in favor; none opposed.

2008.4.1 Disability Retirements:

- a) The Board found that Rosa Marcello (1) is permanently incapacitated from the performance of her usual and customary duties as a Child Support Supervisor, (2) found that her disability was not the result of an injury/illness arising out of and in the course of her employment, (3) denied her application for a service-connected disability and (4) granted her a non-service-connected disability retirement.

2008.4.2 **Survivor Death Benefits:** None.

2008.4.3 **Service Retirements:**

Name	Effective Retirement Date	Department
Buchanan, Susan	June 13, 2020	Superior Court
Buscher, Karin	June 27, 2020	San Mateo County Health
Compton, Louise	June 20, 2020	Deferred - Behavioral Health
Gantert, Lance	June 14, 2020	San Mateo County Health
Gouig, Christine	June 23, 2020	Deferred - Dept of Housing
Meola, Kathryn	June 6, 2020	Deferred – County Counsel*
Mercader, Adoracion	July 1, 2020	Aging & Adult Services
Rivers, Dorie	June 20, 2020	Def'd - San Mateo County Health
Rocha, Edmundo	June 11, 2020	Deferred - Sheriff's Office
Tealer, Dennis	June 26, 2020	Sheriff's Office
Toussaint, Annette	June 27, 2020	Deferred - Superior Court

*corrected

2008.4.4 **Continuances:**

Survivor's Name	Beneficiary of:
Skalisky, Lloyd	Skalisky, Beverly

2008.4.5 **Deferred Retirements:**

The Board ratified the actions as listed below for the following members regarding deferred retirements:

Name	Retirement Plan Type
Arellano, Jessica	P4, Vested - Auto Defer - Code 31700
Bonilla-Bolanos, Jannet	G7, Non-vested - Reciprocity
Duvall, Stephen	S4, Vested
Eusebio, Mary Grace	G5, Vested - Reciprocity
Goethals, Joseph	G5, Vested
Herzberg, Samuel	G2, Vested
Hoang, Jennifer	G7, Non-vested - Reciprocity
Holt, Rachel	G4, Vested - Reciprocity
Lui, Chun	G7, Non-vested - Reciprocity
Maddux, Stormy	G4, Vested - Reciprocity
Shimmers, Lexington	G5, Vested - Auto Defer - Code 31700
Stiving, Nicole	G7, Vested
Swigart, Michael	G7, Non-vested - Reciprocity
Tramble, Jermond	S7, Non-vested - Reciprocity
Vargas, Luis	G5, Vested - Reciprocity
Westrick, Kimberly	G7, Non-vested - Reciprocity

2008.4.6 **Member Account Refunds:**

The Board ratified the actions as listed below for the following members regarding refunds:

Name	Retirement Plan Type
Hartman, Maureen (FBO: Fernandez, Elizabeth)	G1, Vested
Hartman, Maureen (FBO: Hartman, Kristine)	G1, Vested
Hartman, Maureen (FBO: Quadt, Alyce)	G1, Vested
Kantamani, Shashi	G7, Non-vested
Ogunnupe, Ayesha	G7, Non-vested

2008.4.7 **Member Account Rollovers:**

The Board ratified the actions as listed below for the following members regarding rollovers:

Name	Retirement Plan Type
Bonhagen, Anna	G7, Non-vested
Moran, Sonia	G7, Non-vested

2008.4.8 **Member Account Redeposits:** None.

2008.4.9 **Acceptance of Trustees' Reports of Educational Activities:** None.

2008.4.10 **Approval of Resolutions that Define Comp Earnable and Pensionable Comp:** The Board approved an amendment to the (1) Resolution defining Compensation Earnable, pursuant to Government Code §31461 for members who are not subject to Government Code §7522.34 and (2) the Resolution defining Pensionable Compensation for members who are subject to Government Code §7522.34 to include Mandatory Time Off Unpaid (042) as a non-pensionable earning code.

2008.4.11 **Approval of Resolution Amending Regulations of Board of Retirement:** The Board approved the resolution amending Regulation Sections 8.4 (E)(5)(b), 8.4(F)(1)(a), 8.4(G)(4), and 8.4 (H)(4) regarding Required Minimum Distributions and Sections 8.10 (A) and 8.10 (B) Regarding Normal Retirement Ages in Article VIII Internal Revenue Compliance.

2008.4.12 **Acceptance of Semi-Annual Compliance Certification Statements for Period Ended June 30, 2020:** The Board accepted the semi-annual Compliance Certification Statement for SamCERA's non-alternative investment managers, as of June 30, 2020.

2008.4.13 **Report on Preliminary Financial Statements for the Fiscal Year Ended June 30, 2020:** The Board accepted the preliminary financial statements for the fiscal year ended June 30, 2020.

2008.4.14 **Report on Budget-to-Actual for the Fiscal Year Ended June 30, 2020:** The Board accepted the preliminary report on budget-to-actual for the fiscal year ended June 30, 2020.

2008.5.1 **Consideration of Agenda Items, if any, Removed from the Consent Agenda:** None.

2008.6.1 **Report on Preliminary Monthly Portfolio Performance Report for the Period Ended July 31, 2020:** Mr. Coultrip reported that SamCERA's net preliminary return for July was 3.7% bringing the preliminary trailing twelve month return ending July 2020 to 2.7% net. This item was informational and for discussion only, no action was taken.

- 2008.6.2 **Report on Quarterly Investment Performance Report for the Period Ended June 30, 2020:** Ms. Jadallah discussed the quarterly performance report for the period ended June 30, 2020 and answered questions from the Board. This item was informational and for discussion only, no action was taken.
- 2008.6.3 **Report on Fixed Income Manager Annual Reviews:** Ms. Ng reviewed the meeting notes of the annual review of SamCERA's opportunistic credit bond managers, PIMCO and Beach Point held on August 6th via teleconference. There were no significant concerns identified during the portfolio reviews. This item was informational and for discussion only, no action was taken.
- 2008.6.4 **Report on SamCERA's Securities Lending Program:** Ms. Dames reported on SamCERA's securities lending program with the Board. She reported the program earned \$35,079, which is a 47% increase from last fiscal year's earnings and that the majority of the earnings are mostly attributable to a few specific securities. This item was informational and for discussion only, no action was taken.
- 2008.6.5 **Report on SamCERA's Risk Dashboard as of June 30, 2020:** Mr. Gesell presented SamCERA's risk dashboard and answered questions from the Board. This item was informational and for discussion only, no action was taken.
- 2008.6.6 **Approved of Proposed Alternative Investment (to be heard in Closed Session):** The Board adjourned into Closed Session at 10:53 a.m. to hear item 6.6 then reconvened in Open Session at 11:16 a.m. See Closed Session report under C2.
- 2008.6.7 **Report on Absolute Return Search:** Ms. Jadallah provided the Board with an update on the absolute return search. She and Mr. Coultrip also commented that they plan to have a recommendation by the September meeting. This item was informational and for discussion only, no action was taken.

This item was taken out of order and heard after Agenda Item 6.5.

- 2008.7.1 **Approval to Reschedule the Regular September Meeting of the Board of Retirement:** Mr. Hood discussed staff's recommendation to formally change the date of the September Board meeting from September 22, 2020 to September 29, 2020 to provide staff and consultants additional time to complete the Actual Valuation Report.

Action: Mr. Hackleman motioned to approve the change to date of the September Board meeting from September 22, 2020 to September 29, 2020. The motion was seconded by Mr. Battey and carried by a vote of 7-0, with trustees Arnott, Battey, David, Hackleman, Hoefler, O'Malley and Raw all in favor; none opposed.

- 2008.7.2 **Designation of and Directions for Voting by SamCERA Delegate for the SACRS Board of Directors (BOD) Election:** Mr. Hood informed the Board that due to the uncertainty of the SACRS Fall Conference occurring, SACRS plans to conduct the Board of Directors election remotely and that submission of the Board's ballot will be an administrative task. Mr. Hood discussed staff's recommendation to designate the CEO as the delegate to transmit the Board's vote and accept the SACRS Nominating Committee's recommended slate of officers for FY 20-21.

Action: Mr. Hoefler motioned to approve the CEO be designated as SamCERA's voting delegate and accept the SACRS Nominating Committee's recommended slate of officers for FY 2020-21. The motion was seconded by Ms. Arnott and carried by a vote of 7-0, with trustees Arnott, Battey, David, Hackleman, Hoefler, O'Malley and Raw all in favor; none opposed.

2008.8.1 **Chief Executive Officer's Report:** Mr. Hood reported that staff is continuing to work remotely due to COVID-19. He also reported that he completed the online SACRS UC Berkeley course. Mr. Hood mentioned that staff plans to incorporate topics initially scheduled for the spring 2020 Board/Staff retreat into the remaining Board meetings this year. He noted that next month's Board meeting will include the Actual Valuation and Audit report, employee contribution rates and an update to the policy authorizing the CEO to execute investment documents and delegating authority for certain alternative investments. Mr. Hood reported that the County is updating their authorization for department heads to enter into contracts to up to \$200,000 and that staff will recommend this authority for the CEO in the near future.

2008.8.2 **Assistant Executive Officer's Report:** Ms. Smith reported to the Board that she will be sending out the annual actuary survey for Milliman, Inc. via SurveyMonkey. Ms. Trujillo informed Board members about upcoming educational events.

2008.8.3 **Chief Investment Officer's Report:** Mr. Coultrip reported staff will be holding annual manager reviews for opportunistic credit via Zoom on Thursday, September 3rd with White Oak at 8:00 a.m., TCP/Blackrock at 9:30 a.m. and Brigade Capital and 11:00 a.m.

The meeting was adjourned for break at 11:26 a.m. and reconvened at 11:31 a.m.

2008.8.4 **Chief Legal Counsel's Report:** Ms. Carlson presented an overview of the California Supreme Court decision in *Alameda County Deputy Sheriff's Assoc. et al., v. Alameda County Employees' Retirement Assn., et al.* and answered questions from the Board.

C1 **Consideration of Disability Items, if any, removed from the Consent Agenda:** None.

C2 **Approval of Proposed Alternative Investment (to be heard in Closed Session, Confidential Under Gov. Code §54956.81 and §6254.26):** Ms. Carlson reported that the Board approved a motion to invest \$30 million in the Stockbridge Value Fund IV as part of SamCERA's real estate portfolio. The motion passed a vote of 7-0, with trustees Arnott, Battey, David, Hackleman, Hofer, O'Malley and Raw all in favor; none opposed. No other reportable action was taken.

2008.10 **Adjournment:** Mr. David adjourned the meeting at 12:07 p.m. in memory of the deceased members listed below.

Giusto, Gerald	July 8, 2020	SMMC
Sternberg, Irvin	July 16, 2020	Probation
Tan, Lourdes	July 20, 2020	Children's Protective Services
Ekhardt, Jeffrey	July 23, 2020	Sheriff's
Daw, Margaret	July 28, 2020	Social Services
Bottimore, Karlene	July 29, 2020	Library
McHenry, Caroline	August 2, 2020	Human Resources
Allee, Andrew	August 3, 2020	Child Support Services
Brinkman, John	August 6, 2020	Probation
Lenci, Alfredina	August 7, 2020	Crystal Springs Rehab Center
Collado, Dora	August 7, 2020	Human Services
Bergman, William	August 8, 2020	Controller's
Goad, Roger	August 9, 2020	Sheriff's

Al David
Board Chair

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Items 4.1- 4.9

TO: Board of Retirement

FROM: Elizabeth LeNguyen, Retirement Benefits Manager



SUBJECT: Approval of Consent Agenda Items 4.1 – 4.9

4.1 Disability Retirements

None.

4.2 Survivor Death Benefits

None.

4.3 Service Retirements

The Board ratifies the service retirement for the individuals listed below as follows:

Name	Effective Retirement Date	Department
Alvarez-Javonillo, Veronica	August 1, 2020	San Mateo County Health
Chun, Denise	July 13, 2020	Def'd - San Mateo County Health
Gutschick, Pernille	August 1, 2020	Mental Health
Haug, Donald	July 7, 2020	Deferred – Public Works
Leonor, Joseph	July 16, 2020	Probation
Reyes, Cydney	July 22, 2020	Mental Health
Santillan, Margarita	July 18, 2020	San Mateo County Health
Zilahi, Patrizia	July 18, 2020	Behavioral Health & Recovery Srvcs

4.4 Continuances

The Board ratifies the granting of a continuance to the following individuals:

Survivor's Name	Beneficiary of:
Hernandez, Guadalupe	Hernandez, Frank
Pagmanua, Cynthia	Pagmanua, Roberto
Seager, Donald	Seager, Linda
Tan, Jauw	Tan, Lourdes

4.5 Deferred Retirements

The Board ratifies the deferred retirements as listed below for the following individuals:

Name	Retirement Plan Type
Abdulmajeed, Zaid Raad	G7, Vested - Reciprocity
Alejandrino, Enrique	G4, Non-vested - Reciprocity
Barberini, Jacqueline	G2, Vested - Reciprocity
Cochrane, Jacquelyn	G7, Non-vested - Reciprocity
Doan, David	G4, Vested - Reciprocity
Elsley, Katherine	G4, Vested
Jacobson, Bradley	G4, Vested
Johnston, Maeve	G7, Vested - Auto Defer - Code 31700
Lopez, Rubi	G4, Vested - Auto Defer - Code 31700
Peters, Heather	G7, Non-vested - Reciprocity
Tauscher, Emily	G4, Vested - Reciprocity

4.6 Member Account Refunds

The Board ratifies the refunds as listed below for the following individuals:

Name	Retirement Plan Type
Cook, Tarah	G7, Non-vested
Diploudis, Maria	G7, Non-vested
Gomez, Joey	G7, Non-vested
Hu, Peiyu	G7, Non-vested
Lambright, Tiffany	G7, Non-vested
Murray, Julia	G7, Non-vested
Sentman, Bradley	G7, Non-vested

4.7 Member Account Rollovers

The Board ratifies the rollovers as listed below for the following individuals:

Name	Retirement Plan Type
Diploudis, Maria	G7, Non-vested
Grasty, Bobbette	S4, Vested

4.8 Member Account Redeposits

Name	Retirement Plan Type
Biggs, Arter	G7
Castaneda, Rogelio	G4

4.9 Acceptance of Trustees' Reports of Educational Activities Through Outside Provider

None.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 4.10

TO: Board of Retirement

FROM: Gladys Smith, Assistant Executive Officer



SUBJECT: Approval of Questions for Annual Review of Brown Armstrong
Accountancy

Recommendation

Approve the evaluation questions in the "Questions for Annual Auditor Consultant Evaluation."

Discussion

The questions in the attached document will be submitted to SamCERA's auditor, Brown Armstrong, prior to the annual review, which will be scheduled for the December 8, 2020, Board meeting. In addition, there will be a survey of trustees and staff regarding Brown Armstrong's performance.

Staff will provide Brown Armstrong's responses to the questionnaire as well as the survey results at the December meeting.

Attachment

Questions for Annual Actuarial Consultant Evaluation

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

Questions for Annual Auditor Consultant Evaluation

Please provide information about the following events and activities and whether they occurred during Fiscal Year 2019-20.

Organizational Update

- 1) Provide an update on your firm's organization, with particular emphasis on changes to your management structure over the past twelve months. All significant changes should be accompanied by an explanation. An updated organizational chart should accompany this response.
- 2) Update all significant personnel changes or expected changes to the "SamCERA Team."
- 3) Has your firm or any of its employees been involved in regulatory or litigation actions related to your business in the past twelve months?
- 4) Has a peer review been performed on any of your firm's audit products? If yes, discuss the review and the findings. Any material findings or recommendations must be accompanied by an explanation.
- 5) Are any of your operations outsourced? If the answer is yes, provide details regarding the firm(s) with which your firm has contracted.
- 6) Please describe how your firm monitors and manages cyber security risks as they relate to confidential SamCERA data/information. Has your firm experienced any problems with cyber security in the past 18 months? What is your cyber security breach policy? What procedures do you have in place for a cyber security breach?

Client Update

- 7) What is your firm's philosophy and current policy regarding new business?
- 8) Please list all clients gained or lost in the past eighteen months.

Outlook Beyond Fiscal Year 2019-20

- 9) What issues are other clients concerned with regarding products, services, education and governance that your staff has not addressed with SamCERA?

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

- 10) Should SamCERA be made aware of significant changes that your clients are making?
- 11) Relative to your expertise, what trends are occurring in the retirement industry that SamCERA should be tracking?

Conclusion

- 12) How can SamCERA better assist you in accomplishing the goals it has established for your firm?
- 13) How can we better utilize your firm's capabilities?
- 14) Is there any information that would be timely pursuant to SamCERA's annual review?
- 15) What audit related changes should SamCERA consider that were not mentioned in your audit or audit presentation?

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 5.2

TO: Board of Retirement

FROM: Scott Hood, Chief Executive Officer 

SUBJECT: Presentation of the June 30, 2020, Actuarial Valuation Report by Milliman, Inc.

Recommendation

Milliman, Inc. will discuss the results of its Actuarial Valuation Report. This is for information only.

Background

Nick Collier, of Milliman, Inc., will present the results and recommendations of its Actuarial Valuation Report as of June 30, 2020. This year's actuarial valuation process resulted in:

- An increase in the Employer Statutory Contribution rate from 37.86% (effective July 1, 2020) to 38.91% (effective July 1, 2021).
- An increase in the member contribution rates for all plans except Plan 7 (effective July 1, 2021).
- An increase in the funded ratio of the system from 85.8% as of June 30, 2019, to 86.4% as of June 30, 2020.

Attachment

San Mateo County Employees' Retirement Association June 30th, 2020 Actuarial Valuation



San Mateo County Employees' Retirement Association

June 30, 2020 Actuarial Valuation

Prepared by:

Nick Collier, ASA, EA, MAAA
Consulting Actuary

Craig Glyde, ASA, EA, MAAA
Consulting Actuary

Milliman, Inc.
1301 Fifth Avenue, Suite 3800
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milliman.com

September 21, 2020

Board of Retirement
San Mateo County Employees' Retirement Association
100 Marine Parkway, Suite 125
Redwood City, CA 94065-5208

Dear Members of the Board:

As requested, we have completed an actuarial valuation for the San Mateo County Employees' Retirement Association (SamCERA). The purpose of the valuation is to recommend the employer and member contribution rates for the fiscal year beginning July 1, 2021.

Actuarial Certification – Per SamCERA Consulting Contract

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices, including Actuarial Standards of Practice (ASOPs) Nos. 4, 27, and 35. In particular, it reflects the actuary's responsibility under Section 5.8 ("Actuary's Responsibility) of ASOP No. 4 (1993 Reformatted Edition) for assessing the implications of overall results, in terms of short-range and long-range benefit security and expected cost progression. Note that this section no longer exists in the current ASOP No. 4; however, Milliman will continue to assess the results pursuant to the prior section.

To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our best professional judgment, the assumptions and methodologies as adopted by the Board of Retirement, individually and in combination, are reasonably related to the experience of and the expectations for SamCERA, and will not, in and of themselves, expose SamCERA to "unsound financial risk." In this regard, we consider "unsound financial risk" to mean the following:

- A substantial likelihood that future required contribution rates as a percentage of payroll will be dramatically higher than the rates shown in this report, given the uncertainties of actuarial projections and assuming the full payment of all recommended contributions; or
- A substantial likelihood that SamCERA's assets will be insufficient to pay benefit payments when due, given the uncertainties of actuarial projections and assuming the full payment of all recommended contributions.

In preparing this report, we have complied with all quality assurance procedures detailed on page 26 of our October 22, 2018 proposal titled "Actuarial Consulting Services Proposal."

Actuarial Certification – Milliman

The major findings of the valuation are contained in this report. This report reflects the benefit provisions as of June 30, 2020 and member contribution rates effective July 1, 2021. In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by SamCERA staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for SamCERA have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of SamCERA and reasonable expectations) and which, in combination, offer a reasonable estimate of anticipated experience affecting SamCERA.

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 (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board of Retirement has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix A.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for SamCERA. The calculations in this report have been made on a basis consistent with our understanding of SamCERA's current funding requirements. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of SamCERA. SamCERA may place the final version of this report on its website. Milliman's "work" to create this report, to the extent that Milliman's work is not subject to disclosure under applicable public records laws, may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions:

- (a) SamCERA may provide a copy of Milliman's work, in its entirety, to its professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit SamCERA.
- (b) SamCERA may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are retirement actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsors. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

We would like to express our appreciation to Scott Hood, Chief Executive Officer of SamCERA, and to members of his staff, who gave substantial assistance in supplying the data on which this report is based.

We respectfully submit the following report and we look forward to discussing it with you.

Sincerely,



Nick Collier, ASA, EA, MAAA
Consulting Actuary
NC/CG/nlo



Craig Glyde, ASA, EA, MAAA
Consulting Actuary

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1. Summary of Findings

This report presents the results of the June 30, 2020 actuarial valuation, including the Employer Statutory Contribution Rate calculated for the fiscal year beginning July 1, 2021 and the Funded Ratio of SamCERA. The following table summarizes these key results from the current and prior valuations.

	June 30, 2020	June 30, 2019
Employer Statutory Contribution Rate (all employers)	38.91%	37.86%
County Statutory Contribution Rate	39.14%	38.06%
Funded Ratio	86.4%	85.8%

Key findings and results from the valuation are summarized below.

Funding

The Funded Ratio increased from 85.8% to 86.4%, primarily due to employer contributions to amortize the Unfunded Actuarial Accrued Liability (UAAL). On a market value basis, the Funded Ratio decreased from 86.5% to 82.6%, primarily due to a 0.9% net investment return over the period, compared to the assumed 6.5%.

The “Analysis of Change” section that follows later in Section 1 provides an analysis of the sources of change in the Funded Ratio since last year.

The assets used in the calculation of the Funded Ratio include the value of the County Supplementary Contribution Account (CSCA) and the District Supplementary Contribution Account (DSCA). Throughout this report we use the term SCA when referring to both of these accounts.

Neither the County nor the District contributed to the SCAs over the year ended June 30, 2020. In total, the CSCA has an actuarial value of \$184.7 million and the DSCA has an actuarial value of \$1.5 million as of June 30, 2020. Without the CSCA and DSCA the Funded Ratio would be 83.2% as of June 30, 2020.

Investment Returns

SamCERA’s investment return on the market value of assets for the fiscal year 2019-2020 of 0.9% was less than the assumed rate of 6.5%. Note that under the asset smoothing method the strong return for the first six months of the fiscal year approximately offset the poor return for the second half of the fiscal year. Combined with the recognition of deferred investment losses from prior periods, the net result was a return on Valuation Assets of 6.2%, which is less than the assumed rate of 6.5%. This actuarial loss on Valuation Assets caused an increase in the SCR of 0.26% of pay.

Employer Statutory Contribution Rate

The Statutory Contribution Rate (SCR) is comprised of the Employer Normal Cost Rate and a separate component to amortize the UAAL. The SCR increased from 37.86% of pay (calculated in the 2019 valuation) to 38.91%, an increase of 1.05% of pay. The SCR is a weighted average of the statutory contribution rates for each individual SamCERA plan. The actual percent of payroll to be contributed by each employer varies by plan, as shown in Section 6 of this report.

The “Analysis of Change” section that follows later in Section 1 provides an analysis of the sources of change in the SCR since last year. In addition, the section “Projected Future Employer Contribution Rates” below shows a 10-year projection of the statutory employer contribution rate.

The CSCA provides an offset of 3.54% of pay to the County’s SCR (which is the same offset as the prior valuation), resulting in a County-only SCR of 39.14% of pay. Without the recognition of the CSCA, the County SCR would be 42.68% of pay.

The DSCA provides an offset of 25.83% of pay (compared to 25.21% of pay in the prior valuation) for the San Mateo County Mosquito and Vector Control District (SMCM&VCD). The DSCA offset is not permitted to be larger than the UAAL contribution rate for the SMCM&VCD.

Economic and Demographic Assumptions

The assumptions developed as a result of the 2020 Investigation of Experience study, described in our report dated July 28, 2020, were adopted by the Board of Retirement for use in this valuation. These changes include increasing the rates of assumed merit salary increases for Safety and Probation members, updating mortality tables to the public plan specific tables published in 2019 by the Society of Actuaries Retirement Plans Experience Committee (RPEC), and changes to the assumed rates at which active members decrement from active employment.

The net effect of these changes was an increase in the UAAL of approximately \$11.6 million effective June 30, 2020, a decrease in the Funded Ratio of 0.2%, and an increase in the employer contribution rate of 0.11% of payroll.

Member contribution rates for all plans (except the non-contributory Plan 3) changed as a result of the new assumptions, as described below.

Member Contribution Rates

New member contribution rates are recommended for all plans effective July 1, 2021 based on the new assumptions adopted with the 2020 Investigation of Experience study. Member contribution rates for all plans, except Plan 3 and Plan 7, vary based on a member's entry age to SamCERA and the underlying actuarial assumptions. Due to the changes in the merit salary increase and mortality assumptions, we have calculated new member contribution rates for these plans effective July 1, 2021. Plan 7 member contribution rates are required to be equal to 50% of the Gross Normal Cost Rate of the respective plans.

Exhibit 1b includes a summary of recommended member contribution rates. In general, there are small decreases for Plan 7 member rates and small increases for other plans. Member contribution rates are discussed in Section 5 of this report, and a complete list of all member contribution rates is shown in Appendix D.

Summary of Contribution Rates

The following exhibits summarize our recommendations to the Board.

Exhibit 1a
Summary of Recommended Minimum Statutory Contribution Rates

Recommendation #1: Adopt new Statutory Contribution Rates for fiscal year beginning July 1, 2021

	<u>Fiscal Year Beginning</u>		<u>Increase / (Decrease)</u>
	<u>July 1, 2021</u>	<u>July 1, 2020</u>	
Gross Normal Cost	23.11%	23.73%	(0.62)%
Member Contributions	(12.21)%	(12.46)%	0.25%
Employer Normal Cost	10.90%	11.27%	(0.37)%
UAAL Amortization	28.01%	26.59%	1.42%
Total Employer Rate	38.91%	37.86%	1.05%
County Contribution Rate	39.14%	38.06%	1.08%
Courts Contribution Rate	35.85%	35.22%	0.63%
SMCM&VCD Contribution Rate	12.76%	12.58%	0.18%

Notes:

1. Detailed contribution rates by plan are shown in Section 6.
2. The Total Employer Statutory Contribution Rate of 38.91% is the aggregate rate for all employers.

Exhibit 1b
Summary of Recommended Member Contribution Rates

Recommendation #2: Adopt new member contribution rates for fiscal year beginning July 1, 2021

	Entry Age	Recommended Rates			Total as a % of Pay	Current	Ratio (New/Curr)
		Basic	50% COLA Sharing	Cost Sharing		Total as a % of Pay	
General Members (not including SMCM&VCD)							
Plan 1	25	7.22%	2.53%	3.00%	12.75%	13.41%	95.1%
	35	8.55%	2.99%	3.00%	14.54%	15.32%	94.9%
	45	10.16%	3.56%	3.00%	16.72%	17.65%	94.7%
Plan 2	25	7.22%	2.49%	3.00%	12.71%	12.57%	101.1%
	35	8.55%	2.95%	3.00%	14.50%	14.33%	101.2%
	45	10.16%	3.51%	3.00%	16.67%	16.48%	101.1%
Plan 4	25	6.98%	1.85%	3.00%	11.83%	11.73%	100.9%
	35	8.26%	2.18%	3.00%	13.44%	13.33%	100.8%
	45	9.77%	2.58%	3.00%	15.35%	15.22%	100.9%
Plan 5	25	6.07%	1.50%	0.00%	7.57%	7.53%	100.5%
	35	7.18%	1.78%	0.00%	8.96%	8.91%	100.5%
	45	8.52%	2.11%	0.00%	10.63%	10.57%	100.6%
Plan 7	All	7.04%	1.71%	0.00%	8.75%	9.11%	96.0%
SMCM&VCD Members							
Plan 1	25	7.22%	0.00%	0.00%	7.22%	7.14%	101.1%
	35	8.55%	0.00%	0.00%	8.55%	8.45%	101.2%
	45	10.16%	0.00%	0.00%	10.16%	10.05%	101.1%
Plan 2	25	7.22%	0.00%	0.00%	7.22%	7.14%	101.1%
	35	8.55%	0.00%	0.00%	8.55%	8.45%	101.2%
	45	10.16%	0.00%	0.00%	10.16%	10.05%	101.1%
Plan 4	25	6.98%	0.00%	0.00%	6.98%	6.90%	101.2%
	35	8.26%	0.00%	0.00%	8.26%	8.17%	101.1%
	45	9.77%	0.00%	0.00%	9.77%	9.66%	101.1%
Plan 7	All	7.75%	1.92%	0.00%	9.67%	9.24%	104.7%

Notes:

1. All General members contribute 50% of the cost of COLA benefits except for all members of SMCM&VCD.
2. Plan 7 COLA share represents one-half of the cost of the COLA.
3. See Appendix B of this report for a full description of members COLA share. See Appendix D of this report for a full schedule of rates.

Exhibit 1b
Summary of Recommended Member Contribution Rates (continued)

Recommendation #2: Adopt new member contribution rates for fiscal year beginning July 1, 2021

	Entry Age	Recommended Rates			Total as a % of Pay	Current	Ratio (New/Curr)
		Basic	50% COLA Sharing	Cost Sharing		Total as a % of Pay	
Safety Members							
Plan 1	25	10.09%	4.84%	5.00%	19.93%	19.54%	102.0%
	35	11.67%	5.59%	5.00%	22.26%	21.92%	101.6%
	45	13.51%	6.48%	5.00%	24.99%	24.60%	101.6%
Plan 2	25	10.09%	5.22%	5.00%	20.31%	19.88%	102.2%
	35	11.67%	6.04%	5.00%	22.71%	22.32%	101.8%
	45	13.51%	6.99%	5.00%	25.50%	25.06%	101.8%
Plan 4	25	9.72%	3.80%	5.00%	18.52%	18.17%	102.0%
	35	11.24%	4.40%	5.00%	20.64%	20.32%	101.6%
	45	12.79%	5.01%	5.00%	22.80%	22.46%	101.5%
Plan 5	25	9.72%	3.37%	4.00%	17.09%	16.87%	101.3%
	35	11.24%	3.90%	4.00%	19.14%	18.97%	100.9%
	45	12.79%	4.44%	4.00%	21.23%	21.06%	100.8%
Plan 6	25	9.72%	3.16%	0.00%	12.88%	12.56%	102.5%
	35	11.24%	3.65%	0.00%	14.89%	14.61%	101.9%
	45	12.79%	4.15%	0.00%	16.94%	16.65%	101.8%
Plan 7	All	11.48%	3.24%	0.00%	14.72%	15.28%	96.3%
Probation Members							
Plan 1	25	10.09%	5.37%	3.50%	18.96%	18.56%	102.1%
	35	11.67%	6.21%	3.50%	21.38%	21.03%	101.7%
	45	13.51%	7.19%	3.50%	24.20%	23.80%	101.7%
Plan 2	25	10.09%	5.37%	3.50%	18.96%	18.43%	102.8%
	35	11.67%	6.21%	3.50%	21.38%	20.88%	102.4%
	45	13.51%	7.19%	3.50%	24.20%	23.63%	102.4%
Plan 4	25	9.72%	3.86%	3.50%	17.08%	16.68%	102.4%
	35	11.24%	4.46%	3.50%	19.20%	18.83%	102.0%
	45	12.79%	5.07%	3.50%	21.36%	20.97%	101.9%
Plan 5	25	9.72%	3.40%	3.50%	16.62%	16.37%	101.5%
	35	11.24%	3.93%	3.50%	18.67%	18.47%	101.1%
	45	12.79%	4.47%	3.50%	20.76%	20.56%	101.0%
Plan 6	25	9.72%	2.96%	0.00%	12.68%	12.37%	102.5%
	35	11.24%	3.42%	0.00%	14.66%	14.39%	101.9%
	45	12.79%	3.89%	0.00%	16.68%	16.40%	101.8%
Plan 7	All	11.55%	3.30%	0.00%	14.85%	14.97%	99.2%

Notes:

1. All Safety and Probation members contribute 50% of the cost of COLA benefits.
2. Plan 7 COLA share represents one-half of the cost of the COLA.
3. See Appendix B of this report for a full description of members COLA share. See Appendix D of this report for a full schedule of rates.
4. Safety member cost sharing shown is for all members who are not Deputy Sheriffs. Cost sharing varies for Deputy Sheriffs.

Analysis of changes since last year

A detailed analysis of the sources of changes in both the Statutory Contribution Rate and the Funded Ratio was performed. There were several factors that caused the changes, with the overall impact of these factors being an increase in the Funded Ratio and an increase in the Statutory Contribution Rate from the prior valuation.

The following chart shows how the various factors affected the overall funding of SamCERA, as compared to the prior valuation.

Sources of Change	Statutory Contribution Rate	Funded Ratio
Calculated Rate for 2020 (2019 valuation)	37.86%	85.8%
Expected Year-to-Year Change	0.00%	2.2%
Assumption Changes	0.11%	-0.2%
Recognized Asset Gain / Loss		
From Current Year	0.10%	-0.1%
From Prior Years	0.16%	-0.2%
Retiree COLAs > Expected	0.31%	-0.2%
Salary and Payroll Increases > Assumed	0.36%	-0.4%
Contributions > Assumed	-0.05%	0.0%
SCA Contribution Funding	0.00%	0.0%
Increase in Plan 7 Membership	-0.09%	0.0%
Other Experience Changes	0.15%	-0.5%
Total Change	1.05%	0.6%
Calculated Rate for 2021 (2020 valuation)	38.91%	86.4%

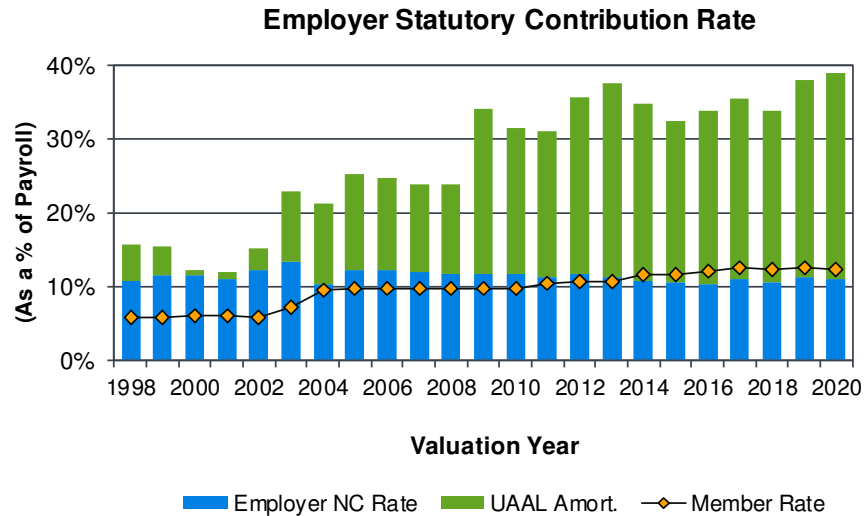
Employer Statutory Contribution Rate

The Statutory Contribution Rate (SCR) for each plan is equal to the payment of the Employer Normal Cost rate plus a 15-year layered amortization of the UAAL (excluding the CSCA and DSCA) for each year beginning with the UAAL as of June 30, 2008. The UAAL rate for the County is reduced to reflect the CSCA, as is the UAAL rate for SMCM&VCD to reflect the DSCA. The SCR (blended average for all employers) is 38.91% for the fiscal year beginning July 1, 2021.

It should be noted that these rates are a weighted average of each individual SamCERA plan. The actual percent of payroll to be contributed by each employer varies by plan. See Exhibit 10 for the SCR by classification and Exhibits 10a through 10d for the SCR by plan.

In our opinion, the SCRs calculated are adequate to maintain the funding of SamCERA based on the actuarial methods and assumptions shown in Appendix A of this report.

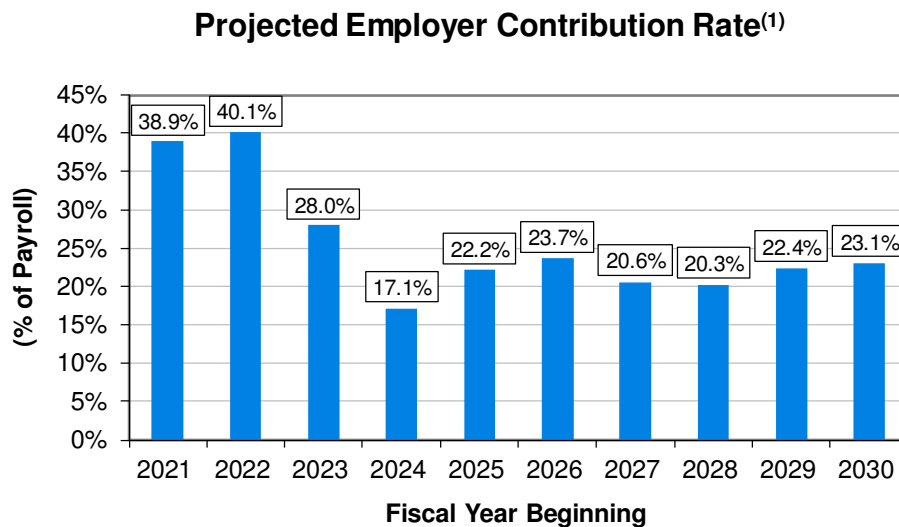
A historical perspective of the total SCR is shown in the following graph.



Projected Future Statutory Employer Contribution Rate

The statutory employer contribution rate beginning July 1, 2021 is 38.91% of payroll, which is a weighted average for all SamCERA plans. The actual percent of payroll to be contributed by the employers varies by plan as shown in Exhibit 10.

The new statutory employer contribution rate is effective for the fiscal year beginning July 1, 2021. There is a projected increase for the next year (2022) as the increase due to recognition of deferred asset losses is phased in. Effective with the fiscal year beginning July 1, 2023, a large decrease is projected as the June 30, 2008 UAAL is fully amortized. In future years there are increases and decreases as amortization layers “roll off.” To illustrate these impacts, we have performed a 10-year projection of the employer contribution rate that assumes all actuarial assumptions are met, and reflects the projected recognition of the deferred asset gains and losses as of June 30, 2020. This projection is shown in the graph below.



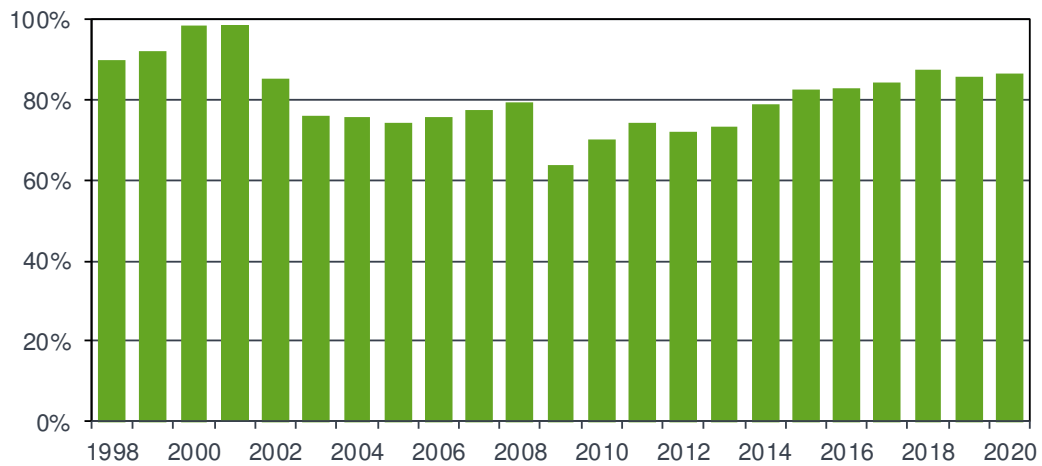
1. Projections assume that all actuarial assumptions are met after June 30, 2020, and reflect the scheduled recognition of asset gains and losses currently being deferred. Actual results will vary.

Funding Progress

Based on the 2019 valuation, the expected UAAL as of June 30, 2020 was \$689 million. The actual UAAL for the fiscal year ended June 30, 2020 is \$788 million. This difference is due to a combination of factors, including: salary increases and retiree COLAs greater than assumed, assumption changes as a result of the 2020 Investigation of Experience, and investment returns less than assumed.

The Funded Ratio compares the value of the Actuarial Value of Assets (net of certain non-valuation reserves) to the Actuarial Accrued Liability (AAL) for all SamCERA plans combined. SamCERA's Funded Ratio increased rapidly in the last half of the 1990s, reaching almost 100% in 2001. However, due primarily to asset losses from that time through 2009, the Funded Ratio decreased significantly over those years. In recent years, the Funded Ratio has improved, due primarily to better-than-assumed investment performance and strong funding.

Historical Funded Ratios



Assets

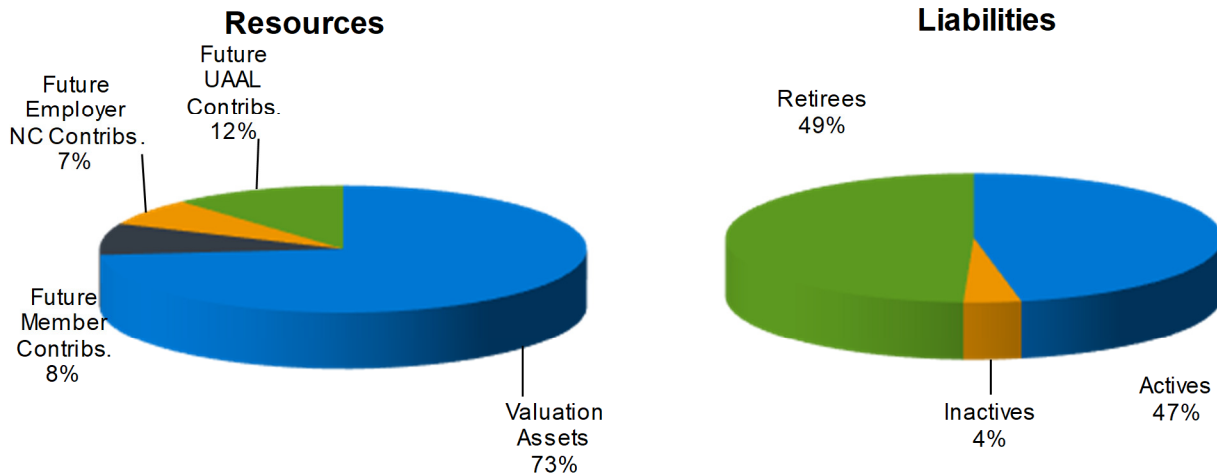
On a market value basis, for the fiscal year ended June 30, 2020, SamCERA earned 0.9% net of investment and administrative expenses. Note that this rate of return may differ from that calculated by SamCERA and shown in the CAFR based on the calculation method.

SamCERA uses an asset-smoothing method in the calculation of the UAAL contribution. Under this method, the market value returns are smoothed over a five-year (10 six-month) period. Due to the recognition of current and deferred net asset losses, the return on Actuarial Valuation Assets, at 6.2% net of expenses, was less than the assumed return of 6.5% for the fiscal year ended June 30, 2020.

Actuarial Balance Sheet

One part of the valuation process is to compare the total Valuation Assets of SamCERA with its total liabilities for all plans. In this analysis, SamCERA's resources equal the actuarial assets plus the expected future contributions by both the employers and members. Liabilities reflect benefits already earned in the past and those expected to be earned in the future by current members. This relationship is shown in the following chart. The AAL is the total of these liabilities less expected future Normal Cost contributions.

Comparing the current and future resources to the current and future liabilities, we then determine the annual contribution amount for the coming fiscal year.

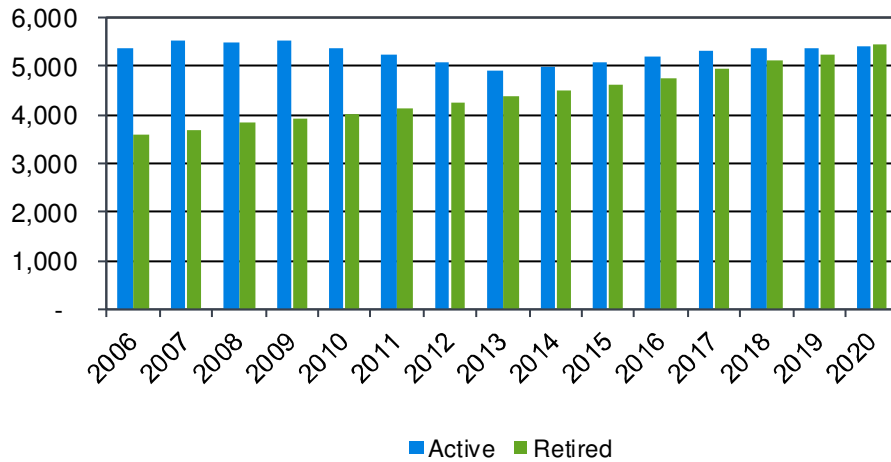


Member Information

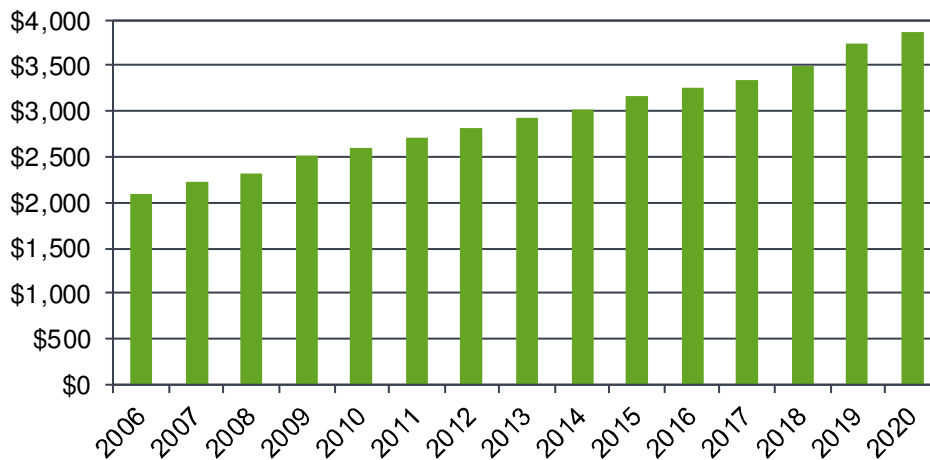
The number of active members included in the valuation increased from 5,377 in 2019 to 5,400 in 2020.

Retired member counts continue to increase steadily. For 2020, there were 5,454 retired members and beneficiaries with an average benefit of \$3,865 per month. This represents a 4.4% increase in count (up from 5,225 in 2019) and a 3.6% increase in the average monthly benefit (up from \$3,731 over the period). There are also 1,882 members who are no longer actively employed nor retired that have contributions on deposit or are entitled to a future retirement benefit.

Membership Count



Average Monthly Retirement Benefit



Analysis of Change in Member Population

The following table summarizes the year-to-year change in member population.

	Active Members	Inactive Members	Service Retired Members	Disabled Retired Members	Beneficiaries in Pay	Total
As of June 30, 2019	5,377	1,767	4,133	487	605	12,369
New Members	489	35	7	2	75	608
Status Change:						
to Active	25	(24)	(1)	-	-	-
to Inactive	(213)	213	-	-	-	-
to Service Retirement	(202)	(55)	257	-	-	-
to Disabled Retirement	(15)	(3)	(10)	28	-	-
to Beneficiary	-	(3)	-	-	3	-
Refunds	(53)	(43)	-	-	-	(96)
Terminated non-vested	-	-	-	-	-	-
Deaths	(8)	(5)	(94)	(11)	(27)	(145)
As of June 30, 2020	5,400	1,882	4,292	506	656	12,736

Summary Valuation Results

Exhibit 2 presents a comparison of the key results from the June 30, 2020 and June 30, 2019 valuations. More detail on each of these elements can be found in the following sections and exhibits of this report.

Exhibit 2
Summary of Significant Valuation Results

	June 30, 2020	June 30, 2019	Relative Change
1. Total Membership			
A. Active Members	5,400	5,377	0.4%
B. Retired Members & Beneficiaries	5,454	5,225	4.4%
C. Inactive Members	1,882	1,767	6.5%
D. Total	12,736	12,369	3.0 %
2. Pay Rate			
A. Annual Total (\$thousands)	\$ 594,573	\$ 572,516	3.9%
B. Monthly Average	9,176	8,873	3.4%
3. Average Monthly Benefit to Current Retirees and Beneficiaries			
A. Service Retirement	\$ 4,078	\$ 3,914	4.2%
B. Disability Retirement	3,892	3,741	4.0%
C. Surviving Spouse and Dependents	2,449	2,478	(1.2)%
D. Total Average	3,865	3,731	3.6%
4. Actuarial Accrued Liability (\$thousands)			
A. Active Members	\$ 2,176,840	\$ 2,090,884	4.1%
B. Retired Members	3,354,864	3,130,388	7.2%
C. Inactive Members	254,350	238,706	6.6%
D. Total	\$ 5,786,054	\$ 5,459,978	6.0%
5. Assets			
A. Market Value of Fund (\$thousands)	\$ 4,780,502	\$ 4,723,110	1.2%
B. Return on Market Value	0.9%	6.2%	
C. Actuarial Value (\$thousands)	\$ 4,998,316	\$ 4,685,502	6.7%
D. Return on Actuarial Value	6.2%	5.6%	
6. Unfunded Actuarial Accrued Liability or Surplus Funding (\$thousands)	\$ 787,738	\$ 774,476	1.7%
7. Statutory Employer Contribution Rate for all plans combined as a percent of total payroll			
A. Gross Normal Cost	23.11%	23.73%	(2.6)%
B. Member Contributions	(12.21)%	(12.46)%	(2.0)%
C. Employer Normal Cost	10.90%	11.27%	(3.3)%
D. UAAL Amortization	28.01%	26.59%	5.3%
E. Total Employer Rate	38.91%	37.86%	2.8%
8. Funded Ratio (5C / 4D)	86.4%	85.8%	0.7%
9. Results Based on Market Value (No Asset Smoothing) -- For Informational Purposes Only			
A. Total Employer Rate	42.46%	37.23%	14.0%
B. Funded Ratio (5A / 4D)	82.6%	86.5%	(4.5)%

2. Scope of the report

This report presents the actuarial valuation of the San Mateo County Employees' Retirement Association as of June 30, 2020. This valuation was requested by the Board. Section 31453 of the County Employees Retirement Law of 1937 (the '37 Act) requires an actuarial valuation to be performed at least every three years for the purposes of setting contribution rates.

In reading our cover letter, please pay particular attention to the guidelines employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings depend. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date. On that date, the assets available for the payment of retirement benefits are appraised. These assets are compared with the accrued and future actuarial liabilities, which are generally well in excess of the actuarial assets. The purpose of the valuation is to determine what future contributions by the members and employers are needed to pay all expected future benefits not funded by the current assets.

A summary of the findings resulting from this valuation is presented in the previous section. The following sections of the report provide the details of the actuarial valuation.

Section 3 describes the assets and investment experience of SamCERA. The assets and investment income are presented in Exhibits 3-5. Exhibits 6-8 develop the Actuarial Value of Assets as of June 30, 2020.

Section 4 describes the benefit obligations of SamCERA. Exhibits 9a and 9b show the Actuarial Balance Sheet. Additional analysis on the change in UAAL is also provided in this section.

Sections 5 and 6 deal with the process for determining required contributions based on the relationship between the actuarial assets and the actuarial liabilities. Section 5 discusses the member contribution rates and Section 6 discusses the employer contributions needed to fund the benefits under the actuarial cost method in use.

Section 7 discloses supplemental information that may be included in SamCERA's CAFR.

This report includes several appendices:

- Appendix A A summary of the actuarial procedures and assumptions used to estimate liabilities and contributions.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law as of June 30, 2020.
- Appendix C Schedules of valuation data classified by various categories of members by plan.
- Appendix D Member contribution rates by plan.
- Appendix E A glossary of actuarial terms used in this report.

Section 8 discusses risks that could potentially affect future valuation results.

3. Assets

This section of the report deals with the determination of assets used for funding purposes. A historical summary of SamCERA's assets is presented below:

Year	All dollar amounts in millions		
	Market Value of Total Assets	Actuarial Value	
		Non Valuation Assets	Valuation Assets
2001	\$ 1,308	\$ 42	\$ 1,385
2002	1,207	32	1,417
2003	1,233	34	1,354
2004	1,435	31	1,453
2005	1,599	0	1,616
2006	1,790	0	1,769
2007	2,132	0	1,977
2008	2,011	0	2,219
2009	1,591	0	1,910
2010	1,816	0	2,179
2011	2,318	0	2,405
2012	2,360	0	2,480
2013	2,728	0	2,619
2014	3,292	30	2,993
2015	3,454	33	3,344
2016	3,541	36	3,625
2017	4,039	40	3,977
2018	4,374	44	4,352
2019	4,723	48	4,686
2020	4,781	51	4,998

On June 30, 2020, the total market value of the fund was about \$4.78 billion. The actuarial value of the fund was determined to be \$5.05 billion, including the non-valuation reserves.

Financial Exhibits

Exhibit 3 presents a Statement of Plan Net Assets and Exhibit 4 presents a Statement of Changes in Plan Net Assets.

Exhibit 5 describes the allocation of SamCERA's assets by the various reserve values determined for accounting purposes.

Exhibits 3-5 are taken from data furnished to us by SamCERA for its annual financial report. We have accepted these tables for use in this report without audit, but we have reviewed them for reasonableness and consistency with previous reports.

Actuarial Value of Assets

The actuarial value of assets is equal to the market value of assets with a five-year (10 six-month periods) recognition of the difference between expected and actual investment returns. Effective with the June 30, 2018 valuation, all deferred gains and losses were combined into a single amount that will be recognized over a five-year (10 six-month) period. Beginning with the six-month period immediately following the June 30, 2018 valuation, offsetting of current period gains or losses against prior period gains or losses will occur, as follows. First, to the extent there is a loss for the period, it shall be used to offset any unrecognized gains from prior periods in the order of oldest to most recent. Any remaining loss for the period is recognized over a five-year (10 six-month) period. Similarly, any gain for the period shall be offset against unrecognized losses from prior periods.

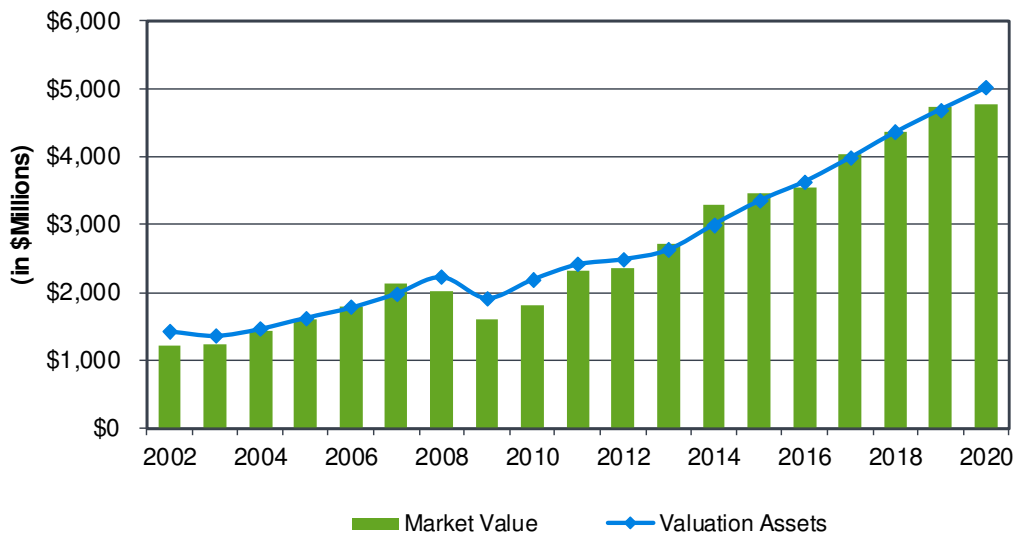
Beginning with the June 30, 2014 valuation, assets used to calculate the preliminary UAAL contribution rates exclude the value of the CSCA. The CSCA is used to adjust the County's Statutory Contribution Rate. Beginning with the June 30, 2016 valuation, assets used to calculate the preliminary UAAL contribution rates also exclude the value of the DSCA. The DSCA is used to adjust the SMCM&VCD's Statutory Contribution Rate. To adjust the Statutory Contribution Rate, we track the CSCA and DSCA assets separately.

The development of the June 30, 2020 actuarial value of assets is shown in Exhibits 6 and 7. Exhibits 6a and 7a show the development of the total actuarial value of assets. Exhibits 6b and 7b show the development excluding the Supplemental Contribution Account (SCA) assets. Exhibits 6c and 7c show the development of the actuarial value of assets for the CSCA. Exhibits 6d and 7d show the development of the actuarial value of assets for the DSCA.

The County and the SMCM&VCD each made their contributions for the year ended June 30, 2020 based on the SCR. Since the SCR reflected offsets due to the respective SCAs, each employer effectively used up an amount of the SCA equivalent to the offset. Therefore, we have shown this in the "Credits Used" column in Exhibits 6c and 6d.

The following graph shows a historical comparison of the total actuarial and market assets used for valuation purposes.

Applicable Asset Values



Valuation Assets

Valuation Assets are the actuarial value of the fund, less the value of any reserves which have been set aside for current liabilities and special benefits (if any) that are to be funded outside of the actuarially determined contribution rates.

Valuation Assets are allocated by classification (general, safety, and probation) as shown in Exhibit 8. This allocation is necessary because the UAAL contribution rates are determined separately by employer and class.

Allocation of Assets

In the calculation of the Statutory Contribution Rate, the Normal Cost Rate is determined separately for each plan. The UAAL portion of the rate is allocated proportionately to each classification. To determine the UAAL amount by classification, the actual UAAL is allocated in proportion to the expected UAAL after reflecting expected contributions from the prior year to pay down the UAAL. The allocation is done without consideration of the SCAs. Valuation Assets are equal to the AAL minus the UAAL for each classification. These calculations are shown in Exhibit 8.

CSCA valuation assets are allocated to each County member classification (General, Safety or Probation) in proportion to the actual UAAL excluding SCAs. These assets directly reduce the UAAL of each classification.

DSCA assets are allocated entirely to the SMCM&VCD general member classification.

Exhibit 3
Statement of Plan Net Assets as of June 30, 2020 and 2019

	2020	2019
ASSETS		
Cash and short-term investments:		
Cash and cash equivalents	\$ 107,989,686	\$ 33,102,412
Cash management overlay	54,095,321	48,011,505
Securities lending cash collateral	2,423,778	403,093
Total cash and short-term investments	<u>164,508,785</u>	<u>81,517,010</u>
Receivables:		
Contributions	12,376,867	10,300,002
Due from brokers for investment sold	78,103,219	6,640,025
Investment income	5,390,580	6,292,641
Securities lending income	2,752	12,614
Other	86,859	95,566
Total receivables	<u>95,960,277</u>	<u>23,340,848</u>
Prepaid expense	-	11,669
Investments at fair value:		
Public equity	1,866,264,297	1,847,846,613
Fixed income	1,434,811,710	999,477,347
Alternatives	593,379,227	579,774,460
Risk parity	-	389,039,081
Inflation hedge	704,360,824	809,138,278
Total investments at fair value	<u>4,598,816,058</u>	<u>4,625,275,779</u>
Capital assets	8,108,286	8,040,088
Less: accumulated depreciation	<u>(2,898,888)</u>	<u>(2,060,891)</u>
Capital assets, net of accumulated depreciation	<u>5,209,398</u>	<u>5,979,197</u>
Total assets	<u>4,864,494,518</u>	<u>4,736,124,503</u>
LIABILITIES		
Investment management fees payable	2,035,363	2,213,009
Due to brokers for investments purchased	78,241,899	9,060,929
Securities lending collateral due to borrowers	2,423,778	405,367
Other	<u>1,291,165</u>	<u>1,335,263</u>
Total liabilities	<u>83,992,205</u>	<u>13,014,568</u>
NET POSITION RESTRICTED FOR PENSIONS	<u>\$ 4,780,502,313</u>	<u>\$ 4,723,109,935</u>

Exhibit 4
Statement of Changes in Plan Net Assets for the Fiscal Years Ended 2020 and 2019

	2020	2019
ADDITIONS		
Contributions:		
Employer	\$ 198,582,998	\$ 194,830,054
Employer Supplemental	-	50,668,357
Member	70,630,765	67,695,627
Total contributions	<u>269,213,763</u>	<u>313,194,038</u>
Investment income:		
Interest and dividends	76,762,516	71,833,683
Net appreciation in fair value of investments	5,173,433	242,168,364
Total investment income	81,935,949	314,002,047
Less: investment expenses	(39,581,080)	(42,376,557)
Net investment income	<u>42,354,869</u>	<u>271,625,490</u>
Securities lending income:		
Earnings	35,620	88,955
Rebates	16,474	13,108
Fees	(14,741)	(36,070)
Net securities lending income	<u>37,353</u>	<u>65,993</u>
Total additions	<u>311,605,985</u>	<u>584,885,521</u>
DEDUCTIONS		
Benefits:		
Service retirement benefits	212,632,929	196,874,097
Disability retirement benefits	27,601,908	25,211,881
Survivor, death and other benefits	1,790,029	1,528,066
Total benefits	<u>242,024,866</u>	<u>223,614,044</u>
Member Refunds	3,796,276	3,571,079
Administrative expenses	6,371,363	6,056,713
Information technology expenses	2,021,102	2,495,264
Other expenses	-	-
Total deductions	<u>254,213,607</u>	<u>235,737,100</u>
Net increase	57,392,378	349,148,421
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of year	4,723,109,935	4,373,961,514
End of year	<u>\$ 4,780,502,313</u>	<u>\$ 4,723,109,935</u>
Estimated Return, Net of Investment Expenses	0.9%	6.2%

Exhibit 5
Allocation of Assets by Accounting Reserve Amounts
as of June 30, 2020 and 2019

	2020	2019
Valuation Reserves		
1. Member Reserve	\$ 858,746,783	\$ 769,136,683
2. Employer Advance Reserve	1,213,276,549	1,086,126,550
3. Retiree Reserves	1,292,402,035	1,198,883,409
4. Cost of Living Adjustment Reserve	1,552,804,970	1,464,872,095
5. County Supplemental Contributions Account Reserve	174,529,290	188,806,043
6. District Supplemental Contributions Account Reserve	1,519,451	1,864,243
Total Valuation Reserves	5,093,279,078	4,709,689,023
Non-Valuation Reserves		
1. Contingency Reserve	50,488,044	47,328,299
2. Undistributed Earnings / (Losses) Reserve	(105,190,095)	(24,074,932)
Total Non-Valuation Reserves	(54,702,051)	23,253,367
Market Stabilization Account	(258,074,714)	(9,832,455)
Total Reserves (Market Value of Assets)	\$ 4,780,502,313	\$ 4,723,109,935

Note: These amounts were determined by SamCERA for accounting purposes.

Exhibit 6a
Five-Year Smoothing of Gains and Losses on Market Value (Total Assets) – History

History of Unexpected Asset Gains and Losses								
Six-Month Period Ended	Market Value at Beginning of Period	Contributions	Benefit Payments	Market Value at End of Period	Assumed Rate of Return	Expected Return	Actual Return	Unexpected Gain / (Loss)
06/30/2020	\$ 4,950,278,117	\$ 141,276,359	\$ 126,289,581	\$ 4,780,502,313	3.250%	\$ 162,104,000	\$ (184,762,582)	\$ (346,866,582)
12/31/2019	4,723,109,935	127,937,403	119,531,561	4,950,278,117	3.250%	154,870,851	218,762,340	63,891,489
06/30/2019	4,251,567,361	102,883,854	116,505,474	4,723,109,935	3.375%	142,617,961	485,164,194	342,546,233
12/31/2018	4,373,961,514	210,310,184	110,679,649	4,251,567,361	3.375%	149,503,844	(222,024,688)	(371,528,532)
06/30/2018	4,337,368,899	146,901,128	106,950,260	4,373,961,514	3.375%	147,555,099	(3,358,253)	(150,913,352)
12/31/2017	4,038,701,990	124,539,824	102,104,343	4,337,368,899	3.375%	137,926,474	276,231,428	138,304,954
06/30/2017	3,721,598,964	154,997,828	98,037,329	4,038,701,990	3.500%	131,806,865	260,142,527	128,335,662
12/31/2016	3,541,388,497	105,889,408	95,202,951	3,721,598,964	3.500%	125,157,215	169,524,010	44,366,795
06/30/2016	3,361,636,244	141,996,842	93,308,035	3,541,388,497	3.625%	123,696,090	131,063,446	7,367,356
12/31/2015	3,454,476,328	105,166,352	89,555,664	3,361,636,244	3.625%	126,551,502	(108,450,772)	(235,002,274)

Exhibit 6b
Five-Year Smoothing of Gains and Losses on Market Value (excluding SCAs) – History

History of Unexpected Asset Gains and Losses								
Six-Month Period Ended	Market Value at Beginning of Period	Contributions and SCA Credits	Benefit Payments	Market Value at End of Period	Assumed Rate of Return	Expected Return	Actual Return	Unexpected Gain / (Loss)
06/30/2020	\$ 4,750,877,586	\$ 157,364,783	\$ 126,289,581	\$ 4,604,453,572	3.250%	\$ 155,623,482	\$ (177,499,216)	\$ (333,122,698)
12/31/2019	4,532,439,649	127,937,403	119,531,561	4,750,877,586	3.250%	148,674,067	210,032,095	61,358,028
06/30/2019	4,114,925,851	64,852,245	116,505,474	4,532,439,649	3.375%	137,584,435	469,167,027	331,582,592
12/31/2018	4,230,263,350	210,310,184	110,679,649	4,114,925,851	3.375%	144,654,031	(214,968,034)	(359,622,065)
06/30/2018	4,212,378,467	128,178,746	106,950,260	4,230,263,350	3.375%	143,336,672	(3,343,603)	(146,680,275)
12/31/2017	3,921,574,858	124,539,824	102,104,343	4,212,378,467	3.375%	133,973,434	268,368,128	134,394,694
06/30/2017	3,637,603,049	127,692,026	98,037,329	3,921,574,858	3.500%	128,867,008	254,317,112	125,450,104
12/31/2016	3,461,178,323	105,889,408	95,202,951	3,637,603,049	3.500%	122,349,858	165,738,269	43,388,411
06/30/2016	3,298,745,030	127,369,320	93,308,035	3,461,178,323	3.625%	121,239,221	128,372,008	7,132,787
12/31/2015	3,391,154,929	103,655,923	89,555,664	3,298,745,030	3.625%	124,233,287	(106,510,158)	(230,743,445)

Exhibit 6c
Five-Year Smoothing of Gains and Losses on Market Value of CSCA – History

History of Unexpected Asset Gains and Losses								
Six-Month Period Ended	Account Value at Beginning of Period	Contributions	Credits Used	Account Value at End of Period	Assumed Rate of Return	Expected Return	Actual Return	Unexpected Gain / (Loss)
06/30/2020	\$ 197,473,708	\$ -	\$ 15,629,442	\$ 174,529,290	3.250%	\$ 6,417,896	\$ (7,314,976)	\$ (13,732,872)
12/31/2019	188,806,043	-	-	197,473,708	3.250%	6,136,196	8,667,665	2,531,469
06/30/2019	134,646,329	50,668,357	12,444,200	188,806,043	3.375%	4,966,189	15,935,557	10,969,368
12/31/2018	141,751,083	-	-	134,646,329	3.375%	4,784,099	(7,104,754)	(11,888,853)
06/30/2018	122,954,893	27,630,129	8,745,874	141,751,083	3.375%	4,149,728	(88,065)	(4,237,793)
12/31/2017	115,170,236	-	-	122,954,893	3.375%	3,886,995	7,784,657	3,897,662
06/30/2017	82,353,954	33,600,000	6,544,198	115,170,236	3.500%	2,882,388	5,760,480	2,878,092
12/31/2016	78,626,500	-	-	82,353,954	3.500%	2,751,928	3,727,454	975,526
06/30/2016	61,353,822	19,538,000	4,910,478	78,626,500	3.625%	2,401,139	2,645,156	244,017
12/31/2015	63,321,399	-	-	61,353,822	3.625%	2,295,401	(1,967,577)	(4,262,978)

Exhibit 6d
Five-Year Smoothing of Gains and Losses on Market Value of DCSA – History

History of Unexpected Asset Gains and Losses									
Six-Month Period Ended	Account Value at Beginning of Period	Contributions	Credits Used	Account Value at End of Period	Assumed Rate of Return	Expected Return	Actual Return	Unexpected Gain / (Loss)	
06/30/2020	\$ 1,926,823	\$ -	\$ 458,982	\$ 1,519,451	3.250%	\$ 62,622	\$ 51,610	\$ (11,012)	
12/31/2019	1,864,243	-	-	1,926,823	3.250%	60,588	62,580	1,992	
06/30/2019	1,995,181	-	192,548	1,864,243	3.375%	67,337	61,610	(5,727)	
12/31/2018	1,947,081	-	-	1,995,181	3.375%	65,714	48,100	(17,614)	
06/30/2018	2,035,539	-	161,873	1,947,081	3.375%	68,699	73,415	4,716	
12/31/2017	1,956,896	-	-	2,035,539	3.375%	66,045	78,643	12,598	
06/30/2017	1,641,961	250,000	-	1,956,896	3.500%	57,469	64,935	7,466	
12/31/2016	1,583,674	-	-	1,641,961	3.500%	55,429	58,287	2,858	
06/30/2016	1,537,392	-	-	1,583,674	3.625%	55,730	46,282	(9,448)	
12/31/2015	0	1,510,429	-	1,537,392	3.625%	22,814	26,963	4,149	

Exhibit 7a
Five-Year Smoothing – Development of Valuation Assets (Total Assets)

Development of Market Stabilization Reserve				
Six-Month Period Ended	Investment Gain / (Loss)	Adjusted Investment Gain / (Loss)	Percent Excluded	Adjusted Gain / (Loss) Excluded
06/30/2020	\$ (346,866,582)	\$ (298,111,054) x	90%	= \$ (268,299,949)
12/31/2019	63,891,489	0 x	80%	= 0
06/30/2019	342,546,233	(2,994) x	70%	= (2,096)
12/31/2018	(371,528,532)	0 x	60%	= 0
06/30/2018	(150,913,352)	0 x	50%	= 0
12/31/2017	138,304,954	0 x	40%	= 0
06/30/2017	128,335,662	0 x	30%	= 0
12/31/2016	44,366,795	0 x	20%	= 0
06/30/2016	7,367,356	0 x	10%	= 0
12/31/2015	(235,002,274)	0 x	0%	= 0
Total Gain / (Loss) Excluded =				\$ (268,302,045)

Development of Valuation Assets		
1. Market Value of Assets as of June 30, 2020		\$ 4,780,502,313
2. Preliminary Market Stabilization Reserve		<u>(268,302,045)</u>
3. Preliminary Actuarial Value of Assets (1) - (2)		5,048,804,358
4. Corridor Around Market Value		
a) Minimum = 80% of Market	\$ 3,824,401,850	
b) Maximum = 120% of Market	5,736,602,776	
c) Corridor Adjustment		0
5. Market Stabilization Reserve	(268,302,045)	
6. Gross Actuarial Valuation of Assets (3) - (4c)		\$ 5,048,804,358
7. Non-Valuation Reserves		
a) Contingency Reserve	50,488,044	
b) Undistributed Earnings / (Losses) Reserve	0	
c) Other Specified Reserves	<u>0</u>	
d) Total		50,488,044
8. Valuation Assets (6) - (7d)		\$ 4,998,316,314

Exhibit 7b
Five-Year Smoothing – Development of Valuation Assets (excluding SCAs)

Development of Market Stabilization Reserve				
Six-Month Period Ended	Investment Gain / (Loss)	Adjusted Investment Gain / (Loss)	Percent Excluded	Adjusted Gain / (Loss) Excluded
06/30/2020	\$ (333,122,698)	\$ (286,749,682) x	90%	= \$ (258,074,714)
12/31/2019	61,358,028	0 x	80%	= 0
06/30/2019	331,582,592	0 x	70%	= 0
12/31/2018	(359,622,065)	0 x	60%	= 0
06/30/2018	(146,680,275)	0 x	50%	= 0
12/31/2017	134,394,694	0 x	40%	= 0
06/30/2017	125,450,104	0 x	30%	= 0
12/31/2016	43,388,411	0 x	20%	= 0
06/30/2016	7,132,787	0 x	10%	= 0
12/31/2015	(230,743,445)	0 x	0%	= 0
Total Gain / (Loss) Excluded =				\$ (258,074,714)

Development of Valuation Assets		
1. Market Value of Assets as of June 30, 2020		\$ 4,604,453,572
2. Preliminary Market Stabilization Reserve		<u>(258,074,714)</u>
3. Preliminary Actuarial Value of Assets (1) - (2)		4,862,528,286
4. Corridor Around Market Value		
a) Minimum = 80% of Market	\$ 3,683,562,858	
b) Maximum = 120% of Market	5,525,344,286	
c) Corridor Adjustment		0
5. Market Stabilization Reserve	(258,074,714)	
6. Gross Actuarial Valuation of Assets (3) - (4c)		\$ 4,862,528,286
7. Non-Valuation Reserves		
a) Contingency Reserve	50,488,044	
b) Undistributed Earnings / (Losses) Reserve	0	
c) Other Specified Reserves	<u>0</u>	
d) Total		50,488,044
8. Valuation Assets (6) - (7d)		\$ 4,812,040,242

**Exhibit 7c
Five-Year Smoothing – Development of CSCA Assets**

Development of Market Stabilization Reserve				
Six-Month Period Ended	Investment Gain / (Loss) ¹	Adjusted Investment Gain / (Loss)	Percent Excluded	Adjusted Gain / (Loss) Excluded
06/30/2020	\$ (13,732,872)	\$ (11,350,360) x	90%	= \$ (10,215,324)
12/31/2019	2,531,469	0 x	80%	= 0
06/30/2019	10,969,368	0 x	70%	= 0
12/31/2018	(11,888,853)	0 x	60%	= 0
06/30/2018	(4,237,793)	0 x	50%	= 0
12/31/2017	3,897,662	0 x	40%	= 0
06/30/2017	2,878,092	0 x	30%	= 0
12/31/2016	975,526	0 x	20%	= 0
06/30/2016	244,017	0 x	10%	= 0
12/31/2015	(4,262,978)	0 x	0%	= 0
Total Gain / (Loss) Excluded =				\$ (10,215,324)

1. Historical amounts were recalculated as of June 30, 2019 for consistency with Addenda #1 of the MOU regarding retirement system funding.

Development of Valuation Assets	
1. Market Value of Assets as of June 30, 2020	\$ 174,529,290
2. Preliminary Market Stabilization Reserve	<u>(10,215,324)</u>
3. Preliminary Actuarial Value of Assets (1) - (2)	184,744,614
4. Corridor Around Market Value	
a) Minimum = 80% of Market	\$ 139,623,432
b) Maximum = 120% of Market	209,435,148
c) Corridor Adjustment	0
5. Market Stabilization Reserve	(10,215,324)
6. Gross Actuarial Valuation of Assets (3) - (4c)	\$ 184,744,614
7. Non-Valuation Reserves	
a) Contingency Reserve	0
b) Undistributed Earnings / (Losses) Reserve	0
c) Other Specified Reserves	<u>0</u>
d) Total	0
8. Valuation Assets (6) - (7d)	\$ 184,744,614

**Exhibit 7d
Five-Year Smoothing – Development of DCSA Assets**

Development of Market Stabilization Reserve					
Six-Month Period Ended	Investment Gain / (Loss) ¹	Adjusted Investment Gain / (Loss)	Percent Excluded		Adjusted Gain / (Loss) Excluded
06/30/2020	\$ (11,012)	\$ (11,012) x	90%	=	\$ (9,911)
12/31/2019	1,992	0 x	80%	=	0
06/30/2019	(5,727)	(2,994) x	70%	=	(2,096)
12/31/2018	(17,614)	0 x	60%	=	0
06/30/2018	4,716	0 x	50%	=	0
12/31/2017	12,598	0 x	40%	=	0
06/30/2017	7,466	0 x	30%	=	0
12/31/2016	2,858	0 x	20%	=	0
06/30/2016	(9,448)	0 x	10%	=	0
12/31/2015	4,149	0 x	0%	=	0
Total Gain / (Loss) Excluded =					\$ (12,007)

1. Historical amounts were recalculated as of June 30, 2019 for consistency with the District's MOU regarding retirement system funding.

Development of Valuation Assets		
1. Market Value of Assets as of June 30, 2020		\$ 1,519,451
2. Preliminary Market Stabilization Reserve		(12,007)
3. Preliminary Actuarial Value of Assets (1) - (2)		1,531,458
4. Corridor Around Market Value		
a) Minimum = 80% of Market	\$ 1,215,561	
b) Maximum = 120% of Market	1,823,341	
c) Corridor Adjustment		0
5. Market Stabilization Reserve	(12,007)	
6. Gross Actuarial Valuation of Assets (3) - (4c)		\$ 1,531,458
7. Non-Valuation Reserves		
a) Contingency Reserve		0
b) Undistributed Earnings / (Losses) Reserve		0
c) Other Specified Reserves		0
d) Total		0
8. Valuation Assets (6) - (7d)		\$ 1,531,458

Exhibit 8
Allocation of Valuation Assets

(Dollars in thousands)

ALLOCATION OF VALUATION ASSETS				
For the Year Ended June 30, 2020				
(Dollars in thousands)				
	General	Safety	Probation	Total
1. Prior Year UAAL	\$ 683,331	\$ 209,863	\$ 71,840	\$ 965,034
2. Expected UAAL Contribution for Preceding Year	(103,096)	(34,196)	(9,153)	(146,445)
3. Expected Interest at 6.50%	41,119	12,547	4,377	58,043
4. Expected UAAL Based on Prior Year Assumptions	621,354	188,214	67,064	876,632
5. Percentage of Total Expected UAAL	70.88%	21.47%	7.65%	100.00%
6. Actual UAAL Based on Prior Year Assumptions				962,421
7. Actual AAL Based on Prior Year Assumptions	\$ 4,242,929	\$ 1,124,699	\$ 406,833	\$ 5,774,461
8. Allocated UAAL Based on Prior Year Assumptions	682,164	206,632	73,625	962,421
9. Valuation Assets (excluding SCA assets)	\$ 3,560,765	\$ 918,067	\$ 333,208	\$ 4,812,040
10. Actual UAAL excluding SCA Valuation Assets	\$ 687,498	\$ 208,641	\$ 77,875	\$ 974,014
11. Allocation of UAAL	70.58%	21.42%	8.00%	100.00%
12. Valuation Assets (CSCA)	\$ 130,393	\$ 39,572	\$ 14,780	\$ 184,745
13. Valuation Assets (DSCA)	\$ 1,531	\$ -	\$ -	\$ 1,531
14. Valuation Assets (Total)	\$ 3,692,689	\$ 957,639	\$ 347,988	\$ 4,998,316

4. Actuarial Liabilities

This section of the report focuses on the commitments of SamCERA for retirement benefits, which are referred to as its actuarial liabilities. All liabilities reflect the benefits effective through June 30, 2020.

In an active retirement system, the combined current and future actuarial liabilities will almost always exceed the actuarial assets. This difference has to be provided by future contributions. An actuarial valuation method sets out a schedule of future contributions that will deal with this difference in an orderly fashion. The determination of the level of future contributions needed is discussed in the next section.

The actuarial assumptions used to determine the liabilities are based on the results of our Investigation of Experience study for the period ended April 30, 2020. At its meeting on July 28, 2020, the Board adopted new assumptions as recommended by Milliman. These assumptions are shown in Appendix A. The assumptions will next be reviewed in detail in 2023 as part of the triennial investigation of experience study.

Actuarial Balance Sheet

The Actuarial Balance Sheet compares the Present Value of Future Benefits for retired, inactive and active members, compares them to the resources available to meet them, and determines the amount of any difference, also called the Unfunded Actuarial Accrued Liability (UAAL). For the purpose of the Actuarial Balance Sheet, SamCERA's resources are equal to the sum of:

- (a) Assets currently available to pay benefits and considered for funding purposes, the Valuation Assets,
- (b) The present value of future contributions expected to be made by current active members, and
- (c) The present value of future contributions expected to be made by the employer.

Exhibit 9a contains an analysis of the Present Value of Future Benefits compared to total Valuation Assets.

Exhibit 9b contains an analysis using the Valuation Assets excluding the SCA assets (sum of the CSCA and DSCA). These analyses are displayed by class of membership and by type of benefit.

Unfunded Actuarial Accrued Liability

The Actuarial Accrued Liability (AAL) represents the value of benefits earned as of the valuation date, and is one component of the Present Value of Future Benefits. The difference between the AAL and Valuation Assets is referred to as the Unfunded Actuarial Accrued Liability (UAAL).

Exhibit 9c provides an analysis of the change in the UAAL since the prior valuation date.

Exhibit 9a
Actuarial Balance Sheet (Total Assets)
June 30, 2020

(Dollars in thousands)

Resources				
	General	Safety	Probation	Total
Valuation Assets (Actuarial)	\$ 3,692,689	\$ 957,639	\$ 347,988	\$ 4,998,316
Present Value of Future Member Contributions	421,156	95,433	29,329	545,918
Present Value of Future Employer Contributions to Fund:				
a) Normal Cost	349,816	88,599	30,625	469,040
b) Unfunded Actuarial Accrued Liability	555,574	169,069	63,095	787,738
Total Resources	\$ 5,019,235	\$ 1,310,740	\$ 471,037	\$ 6,801,012
Liabilities				
	General	Safety	Probation	Total
Present Value of Future Benefits				
1. Present Retired Members	\$ 2,337,485	\$ 784,446	\$ 232,933	\$ 3,354,864
2. Current Inactive Members	219,659	20,886	13,805	254,350
3. Current Active Members				
- Service Retirement	2,228,328	447,137	206,007	2,881,472
- Termination Benefits	107,111	14,427	3,984	125,522
- Death Benefits	23,416	3,477	1,051	27,944
- Disability Benefits	103,236	40,367	13,257	156,860
- Total Active	2,462,091	505,408	224,299	3,191,798
Total Actuarial Liabilities	\$ 5,019,235	\$ 1,310,740	\$ 471,037	\$ 6,801,012

Exhibit 9b
Actuarial Balance Sheet (excluding SCAs)
June 30, 2020

(Dollars in thousands)

Resources				
	General	Safety	Probation	Total
Valuation Assets (Actuarial)	\$ 3,560,765	\$ 918,067	\$ 333,208	\$ 4,812,040
Present Value of Future Member Contributions	421,156	95,433	29,329	545,918
Present Value of Future Employer Contributions to Fund:				
a) Normal Cost	349,816	88,599	30,625	469,040
b) Unfunded Actuarial Accrued Liability	687,498	208,641	77,875	974,014
Total Resources	\$ 5,019,235	\$ 1,310,740	\$ 471,037	\$ 6,801,012

Liabilities				
	General	Safety	Probation	Total
Present Value of Future Benefits				
1. Present Retired Members	\$ 2,337,485	\$ 784,446	\$ 232,933	\$ 3,354,864
2. Current Inactive Members	219,659	20,886	13,805	254,350
3. Current Active Members				
- Service Retirement	2,228,328	447,137	206,007	2,881,472
- Termination Benefits	107,111	14,427	3,984	125,522
- Death Benefits	23,416	3,477	1,051	27,944
- Disability Benefits	103,236	40,367	13,257	156,860
- Total Active	2,462,091	505,408	224,299	3,191,798
Total Actuarial Liabilities	\$ 5,019,235	\$ 1,310,740	\$ 471,037	\$ 6,801,012

Exhibit 9c
Analysis of Change in the Unfunded Actuarial Accrued Liability
June 30, 2020

(Dollars in thousands)

	Amount	As a Percent of June 30, 2020 Actuarial Accrued Liability
Unfunded Actuarial Accrued Liability - June 30, 2019	\$ 774,476.0	13.4%
Increase in UAAL due to new assumptions	11,592.5	0.2%
Interest Accrued	50,340.9	0.9%
Benefits Accrued (Normal Cost)	141,957.6	2.5%
<u>Contributions</u>		
Employers	\$ (204,935.3)	-3.5%
Members	(72,890.1)	-1.3%
CSCA and DCSA Contributions	0.0	0.0%
Total	<u>(277,825.4)</u>	-4.8%
Expected Unfunded Actuarial Accrued Liability - June 30, 2020	\$ 700,541.6	12.1%
Sources of Change:		0.0%
(Gain) / Loss due to Investment Income	15,884.3	0.3%
<u>Liability (Gains) and Losses</u>		
Salary Increases Greater than Expected	\$ 25,190.4	0.4%
Active Member Experience (non salary)	16,921.6	0.3%
CPI Greater than Expected	18,992.1	0.3%
Mortality Experience	2,963.1	0.1%
All Other Experience	7,244.4	0.1%
Total	<u>71,311.6</u>	1.2%
Total Changes	\$ 87,195.9	1.5%
Unfunded Actuarial Accrued Liability - June 30, 2020	\$ 787,737.5	13.6%

5. Member Contributions

For SamCERA members in Plans 1-6, contributions are of three types: Basic contributions, Cost Sharing contributions, and COLA Cost Sharing contributions.

SamCERA members in Plan 7 pay contributions equal to one-half of the total Normal Cost rate for all members.

There are no member contributions under General Plan 3.

Basic Member Contributions

Basic contribution member rates for General members in Plans 1, 2 and 4 are defined in Section 31621.9 of the County Employees Retirement Law (CERL). General Plan 5 member rates are defined in Section 31621, and Probation and Safety member rates in Plans 1-6 are defined in Section 31639.25.

Basic member contributions are determined using the Entry Age Normal Cost Method and the following actuarial assumptions:

1. Expected rate of return on assets
2. Individual salary increase rate (wage growth + merit)
3. Mortality for members based on service retirement
4. No COLAs are assumed

The basic member contribution rates for Plans 1-6 were recalculated as of the June 30, 2020 valuation to reflect assumptions adopted by the Board of Retirement on July 28, 2020. The rates are shown in Appendix D.

Cost of Living Member Contributions

Members in Plans 1-6 (except Plan 3 and SMCM&VCD members) may share in the cost of the Cost of Living Adjustment (COLA) benefit by making additional contributions. The COLA level is described in detail in the Member Contributions section of Appendix B.

COLA member rates for Plans 1-6 are determined by calculating and applying a load factor to the basic member rates. New COLA load factors were calculated in the 2020 valuation as it is a triennial year. COLA load factors are determined for each class and plan of member separately, as shown in the following table:

Plan	COLA Share	COLA Load
General 1	50%	35.00%
General 2	50%	34.50%
General 4	50%	26.45%
General 5	50%	24.73%
Safety 1	50%	47.93%
Safety 2	50%	51.77%
Safety 4	50%	39.14%
Safety 5	50%	34.72%
Safety 6	50%	32.47%
Probation 1	50%	53.21%
Probation 2	50%	53.21%
Probation 4	50%	39.67%
Probation 5	50%	34.94%
Probation 6	50%	30.44%

As an example, a member who enters General Plan 5 at age 35 has a basic member contribution rate of 7.18% (Exhibit D-1). The General Plan 5 COLA load is 24.73% for a member COLA contribution of 1.78% ($7.18\% \times 24.73\%$) of pay. The basic plus COLA member contribution rate is 8.96% ($7.18\% + 1.78\%$).

The COLA load for each plan is determined as follows: the present value of future normal costs with and without COLA provisions is calculated. The difference is multiplied by the COLA share percentage, and then divided by the present value of future basic only member contributions.

Cost Sharing Contributions

All Plan 1, 2, and 4 employees (except SMCM&VCD), as well as Plan 5 Safety and Probation employees, make additional cost-sharing contributions as shown in Appendix B. Plan 5 General employees, and all Plan 6 and 7 employees do not participate in cost-sharing. For valuation purposes, cost-sharing contributions are assumed to be permanent. The cost-sharing contributions are fixed and not impacted by changes in assumptions.

Member Contribution Rates (Plan 7)

Contributions for Plan 7 are defined in Section 7522.30 of the Government Code.

All employees of the same class who are members of Plan 7 shall contribute the same percentage of payroll. Such percentage will be 50% of the total Normal Cost rate for that class. The rates are recalculated annually.

6. Employer Contributions

Employer contribution rates are determined using the Entry Age Normal Cost Method. The portion of the actuarial present value of retirement benefits allocated to a valuation year by the Actuarial Cost Method is called the Normal Cost. These amounts are usually expressed as a percentage of payroll and called the Normal Cost Contribution Rate. Exhibit 11 shows the Normal Cost Rates by type of benefit and for each plan based on this valuation.

It should be noted that when we use the term "Gross Normal Cost rate," we are referring to the value of benefits earned by active members allocated to the valuation year. The Employer Normal Cost rate is the portion of the annual benefit that the employer is responsible for. This is simply the Gross Normal Cost rate less the contributions expected to be made by the members.

Statutory Contribution Rate

A summary of the total Statutory Contribution Rate for each classification, along with a comparison to the prior year's rates, can be found in Exhibit 10, with additional detail for each plan in Exhibits 10a through 10d. These results are expressed as a percentage of payroll. Note that SamCERA's UAAL is determined separately for each class. Thus, the employers fund the UAAL evenly as a percentage of pay over salaries for all members within a class.

The UAAL rate reflects a layered 15-year amortization beginning with the June 30, 2008 valuation. Gains and losses after that date are reflected over new 15-year periods starting with the valuation date. A one-year deferral in the implementation of the new rate is reflected. Therefore, the new employer contribution rate calculated in the 2020 valuation is effective July 1, 2021, and the UAAL is amortized over the remaining 14 years.

The SCA (CSCA for the County and DSCA for the SMCM&VCD) UAAL offset amounts are calculated in a similar manner to the UAAL rate described above. Effective with the June 30, 2018 valuation, the DSCA balance and subsequent UAAL layers are amortized over a period of five years. The total DSCA offset amount in a given year is limited to the SMCM&VCD UAAL rate, and the DSCA will be adjusted to reflect the actual offset (after reflecting the limitation, if any).

Exhibits 12a through 12c show detailed information on how the UAAL contribution rate is calculated using the layered method. The UAAL contribution rates are calculated prior to reflecting the SCAs.

Exhibits 12d and 12e show detailed information on how the SCA offsets are calculated using the same layered approach as used for UAAL amortizations.

Exhibit 10
Employer Statutory Contribution Rates – All Plans
For the 2021-2022 Fiscal Year

All Plans								
	Gross Normal Cost	Member Contributions	Employer Rates					Prior Year Total Contribution Rate
			Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾	Total Contribution Rate	
<u>General</u>								
County	20.74%	(11.17)%	7.41%	2.16%	9.57%	23.22%	32.79%	32.11%
Courts	21.01%	(11.38)%	7.44%	2.19%	9.63%	26.22%	35.85%	35.22%
Total	20.75%	(11.18)%	7.41%	2.16%	9.57%	23.36%	32.93%	32.25%
SMCM&VCD	21.22%	(8.85)%	9.10%	3.27%	12.37%	0.39%	12.76%	12.58%
Safety	35.30%	(17.73)%	13.52%	4.05%	17.57%	54.42%	71.99%	68.89%
Probation	35.51%	(17.21)%	14.19%	4.11%	18.30%	47.68%	65.98%	60.52%
All Plans	23.11%	(12.21)%	8.43%	2.47%	10.90%	28.01%	38.91%	37.86%
County Only	23.21%	(12.26)%	8.47%	2.48%	10.95%	28.19%	39.14%	38.06%

¹ County UAAL Contribution Rate includes an aggregate offset of 3.54% of payroll to reflect the County Supplementary Contribution Account. Offsets vary by class of member as follows:

- General member UAAL offset is 3.00% of payroll
- Safety member UAAL offset is 6.14% of payroll
- Probation member UAAL offset is 6.28% of payroll

SMCM&VCD UAAL Contribution Rate includes an offset of 25.83% of payroll to reflect the District Supplementary Contribution Account.

Exhibit 10a
Employer Statutory Contribution Rates – General Members
For the 2021-2022 Fiscal Year

	Employer Rates							Prior Year Total Contribution Rate
	Gross Normal Cost	Member Contributions	Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾	Total Contribution Rate	
General Members								
<u>Plan 1</u>								
County	26.80%	(14.95)%	8.37%	3.48%	11.85%	23.22%	35.07%	45.05%
Courts	26.80%	(14.95)%	8.37%	3.48%	11.85%	26.22%	38.07%	48.08%
Total	26.80%	(14.95)%	8.37%	3.48%	11.85%	23.22%	35.07%	45.05%
<u>Plan 2</u>								
County	23.34%	(13.59)%	6.70%	3.05%	9.75%	23.22%	32.97%	32.02%
Courts	23.34%	(13.59)%	6.70%	3.05%	9.75%	26.22%	35.97%	35.05%
Total	23.34%	(13.59)%	6.70%	3.05%	9.75%	23.34%	33.09%	32.14%
<u>Plan 3</u>								
County	8.51%	0.00%	8.51%	0.00%	8.51%	23.22%	31.73%	30.67%
Courts	8.51%	0.00%	8.51%	0.00%	8.51%	26.22%	34.73%	33.70%
Total	8.51%	0.00%	8.51%	0.00%	8.51%	23.29%	31.80%	30.67%
<u>Plan 4</u>								
County	23.44%	(13.45)%	7.57%	2.42%	9.99%	23.22%	33.21%	32.47%
Courts	23.44%	(13.45)%	7.57%	2.42%	9.99%	26.22%	36.21%	35.50%
Total	23.44%	(13.45)%	7.57%	2.42%	9.99%	23.38%	33.37%	32.64%
<u>Plan 5</u>								
County	21.65%	(9.90)%	9.57%	2.18%	11.75%	23.22%	34.97%	34.22%
Courts	21.65%	(9.90)%	9.57%	2.18%	11.75%	26.22%	37.97%	37.25%
Total	21.65%	(9.90)%	9.57%	2.18%	11.75%	23.37%	35.12%	34.36%
<u>Plan 7</u>								
County	17.49%	(8.75)%	7.02%	1.72%	8.74%	23.22%	31.96%	31.29%
Courts	17.49%	(8.75)%	7.02%	1.72%	8.74%	26.22%	34.96%	34.32%
Total	17.49%	(8.75)%	7.02%	1.72%	8.74%	23.35%	32.09%	31.41%
<u>All Plans</u>								
County	20.74%	(11.17)%	7.41%	2.16%	9.57%	23.22%	32.79%	32.11%
Courts	21.01%	(11.38)%	7.44%	2.19%	9.63%	26.22%	35.85%	35.22%
Total	20.75%	(11.18)%	7.41%	2.16%	9.57%	23.36%	32.93%	32.25%

1. UAAL Contribution Rate includes an offset of 3.00% of payroll to reflect the County Supplementary Contribution Account, except for Courts.

Exhibit 10b
Employer Statutory Contribution Rates – SMCM&VCD Members
For the 2021-2022 Fiscal Year

SMCM&VCD Members								
	Employer Rates							Prior Year Total Contribution Rate
	Gross Normal Cost	Member Contributions	Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾	Total Contribution Rate	
Plan 1 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 4	22.74%	(8.19)%	10.21%	4.34%	14.55%	0.39%	14.94%	14.61%
Plan 7	19.34%	(9.67)%	7.73%	1.94%	9.67%	0.39%	10.06%	9.24%
All Plans	21.22%	(8.85)%	9.10%	3.27%	12.37%	0.39%	12.76%	12.58%

1. UAAL Contribution Rate includes an offset of 25.83% of payroll to reflect the District Supplementary Contribution Account.
2. There are currently no active Plan 1 or Plan 2 members. Employer rates will be developed in the future if needed.

Exhibit 10c
Employer Statutory Contribution Rates – Safety Members
For the 2021-2022 Fiscal Year

Safety Members								
	Gross Normal Cost	Member Contributions	Employer Rates				Total Contribution Rate	Prior Year Total Contribution Rate
			Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾		
Plan 1 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2	40.73%	(19.42)%	15.02%	6.29%	21.31%	54.42%	75.73%	72.33%
Plan 4	38.39%	(19.46)%	14.64%	4.29%	18.93%	54.42%	73.35%	69.53%
Plan 5	38.06%	(19.29)%	14.59%	4.18%	18.77%	54.42%	73.19%	70.47%
Plan 6 ⁽²⁾	N/A	N/A	N/A	N/A	NA	NA	NA	NA
Plan 7	29.43%	(14.72)%	11.47%	3.24%	14.71%	54.42%	69.13%	66.15%
All Plans	35.30%	(17.73)%	13.52%	4.05%	17.57%	54.42%	71.99%	68.89%

1. UAAL Contribution Rate includes an offset of 6.14% of payroll to reflect the County Supplementary Contribution Account.
2. There are currently no active Safety Plan 1 or Plan 6 members. Employer rates will be developed in the future if needed.

Exhibit 10d
Employer Statutory Contribution Rates – Probation Members
For the 2021-2022 Fiscal Year

Probation Members								
	Gross Normal Cost	Member Contributions	Employer Rates				Total Contribution Rate	Prior Year Total Contribution Rate
			Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾		
Plan 1 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2	39.04%	(18.10)%	15.04%	5.90%	20.94%	47.68%	68.62%	62.52%
Plan 4	36.92%	(17.77)%	14.95%	4.20%	19.15%	47.68%	66.83%	61.10%
Plan 5	33.40%	(17.42)%	12.20%	3.78%	15.98%	47.68%	63.66%	59.05%
Plan 6 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 7	29.70%	(14.85)%	11.54%	3.31%	14.85%	47.68%	62.53%	57.52%
All Plans	35.51%	(17.21)%	14.19%	4.11%	18.30%	47.68%	65.98%	60.52%

1. UAAL Contribution Rate includes an offset of 6.28% of payroll to reflect the County Supplementary Contribution Account.
2. There are currently no active Probation Plan 1 or Plan 6 members. Employer rates will be developed in the future if needed.

Exhibit 11
Calculated Gross Normal Cost Rates

All Plans					
Plan	Normal Cost				Total Gross Normal Cost
	Service Retirement	Disability Retirement	Death Benefits while Active	Termination Benefits	
General Plan 1	20.19%	1.96%	0.28%	4.37%	26.80%
General Plan 2	16.97%	1.58%	0.31%	4.48%	23.34%
General Plan 3	7.86%	0.00%	0.00%	0.65%	8.51%
General Plan 4	17.34%	1.68%	0.31%	4.11%	23.44%
General Plan 5	16.14%	1.98%	0.33%	3.20%	21.65%
General Plan 7	13.04%	1.72%	0.25%	2.48%	17.49%
General Total	15.39%	1.69%	0.28%	3.39%	20.75%
SMCM&VCD Plan 1	N/A	N/A	N/A	N/A	N/A
SMCM&VCD Plan 2	N/A	N/A	N/A	N/A	N/A
SMCM&VCD Plan 4	17.42%	1.67%	0.26%	3.39%	22.74%
SMCM&VCD Plan 7	14.44%	1.85%	0.38%	2.67%	19.34%
SMCM&VCD Total	16.09%	1.75%	0.31%	3.07%	21.22%
Safety Plan 1	N/A	N/A	N/A	N/A	N/A
Safety Plan 2	31.97%	4.54%	0.47%	3.75%	40.73%
Safety Plan 4	29.70%	4.85%	0.41%	3.43%	38.39%
Safety Plan 5	28.16%	6.47%	0.42%	3.01%	38.06%
Safety Plan 6	N/A	N/A	N/A	N/A	N/A
Safety Plan 7	21.50%	5.24%	0.34%	2.35%	29.43%
Safety Total	26.73%	5.17%	0.39%	3.01%	35.30%
Probation Plan 1	N/A	N/A	N/A	N/A	N/A
Probation Plan 2	31.68%	3.62%	0.37%	3.37%	39.04%
Probation Plan 4	29.33%	3.88%	0.33%	3.38%	36.92%
Probation Plan 5	26.16%	4.17%	0.31%	2.76%	33.40%
Probation Plan 6	N/A	N/A	N/A	N/A	N/A
Probation Plan 7	22.56%	4.33%	0.29%	2.52%	29.70%
Probation Total	28.04%	3.96%	0.32%	3.19%	35.51%
All Plans	17.28%	2.20%	0.29%	3.34%	23.11%

Exhibit 12a
UAAL Amortization Detail – General Members

(Dollars in Thousands)

Unfunded Actuarial Liability Amortization Detail							
Date Established	Description	Balance as of June 30, 2020	Interest on Balance	Amortization Payment on June 30, 2021	Balance as of June 30, 2021	Remaining Period as of June 30, 2021	July 1, 2021 Amortization Payment
June 30, 2008	Initial UAAL	\$ 149,558	\$ 9,721	\$ 54,877	\$ 104,402	2 Years	\$ 54,040
June 30, 2009	(Gain) / Loss	\$ 174,671	\$ 11,354	\$ 48,863	\$ 137,162	3 Years	\$ 48,118
June 30, 2010	(Gain) / Loss	\$ (74,206)	\$ (4,823)	\$ (16,880)	\$ (62,150)	4 Years	\$ (16,622)
June 30, 2011	(Gain) / Loss	\$ (24,613)	\$ (1,600)	\$ (4,742)	\$ (21,471)	5 Years	\$ (4,669)
June 30, 2012	(Gain) / Loss	\$ 82,202	\$ 5,343	\$ 13,794	\$ 73,751	6 Years	\$ 13,584
June 30, 2013	(Gain) / Loss	\$ 16,442	\$ 1,069	\$ 2,453	\$ 15,057	7 Years	\$ 2,416
June 30, 2014	(Gain) / Loss	\$ (36,482)	\$ (2,371)	\$ (4,916)	\$ (33,937)	8 Years	\$ (4,841)
June 30, 2015	(Gain) / Loss	\$ (28,218)	\$ (1,834)	\$ (3,477)	\$ (26,576)	9 Years	\$ (3,424)
June 30, 2016	(Gain) / Loss	\$ 92,240	\$ 5,996	\$ 10,496	\$ 87,740	10 Years	\$ 10,336
June 30, 2017	(Gain) / Loss	\$ 66,553	\$ 4,326	\$ 7,051	\$ 63,827	11 Years	\$ 6,944
June 30, 2018	(Gain) / Loss	\$ (21,249)	\$ (1,381)	\$ (2,111)	\$ (20,519)	12 Years	\$ (2,079)
June 30, 2019	(Gain) / Loss	\$ 228,017	\$ 14,821	\$ 21,359	\$ 221,479	13 Years	\$ 21,034
June 30, 2020	(Gain) / Loss	\$ 62,584	\$ 4,068	\$ 2,538	\$ 64,114	14 Years	\$ 5,742
Total Amortization Payment July 1, 2021:							\$ 130,578
Projected Payroll July 1, 2021:							\$ 498,020
UAAL as of June 30, 2020:		<u>\$ 687,498</u>	UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2021:				<u>26.22%</u>

Notes:

- Amortization Payments are based on a fixed schedule that increases by the payroll assumption each year.
- The calculation of UAAL is as of June 30, 2020; whereas, the contribution rates are effective as of July 1, 2021. The June 30, 2020 UAAL is adjusted to June 30, 2021 based on the July 1, 2020 contribution rates and June 30, 2020 valuation assumptions.
- (Gain)/Loss includes new assumptions adopted in each of the following valuations: 2011, 2012, 2014, 2016, 2017, 2019, and 2020.

Exhibit 12b
UAAL Amortization Detail – Safety Members

(Dollars in Thousands)

Unfunded Actuarial Liability Amortization Detail							
Date Established	Description	Balance as of June 30, 2020	Interest on Balance	Amortization Payment on June 30, 2021	Balance as of June 30, 2021	Remaining Period as of June 30, 2021	July 1, 2021 Amortization Payment
June 30, 2008	Initial UAAL	\$ 54,578	\$ 3,548	\$ 20,026	\$ 38,099	2 Years	\$ 19,721
June 30, 2009	(Gain) / Loss	\$ 64,059	\$ 4,164	\$ 17,920	\$ 50,303	3 Years	\$ 17,647
June 30, 2010	(Gain) / Loss	\$ (27,758)	\$ (1,804)	\$ (6,314)	\$ (23,248)	4 Years	\$ (6,218)
June 30, 2011	(Gain) / Loss	\$ (11,415)	\$ (742)	\$ (2,199)	\$ (9,958)	5 Years	\$ (2,166)
June 30, 2012	(Gain) / Loss	\$ 24,440	\$ 1,589	\$ 4,101	\$ 21,927	6 Years	\$ 4,039
June 30, 2013	(Gain) / Loss	\$ 4,808	\$ 312	\$ 717	\$ 4,403	7 Years	\$ 706
June 30, 2014	(Gain) / Loss	\$ (14,679)	\$ (954)	\$ (1,978)	\$ (13,655)	8 Years	\$ (1,948)
June 30, 2015	(Gain) / Loss	\$ (7,859)	\$ (511)	\$ (968)	\$ (7,401)	9 Years	\$ (954)
June 30, 2016	(Gain) / Loss	\$ 24,869	\$ 1,616	\$ 2,830	\$ 23,655	10 Years	\$ 2,787
June 30, 2017	(Gain) / Loss	\$ 18,464	\$ 1,200	\$ 1,956	\$ 17,708	11 Years	\$ 1,926
June 30, 2018	(Gain) / Loss	\$ (5,162)	\$ (336)	\$ (513)	\$ (4,985)	12 Years	\$ (505)
June 30, 2019	(Gain) / Loss	\$ 64,657	\$ 4,203	\$ 6,057	\$ 62,803	13 Years	\$ 5,964
June 30, 2020	(Gain) / Loss	\$ 19,641	\$ 1,277	\$ (311)	\$ 21,229	14 Years	\$ 1,901
Total Amortization Payment July 1, 2021:							\$ 42,901
Projected Payroll July 1, 2021:							\$ 70,837
UAAL as of June 30, 2020:		\$ 208,641	UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2021:				60.56%

Notes:

- Amortization Payments are based on a fixed schedule that increases by the payroll assumption each year.
- The calculation of UAAL is as of June 30, 2020; whereas, the contribution rates are effective as of July 1, 2021. The June 30, 2020 UAAL is adjusted to June 30, 2021 based on the July 1, 2020 contribution rates and June 30, 2020 valuation assumptions.
- (Gain)/Loss includes new assumptions adopted in each of the following valuations: 2011, 2012, 2014, 2016, 2017, 2019, and 2020.

Exhibit 12c
UAAL Amortization Detail – Probation Members

(Dollars in Thousands)

Unfunded Actuarial Liability Amortization Detail							
Date Established	Description	Balance as of June 30, 2020	Interest on Balance	Amortization Payment on June 30, 2021	Balance as of June 30, 2021	Remaining Period as of June 30, 2021	July 1, 2021 Amortization Payment
June 30, 2008	Initial UAAL	\$ 13,675	\$ 889	\$ 5,018	\$ 9,546	2 Years	\$ 4,941
June 30, 2009	(Gain) / Loss	\$ 16,123	\$ 1,048	\$ 4,510	\$ 12,660	3 Years	\$ 4,441
June 30, 2010	(Gain) / Loss	\$ (6,775)	\$ (440)	\$ (1,541)	\$ (5,674)	4 Years	\$ (1,518)
June 30, 2011	(Gain) / Loss	\$ (2,619)	\$ (170)	\$ (504)	\$ (2,284)	5 Years	\$ (497)
June 30, 2012	(Gain) / Loss	\$ 8,241	\$ 536	\$ 1,383	\$ 7,394	6 Years	\$ 1,362
June 30, 2013	(Gain) / Loss	\$ 1,227	\$ 80	\$ 183	\$ 1,124	7 Years	\$ 180
June 30, 2014	(Gain) / Loss	\$ (2,967)	\$ (193)	\$ (400)	\$ (2,760)	8 Years	\$ (394)
June 30, 2015	(Gain) / Loss	\$ (2,119)	\$ (138)	\$ (261)	\$ (1,996)	9 Years	\$ (257)
June 30, 2016	(Gain) / Loss	\$ 10,174	\$ 661	\$ 1,158	\$ 9,678	10 Years	\$ 1,140
June 30, 2017	(Gain) / Loss	\$ 9,629	\$ 626	\$ 1,020	\$ 9,235	11 Years	\$ 1,005
June 30, 2018	(Gain) / Loss	\$ (1,741)	\$ (113)	\$ (173)	\$ (1,681)	12 Years	\$ (170)
June 30, 2019	(Gain) / Loss	\$ 24,491	\$ 1,592	\$ 2,294	\$ 23,788	13 Years	\$ 2,259
June 30, 2020	(Gain) / Loss	\$ 10,538	\$ 685	\$ (466)	\$ 11,689	14 Years	\$ 1,047
Total Amortization Payment July 1, 2021:							\$ 13,540
Projected Payroll July 1, 2021:							\$ 25,092
UAAL as of June 30, 2020:		\$ 77,875		UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2021:			53.96%

Notes:

- Amortization Payments are based on a fixed schedule that increases by the payroll assumption each year.
- The calculation of UAAL is as of June 30, 2020; whereas, the contribution rates are effective as of July 1, 2021. The June 30, 2020 UAAL is adjusted to June 30, 2021 based on the July 1, 2020 contribution rates and June 30, 2020 valuation assumptions.
- (Gain)/Loss includes new assumptions adopted in each of the following valuations: 2011, 2012, 2014, 2016, 2017, 2019, and 2020.

Exhibit 12d
Amortization Detail – County SCA Offsets
(Dollars in Thousands)

General Members							
Date Established	Description	Balance as of June 30, 2020	Interest on Balance	Amortization Payment on June 30, 2021	Balance as of June 30, 2021	Remaining Period as of June 30, 2021	July 1, 2021 Amortization Payment
June 30, 2014	Initial CSCA	\$ 30,953	\$ 2,012	\$ 4,171	\$ 28,794	8 Years	\$ 4,107
June 30, 2015	CSCA Addition	\$ 7,261	\$ 472	\$ 895	\$ 6,838	9 Years	\$ 881
June 30, 2016	CSCA Addition	\$ 13,552	\$ 881	\$ 1,542	\$ 12,891	10 Years	\$ 1,519
June 30, 2017	CSCA Addition	\$ 23,772	\$ 1,545	\$ 2,519	\$ 22,799	11 Years	\$ 2,480
June 30, 2018	CSCA Addition	\$ 20,380	\$ 1,325	\$ 2,024	\$ 19,680	12 Years	\$ 1,994
June 30, 2019	CSCA Addition	\$ 35,394	\$ 2,301	\$ 3,316	\$ 34,379	13 Years	\$ 3,265
June 30, 2020	CSCA Addition	\$ (919)	\$ (60)	\$ -	\$ (979)	14 Years	\$ (88)
Total CSCA County Offset Payment July 1, 2021:							\$ 14,158
Projected County Payroll July 1, 2021:							\$ 472,033
CSCA Value as of June 30, 2020:		\$ 130,393		CSCA County Offset (as a % of Payroll) FYB July 1, 2021:			3.00%

Safety Members							
Date Established	Description	Balance as of June 30, 2020	Interest on Balance	Amortization Payment on June 30, 2021	Balance as of June 30, 2021	Remaining Period as of June 30, 2021	July 1, 2021 Amortization Payment
June 30, 2014	Initial CSCA	\$ 10,489	\$ 682	\$ 1,413	\$ 9,757	8 Years	\$ 1,392
June 30, 2015	CSCA Addition	\$ 2,463	\$ 160	\$ 303	\$ 2,319	9 Years	\$ 299
June 30, 2016	CSCA Addition	\$ 4,111	\$ 267	\$ 468	\$ 3,910	10 Years	\$ 461
June 30, 2017	CSCA Addition	\$ 7,174	\$ 466	\$ 760	\$ 6,880	11 Years	\$ 748
June 30, 2018	CSCA Addition	\$ 6,305	\$ 410	\$ 626	\$ 6,089	12 Years	\$ 617
June 30, 2019	CSCA Addition	\$ 9,649	\$ 627	\$ 904	\$ 9,372	13 Years	\$ 890
June 30, 2020	CSCA Addition	\$ (618)	\$ (40)	\$ -	\$ (658)	14 Years	\$ (59)
Total CSCA County Offset Payment July 1, 2021:							\$ 4,348
Projected County Payroll July 1, 2021:							\$ 70,837
CSCA Value as of June 30, 2020:		\$ 39,572		CSCA County Offset (as a % of Payroll) FYB July 1, 2021:			6.14%

Probation Members							
Date Established	Description	Balance as of June 30, 2020	Interest on Balance	Amortization Payment on June 30, 2021	Balance as of June 30, 2021	Remaining Period as of June 30, 2021	July 1, 2021 Amortization Payment
June 30, 2014	Initial CSCA	\$ 2,853	\$ 185	\$ 384	\$ 2,654	8 Years	\$ 379
June 30, 2015	CSCA Addition	\$ 702	\$ 46	\$ 86	\$ 661	9 Years	\$ 85
June 30, 2016	CSCA Addition	\$ 1,434	\$ 93	\$ 163	\$ 1,364	10 Years	\$ 161
June 30, 2017	CSCA Addition	\$ 2,838	\$ 184	\$ 301	\$ 2,722	11 Years	\$ 296
June 30, 2018	CSCA Addition	\$ 2,126	\$ 138	\$ 211	\$ 2,053	12 Years	\$ 208
June 30, 2019	CSCA Addition	\$ 3,870	\$ 252	\$ 363	\$ 3,759	13 Years	\$ 357
June 30, 2020	CSCA Addition	\$ 958	\$ 62	\$ -	\$ 1,020	14 Years	\$ 91
Total CSCA County Offset Payment July 1, 2021:							\$ 1,577
Projected County Payroll July 1, 2021:							\$ 25,092
CSCA Value as of June 30, 2020:		\$ 14,780		CSCA County Offset (as a % of Payroll) FYB July 1, 2021:			6.28%

Notes:

- CSCA Offsets are based on a fixed schedule that increases by the payroll assumption each year.
- The calculation of CSCA amounts are as of June 30, 2020; whereas, the contribution rates are effective as of July 1, 2021. The June 30, 2020 CSCA is adjusted to June 30, 2021 based on the July 1, 2020 contribution rates and June 30, 2020 valuation assumptions.

Exhibit 12e
Amortization Detail – District SCA Offsets

(Dollars in Thousands)

Preliminary Offset Calculations							
Date Established	Description	Balance as of June 30, 2020	Interest on Balance	Amortization Payment on June 30, 2021	Balance as of June 30, 2021	Remaining Period as of June 30, 2021	July 1, 2021 Amortization Payment
June 30, 2016	Initial DSCA	\$ 1,309	\$ 85	\$ 457	\$ 938	2 Years	\$ 485
June 30, 2017	DSCA Addition	\$ 215	\$ 14	\$ 75	\$ 154	2 Years	\$ 80
June 30, 2018	DSCA Addition	\$ 3	\$ 0	\$ 1	\$ 2	2 Years	\$ 1
June 30, 2019	DSCA Addition	\$ 4	\$ 0	\$ 1	\$ 3	3 Years	\$ 1
June 30, 2020	DSCA Addition	\$ 0	\$ 0	\$ -	\$ 0	4 Years	\$ 0
Total DSCA Offset Payment July 1, 2021:							\$ 567
Projected District Payroll July 1, 2021:							\$ 2,197
DSCA Value as of June 30, 2020:		<u>\$ 1,531</u>		DSCA District Offset (as a % of Payroll) FYB July 1, 2021:			<u>25.83%</u>

Adjusted Offset Calculations							
Date Established	Description	Balance as of June 30, 2020	Interest on Balance	Amortization Payment on June 30, 2021	Balance as of June 30, 2021	Remaining Period as of June 30, 2021	July 1, 2021 Amortization Payment
June 30, 2016	Initial DSCA	\$ 1,309	\$ 85	\$ 457	\$ 938	2 Years	\$ 485
June 30, 2017	DSCA Addition	\$ 215	\$ 14	\$ 75	\$ 154	2 Years	\$ 80
June 30, 2018	DSCA Addition	\$ 3	\$ 0	\$ 1	\$ 2	2 Years	\$ 1
June 30, 2019	DSCA Addition	\$ 4	\$ 0	\$ 1	\$ 3	3 Years	\$ 1
June 30, 2020	DSCA Addition	\$ 0	\$ 0	\$ -	\$ 0	4 Years	\$ 0
Total DSCA Offset Payment July 1, 2021:							\$ 567
Projected District Payroll July 1, 2021:							\$ 2,197
DSCA Value as of June 30, 2020:		<u>\$ 1,531</u>		DSCA District Offset (as a % of Payroll) FYB July 1, 2021:			<u>25.83%</u>

Notes:

1. DSCA Offsets are based on a fixed schedule that increases by the payroll assumption each year.
2. The calculation of DSCA amounts are as of June 30, 2020; whereas, the contribution rates are effective as of July 1, 2021. The June 30, 2020 DSCA is adjusted to June 30, 2021 based on the July 1, 2020 contribution rates and June 30, 2020 valuation assumptions.
3. If the preliminary calculation of DSCA Offset results in a larger offset than the UAAL contribution rate payable by the District, the offset must be limited to the adjusted offset to prevent a negative UAAL contribution rate.

7. Supplemental Information

We are providing several exhibits in this report for consistency with prior reports and as supporting information for inclusion in SamCERA's CAFR.

- Exhibit 13 – Schedule of Funding Progress
- Exhibit 14 – Solvency Test
- Exhibit 15 – History of Employer Contribution Rates
- Exhibit 16 – Actuarial Analysis of Financial Experience
- Exhibit 17 – Summary of Significant Actuarial Statistics and Measures
- Exhibit 18 – Summary of SamCERA Membership
- Exhibit 19 – Summary of Active Member Valuation Data
- Exhibit 20 – Summary of Demographic Activity of Retirees and Beneficiaries
- Exhibit 21 – Average Salary and Active Counts by Employer

The Governmental Accounting Standards Board (GASB) Statement No. 67 sets standards for defined benefit pension plan reporting and disclosures. The reporting requirements for GASB 67 include certain supplementary information that must be added to the financial statements. GASB Statement No. 68 specifies financial reporting for pension accounting by state and local governmental employers. We will provide information required for GASB 67 and GASB 68 in a separate report.

All liability calculations shown in this Section 7 are based on an investment return assumption of 6.50%. GASB 67 and 68 calculations as of June 30, 2020 will use an investment return assumption of 6.67%, as the investment return for GASB 67 and 68 is required to be gross of expected administrative expenses.

Exhibit 13
Schedule of Funding Progress

(Dollars in Thousands)

<u>Actuarial Valuation Date</u>	<u>(a) Actuarial Value of Valuation Assets</u>	<u>(b) Actuarial Accrued Liabilities</u>	<u>(b-a) Unfunded Actuarial Accrued Liabilities (UAAL)</u>	<u>(a/b) Funded Ratio</u>	<u>(c) Covered Payroll</u>	<u>[(b-a)/c] UAAL as a Percentage of Covered Payroll</u>
June 30, 2011	\$ 2,405,140	\$ 3,246,727	\$ 841,587	74.1%	\$ 427,041	197.07%
June 30, 2012	2,480,271	3,442,553	926,282	72.0%	418,916	229.71%
June 30, 2013	2,618,639	3,572,750	954,111	73.3%	404,361	235.96%
June 30, 2014	2,993,187	3,797,042	803,855	78.8%	416,274	193.11%
June 30, 2015	3,343,550	4,045,786	702,236	82.6%	439,018	159.96%
June 30, 2016	3,624,726	4,362,296	737,570	83.1%	472,385	156.14%
June 30, 2017	3,976,717	4,719,850	743,133	84.3%	510,132	145.67%
June 30, 2018	4,351,502	4,970,535	619,033	87.5%	535,938	115.50%
June 30, 2019	4,685,502	5,459,978	774,476	85.8%	554,734	139.61%
June 30, 2020	4,998,316	5,786,054	787,738	86.4%	593,295	132.77%

Note: The Covered Payroll amounts are consistent with the GASB 67/68 Disclosure report.

Exhibit 14
Solvency Test

(Dollars in Thousands)

Actuarial Valuation Date	Valuation Assets	Actuarial Accrued Liabilities for			Portion of Actuarial Accrued Liabilities Covered by Assets		
		Active Member Contributions (A)	Retirees and Beneficiaries ⁽¹⁾ (B)	Active Members (Employer Financed Portion) (C)	(A)	(B)	(C)
June 30, 2011	\$ 2,405,140	\$ 485,126	\$ 1,866,219	\$ 895,382	100%	100%	6%
June 30, 2012	2,480,271	498,569	2,022,791	921,193	100%	98%	0%
June 30, 2013	2,618,639	534,276	2,157,590	880,884	100%	97%	0%
June 30, 2014	2,993,187	584,080	2,285,328	927,634	100%	100%	13%
June 30, 2015	3,343,550	628,287	2,451,544	965,955	100%	100%	27%
June 30, 2016	3,624,726	679,246	2,635,409	1,047,641	100%	100%	30%
June 30, 2017	3,976,717	735,102	2,811,651	1,173,097	100%	100%	37%
June 30, 2018	4,351,502	783,887	3,032,813	1,153,835	100%	100%	46%
June 30, 2019	4,685,502	769,137	3,369,094	1,321,747	100%	100%	41%
June 30, 2020	4,998,316	858,906	3,609,214	1,317,934	100%	100%	40%

1. Includes inactive members.

**Exhibit 15
History of Employer Statutory Contribution Rates**

Statutory Contribution Rates									
Valuation Year	General Members (County & Courts)			General Members (Nurses & UAPD)			General Members (SMCM&VCD)		
	Normal	UAAL	Total	Normal	UAAL	Total	Normal	UAAL	Total
2011	9.71%	16.41%	26.12%	8.70%	16.41%	25.11%	11.97%	16.41%	28.38%
2012	9.98%	20.17%	30.15%	8.96%	20.17%	29.13%	11.68%	20.17%	31.85%
2013	9.74%	22.35%	32.09%	8.92%	22.35%	31.27%	11.70%	22.35%	34.05%
2014	10.12%	20.27%	30.39%	9.14%	20.21%	29.35%	11.72%	21.16%	32.88%

Statutory Contribution Rates									
Valuation Year	General Members (County)			General Members (Courts)			General Members (SMCM&VCD)		
	Normal	UAAL	Total	Normal	UAAL	Total	Normal	UAAL	Total
2015	8.67%	18.37%	27.04%	9.04%	19.54%	28.58%	11.75%	19.54%	31.29%
2016	8.91%	19.81%	28.72%	9.09%	21.30%	30.39%	12.02%	12.50%	24.52%
2017	9.58%	20.55%	30.13%	9.65%	22.58%	32.23%	12.32%	12.37%	24.69%
2018	9.22%	19.32%	28.54%	9.27%	21.76%	31.03%	12.13%	0.00%	12.13%
2019	9.93%	22.18%	32.11%	10.01%	25.21%	35.22%	12.58%	0.00%	12.58%
2020	9.57%	23.22%	32.79%	9.63%	26.22%	35.85%	12.37%	0.39%	12.76%

Statutory Contribution Rates									
Valuation Year	Safety Member			Probation Members (excluding Managers)			Probation Members (Managers)		
	Normal	UAAL	Total	Normal	UAAL	Total	Normal	UAAL	Total
2011	18.87%	41.75%	60.62%	19.50%	22.30%	41.80%	Same as Probation (ex Managers)		
2012	19.05%	48.51%	67.56%	19.99%	26.71%	46.70%	Same as Probation (ex Managers)		
2013	18.51%	50.33%	68.84%	18.33%	29.32%	47.65%	17.85%	29.32%	47.17%
2014	18.99%	46.48%	65.47%	18.92%	28.09%	47.01%	18.79%	28.09%	46.88%
2015	15.14%	43.58%	58.72%	15.31%	26.77%	42.08%	17.23%	26.77%	44.00%
2016	16.31%	44.25%	60.56%	15.94%	31.72%	47.66%	Same as Probation (ex Managers)		
2017	17.28%	45.57%	62.85%	17.42%	32.87%	50.29%	Same as Probation (ex Managers)		
2018	16.98%	44.68%	61.66%	16.95%	32.88%	49.83%	Same as Probation (ex Managers)		
2019	18.02%	50.87%	68.89%	17.97%	42.55%	60.52%	Same as Probation (ex Managers)		
2020	17.57%	54.42%	71.99%	18.30%	47.68%	65.98%	Same as Probation (ex Managers)		

Notes:

1. Contribution rates shown are those calculated in the corresponding actuarial valuation. In some cases, actual contributions were higher.
2. Beginning with the 2010 actuarial valuation, the Mosquito and Vector Control District adopted the same benefit formula and member contribution rates as Plan 1, 2 & 4 General County members (excluding cost sharing and COLA sharing on member rates).
3. Beginning with the 2011 actuarial valuation, Plan 1, 2, and 4 members of the CNA contribute 25% of the cost of COLA, in addition to current member rates and cost sharing.
4. Beginning with the 2012 actuarial valuation, Plan 1, 2, and 4 Probation members (excluding Managers) contribute 25% of the cost of COLA, in addition to current member rates and cost sharing.
5. Beginning with the 2013 actuarial valuation, Plan 1, 2, and 4 members of the UAPD contribute 25% of the cost of COLA, in addition to current member rates and cost sharing. In 2011 and 2012 these members contributed the same as County General members.
6. Beginning with the 2015 actuarial valuation, Plan 1, 2, and 4 members of the UAPD and the CNA, and Probation members (Managers) contribute 50% of the cost of COLA, in addition to current member rates and cost sharing.
7. Effective with the first pay period after June 30, 2016 all members (except those with benefits negotiated under Court Interpreters and Board of Supervisors bargaining units, and SMCM&VCD members) contribute 50% of the cost of COLA, in addition to current member rates and cost sharing. Additionally, pick-up contributions are discontinued for members with benefits negotiated under the PDA bargaining unit.
8. Effective October 2016, all members (except those with benefits negotiated under Board of Supervisors bargaining unit, and SMCM&VCD members) contribute 50% of the cost of COLA, in addition to current member rates and cost sharing. This is reflected in 2016 values.
9. Effective July 1, 2018, the Board of Supervisors contribute 50% of the cost of COLA, in addition to current member rates and cost sharing. Additionally, pick-up contributions were eliminated.

Exhibit 16
Actuarial Analysis of Financial Experience

Summary of (Gains) / Losses	Change In Liability				
	2020	2019	2018	2017	2016
Unfunded Liability as of July 1	\$ 774,476,000	\$ 619,033,000	\$ 743,133,000	\$ 737,570,000	\$ 702,236,000
Expected Change in UAAL	(85,527,000)	(153,261,000)	(109,756,000)	(110,404,000)	(96,454,000)
Salary (Gain) / Loss	25,190,000	50,472,000	10,401,000	27,685,000	24,707,000
Retiree COLA more / (less) than expected	18,992,000	21,749,000	12,203,000	7,050,000	(6,275,000)
Asset (Gain) / Loss	15,884,000	46,909,000	(42,796,000)	(28,286,000)	27,821,000
Change due to Assumption Changes	11,593,000	173,944,000	0	133,221,000	89,364,000
Miscellaneous Experience	27,129,000	15,630,000	5,848,000	(23,703,000)	(3,829,000)
Change Due to New Formula					
Unfunded Liability as of June 30	\$ 787,737,000	\$ 774,476,000	\$ 619,033,000	\$ 743,133,000	\$ 737,570,000

Exhibit 17
Summary of Significant Actuarial Statistics and Measures

	June 30th of		Relative
	2020	2019	Change
1. Active Members			
Number of Members	5,400	5,377	0.4 %
Average Age	45.0	45.1	(0.2)%
Average Credited Service	10.3	10.4	(1.0)%
Covered Payroll (\$thousands)	\$ 593,295	\$ 554,734	7.0 %
Average Monthly Salary	\$ 9,176	\$ 8,873	3.4 %
2. Retired Members			
Number of Members			
Service Retirement	4,292	4,133	3.8 %
Disability Retirement	506	487	3.9 %
Beneficiaries	656	605	8.4 %
Average Age	71.3	71.2	0.1 %
Actual Retiree Benefits Paid (\$thousands)	\$ 242,025	\$ 223,614	8.2 %
Average Monthly Pension	\$ 3,865	\$ 3,731	3.6 %
3. Number of Inactive Members			
	1,882	1,767	6.5 %
4. Assets			
Market Value of Fund (\$thousands)	\$ 4,780,502	\$ 4,723,110	1.2 %
Return on Market Value	0.9%	6.2%	
Valuation Assets (\$thousands)	\$ 4,998,316	\$ 4,685,502	6.7 %
Return on Valuation Assets	6.2%	5.6%	
5. Liability Values (\$thousands)			
Actuarial Accrued Liability	\$ 5,786,054	\$ 5,459,978	6.0 %
Unfunded Actuarial Accrued Liability	\$ 787,738	\$ 774,476	1.7%
Deferred Asset (Gains) / Losses	\$ 268,302	\$ 9,720	
6. Funded Ratio			
(based on valuation assets)	86.4%	85.8%	0.7 %

Exhibit 18
Summary of SamCERA Membership

Plan	One	Two	Three	Four	Five	Six	Seven	Total
Retirees and beneficiaries currently receiving benefits:								
General	1,299	2,113	144	970	12	-	12	4,550
Safety	266	242	-	119	3	-	2	632
Probation	95	117	-	59	-	-	1	272
Subtotal	<u>1,660</u>	<u>2,472</u>	<u>144</u>	<u>1,148</u>	<u>15</u>	<u>-</u>	<u>15</u>	<u>5,454</u>
Inactive employees entitled to but not currently receiving benefits (Deferred):								
General	6	249	70	775	97	-	531	1,728
Safety	1	15	-	45	9	-	20	90
Probation	-	16	-	39	1	-	8	64
Subtotal	<u>7</u>	<u>280</u>	<u>70</u>	<u>859</u>	<u>107</u>	<u>-</u>	<u>559</u>	<u>1,882</u>
Current employees:								
Vested:								
General	5	408	52	1,730	177	-	495	2,867
Safety	-	30	-	197	44	-	62	333
Probation	-	12	-	149	8	-	17	186
Non-Vested:								
General	-	1	4	9	106	-	1,668	1,788
Safety	-	-	-	1	19	-	169	189
Probation	-	-	-	-	-	-	37	37
Subtotal	<u>5</u>	<u>451</u>	<u>56</u>	<u>2,086</u>	<u>354</u>	<u>-</u>	<u>2,448</u>	<u>5,400</u>
Total SamCERA Membership	1,672	3,203	270	4,093	476	-	3,022	12,736

Exhibit 19
Summary of Active Member Valuation Data

Valuation Date		Members	Annual Salary	Average Annual Salary	% Change Average Salary
2011	General	4,494	\$355,876,715	\$79,189	0.5%
	Safety	446	52,073,940	116,758	2.2%
	Probation	305	24,591,392	80,628	0.0%
	Total	5,245	432,542,046	82,468	0.9%
2012	General	4,361	351,965,689	80,708	1.9%
	Safety	435	51,129,267	117,539	0.7%
	Probation	299	24,554,583	82,122	1.9%
	Total	5,095	427,649,539	83,935	1.8%
2013	General	4,173	338,595,633	81,140	2.5%
	Safety	452	52,233,510	115,561	-1.0%
	Probation	292	23,722,165	81,240	0.8%
	Total	4,917	414,551,308	84,310	2.2%
2014	General	4,272	352,918,558	82,612	1.8%
	Safety	452	52,974,475	117,200	1.4%
	Probation	280	23,514,343	83,980	3.4%
	Total	5,004	429,407,375	85,813	1.8%
2015	General	4,334	382,303,295	88,210	6.8%
	Safety	479	55,917,864	116,739	-0.4%
	Probation	282	24,418,977	86,592	3.1%
	Total	5,095	462,640,136	90,803	5.8%
2016	General	4,421	408,191,518	92,330	4.7%
	Safety	495	61,564,028	124,372	6.5%
	Probation	271	24,034,819	88,689	2.4%
	Total	5,187	493,790,365	95,198	4.8%
2017	General	4,560	430,613,886	94,433	2.3%
	Safety	503	65,105,116	129,434	4.1%
	Probation	274	26,503,623	96,729	9.1%
	Total	5,337	522,222,625	97,849	2.8%
2018	General	4,603	448,931,595	97,530	3.3%
	Safety	508	66,799,289	131,495	1.6%
	Probation	256	25,741,800	100,554	4.0%
	Total	5,367	541,472,684	100,889	3.1%
2019	General	4,610	476,944,186	103,459	6.1%
	Safety	530	70,890,519	133,756	1.7%
	Probation	237	24,680,991	104,139	3.6%
	Total	5,377	572,515,696	106,475	5.5%
2020	General	4,655	496,992,584	106,765	3.2%
	Safety	522	72,724,015	139,318	4.2%
	Probation	223	24,856,263	111,463	7.0%
	Total	5,400	594,572,862	110,106	3.4%

Exhibit 20
Summary of Demographic Activity of Retirees and Beneficiaries

Year Ended	Added to Rolls ⁽¹⁾		Removed from Rolls		Rolls end of year		% Increase in Payroll	Average Monthly Allowances
	No.	Annual Allowances in Thousands	No.	Annual Allowances in Thousands	No.	Total Retiree Payroll in Thousands		
June 30, 2011 ⁽²⁾	209	\$ 12,703	64	\$ 2,916	4,147	\$ 134,675	7.8	2,706
June 30, 2012	218	14,379	90	4,209	4,275	144,845	7.6	2,823
June 30, 2013	186	13,024	63	3,095	4,398	154,774	6.9	2,933
June 30, 2014	203	12,474	83	3,479	4,518	163,769	5.8	3,021
June 30, 2015	213	16,290	93	4,179	4,638	175,880	7.4	3,160
June 30, 2016	233	15,347	123	5,030	4,748	186,197	5.9	3,268
June 30, 2017	310	16,738	102	3,867	4,956	199,068	6.9	3,347
June 30, 2018	315	21,360	162	5,242	5,109	215,186	8.1	3,510
June 30, 2019	306	24,547	190	5,769	5,225	233,964	8.7	3,731
June 30, 2020	362	23,862	133	4,862	5,454	252,963	8.1	3,865

1. Amount added to rolls includes COLAs granted in year to continuing retirees and beneficiaries.

2. Revised from June 30, 2011 valuation for corrections.

Exhibit 21
Average Salary and Active Counts by Employer

Schedule of Average Monthly Salary of Active Members
(By Plan and Membership Type)

	2020	2019	2018	2017	2016
General Plan 1	\$11,102	\$9,793	\$10,121	\$11,305	\$9,945
General Plan 2	10,665	10,088	9,526	8,994	8,636
General Plan 3	8,221	7,872	7,462	7,484	7,173
General Plan 4	9,671	9,302	8,534	8,134	7,807
General Plan 5	10,635	10,180	9,672	8,980	8,485
General Plan 7	7,726	7,395	6,974	6,737	6,714
General Plan Total	8,897	8,622	8,128	7,869	7,694
Safety Plan 1	0	0	0	14,434	15,810
Safety Plan 2	15,125	14,197	13,607	13,528	12,505
Safety Plan 4	13,204	12,391	11,894	11,381	10,729
Safety Plan 5	12,367	11,708	11,349	10,544	9,940
Safety Plan 6	0	0	0	0	16,793
Safety Plan 7	9,581	9,030	8,747	8,356	7,538
Safety Plan Total	11,610	11,146	10,958	10,786	10,364
Probation Plan 1	0	0	0	7,722	7,261
Probation Plan 2	10,174	9,908	9,061	9,069	8,349
Probation Plan 4	9,827	9,103	8,714	8,270	7,454
Probation Plan 5	9,343	8,587	8,219	7,612	6,429
Probation Plan 6	0	0	0	7,347	6,259
Probation Plan 7	7,598	6,973	6,676	6,121	5,962
Probation Plan Total	9,289	8,678	8,379	8,061	7,391
Grand Total	9,176	8,873	8,407	8,154	7,933

Participating Employers and Active Members

	2020	2019	2018	2017	2016
<i>County of San Mateo</i>					
General Members	4,379	4,350	4,343	4,303	4,170
Safety Members	522	530	508	503	495
Probation Members	223	237	256	274	271
Total	5,124	5,117	5,107	5,080	4,936
<i>San Mateo County Mosquito and Vector Control District</i>					
General Members Total	20	20	21	20	20
<i>Courts</i>					
General Members Total	256	240	239	237	231
Total Active Membership	5,400	5,377	5,367	5,337	5,187

8. Risk Discussion

Overview

The results of any actuarial valuation are based on one set of reasonable assumptions. Although we believe the current assumptions provide a reasonable estimate of future expectations, it is almost certain that future experience will differ from the assumptions to some extent. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the Plan, or of the Plan's members.

Actuarial Standard of Practice No. 51 (ASOP 51) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the Plan.
- Assess the risks identified as significant to the Plan. The assessment does not need to include numerical calculations.
- Disclose plan maturity measures and historical information that are significant to understanding the Plan's risks.

ASOP 51 states that if in the actuary's professional judgment, a more detailed assessment would be significantly beneficial in helping the individuals responsible for the Plan to understand the risks identified by the actuary, then the actuary should recommend that such an assessment be performed.

In addition, the California Actuarial Advisory Panel (CAAP) has adopted a set of model disclosure elements for actuarial valuation reports of public retirement systems in California. Most of these elements are included in other areas of this report. The remaining CAAP-recommended disclosures are as follows:

Disclosure Element	Description	Value
Gross Normal Cost \$	Normal Cost allocated to valuation year, paid at mid-year.	\$ 135,247,893
Statutory Contribution \$	Expected Statutory Contribution paid at mid-year.	\$ 227,715,080
Asset Smoothing Ratio	Actuarial Value of Assets divided by Market Value of Assets	104.6%
Asset Volatility Ratio	Market Value of Assets divided by Payroll	8.2
Liability Volatility Ratio	Actuarial Accrued Liability divided by Payroll	9.9

This Section 8 uses the framework of ASOP 51 and the Asset and Liability Volatility Ratios shown above to communicate important information about: significant risks to the Plan, the Plan's maturity, and relevant historical plan data.

Factors Affecting Future Results

There are a number of factors that affect future valuation results. To the extent actual experience for these factors varies from the assumptions, this will likely cause either increases or decreases in the plan's future funding level and employer Statutory Contribution Rates (SCR). The factors that can have the most significant impact on SamCERA's valuation results are:

- Investment returns

To the extent that actual investment returns differ from the assumed investment return, the Plan's future assets, SCR, and funded status may differ significantly from those presented in this valuation. Additional discussion of the impact of variance of investment returns is included below.

- Compensation increases

Individual member retirement benefits are linked to that member's compensation. As such, assumptions need to be made as to a member's future compensation increases. Higher future compensation increases will generally result in larger retirement benefits, liabilities, SCRs, and a lower funded status. Conversely, lower compensation increases than assumed will generally result in smaller retirement benefits, liabilities, SCRs, and a higher funded status.

- Payroll variation

In the valuation, an assumption is made for the overall rate of payroll growth of SamCERA from year-to-year. To the extent that the overall rate of payroll growth is greater than assumed, the SCR may decrease since the Unfunded Actuarial Accrued Liability (UAAL) will be amortized over a larger payroll base. The opposite will occur if the overall rate of payroll growth is lower than assumed.

This effect often will offset somewhat with individual compensation increases, discussed above.

- Longevity and other demographic risks

The liabilities reported in this valuation have been calculated by assuming that members will follow specific patterns of demographic experience (e.g. mortality, retirement, termination, disability) as described in Appendix A. To the extent that actual demographic is different than are assumed to occur, future liabilities, SCRs, and funded status may differ from that presented in this valuation.

All of these assumptions are reviewed in detail during the triennial Investigation of Experience study, and are also reviewed annually during the valuation process. Changes in assumptions are generally recommended as part of the triennial Investigation of Experience if actual experience has been materially different than assumed or forecasts have been changed significantly. Additionally, changes may be recommended and discussed at each valuation if they are deemed to be appropriate at that time.

Asset and Liability Volatility Ratios

Asset and Liability Volatility Ratios are a measure of the level of assets (or liabilities) to payroll. In general, a higher ratio means that the SCR is more sensitive to changes in levels of assets or liabilities. Asset and Liability Volatility Ratios are shown in Exhibit 22.

As shown above, in the current valuation SamCERA has an Asset Volatility Ratio of 8.2 and a Liability Volatility Ratio of 9.9.

Discussion of Investment Return Risk

Of these factors, we believe the factor with the greatest potential risk to impact future valuation results for SamCERA is future investment returns. For example, if actual returns fall short of the current assumption of 6.5% per year, this

will cause an increase in the SCR and a decrease in the Funded Ratio, all other things being equal. Conversely, if actual returns exceed the current assumption of 6.5% per year, this will cause a decrease in the SCR and an increase in the Funded Ratio.

The magnitude of the increase or decrease in the SCR is affected by the maturity level, and specifically the asset volatility ratio. SamCERA has accumulated a significant amount of assets relative to its payroll and by several measures is considered a mature plan. Accumulating assets to pay for future benefit obligations is responsible funding, but it does mean changes in the investment markets can have a significant impact on the SCR.

In terms of the SCR, for SamCERA with an 8.2 asset volatility ratio, a 10% investment gain or loss relative to the assumed 6.50% investment return assumption (that is, an investment return of -3.5%, or of 16.5% investment return translates to a 7.70% of pay increase (or decrease) in the SCR, all other things being equal. Since SamCERA uses actuarial smoothing, the increase would not be immediate, but would occur gradually over five years and could potentially be offset, or further increased, by future investment gains or losses or other factors.

In terms of the Funded Ratio, this level of volatility would result in an increase or decrease of approximately 8.8% in the Funded Ratio (on a market value basis) from the current Funded Ratio of 86.4%.

Over the last several years, the County has been able to reduce the year-to-year variation in its actual contribution rate by contributing at a rate that is higher than the SCR.

Historical Variation in Statutory Contribution Rate

One way to assess future risks is to look at historical measurements. The following graph shows how the SCR has varied over the last 20 years under various investment return and assumption environments.

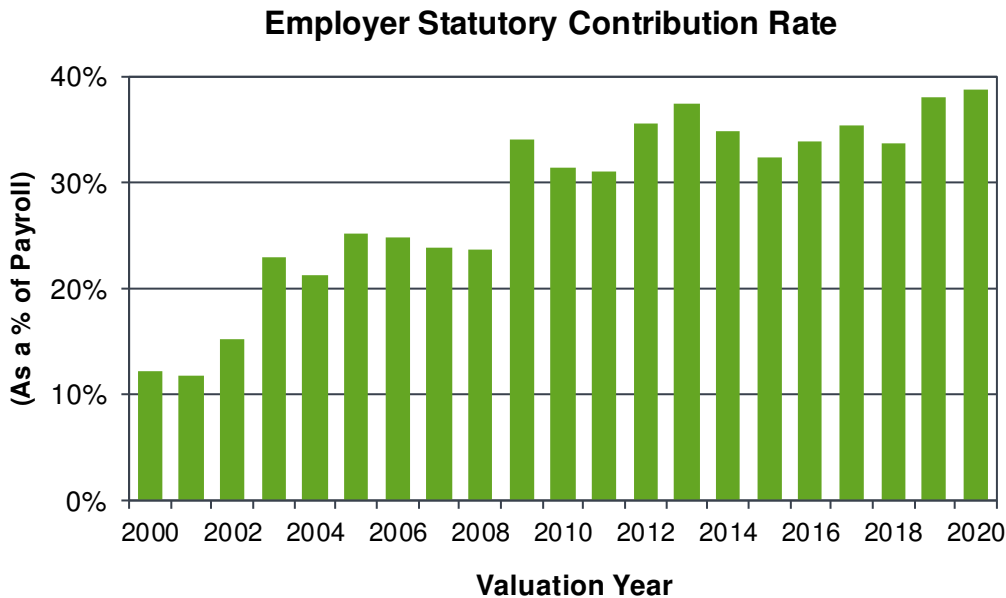
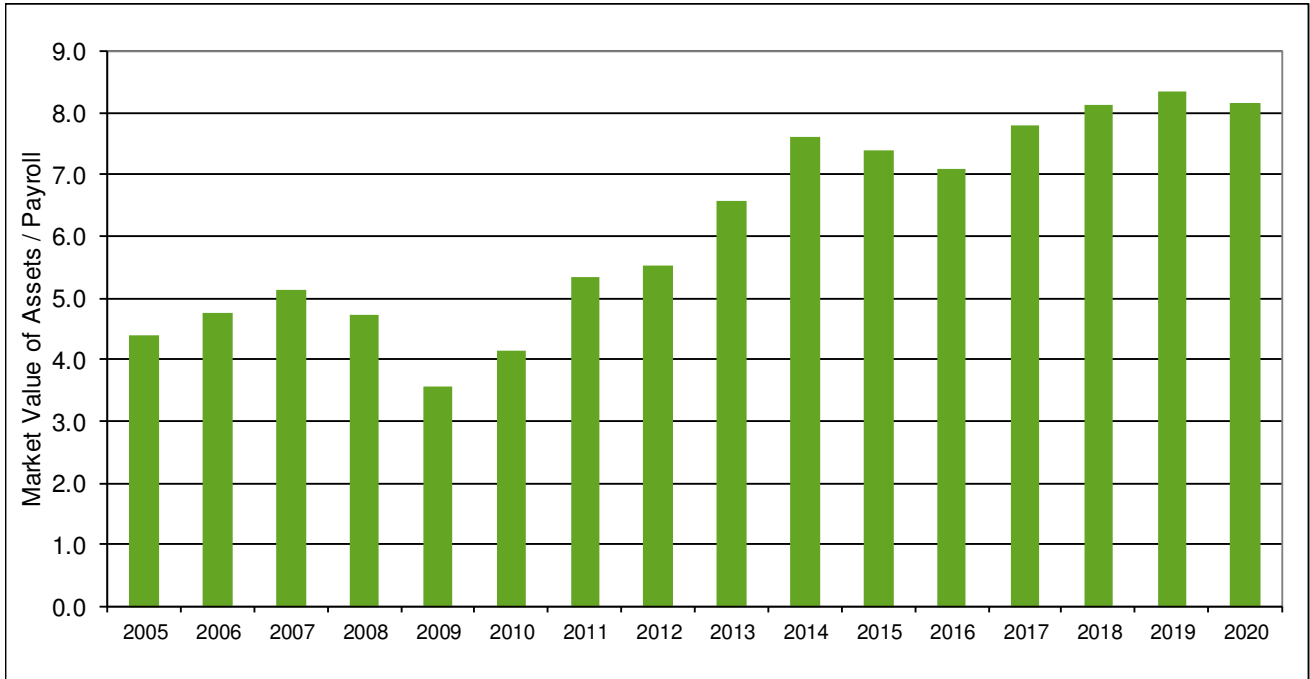
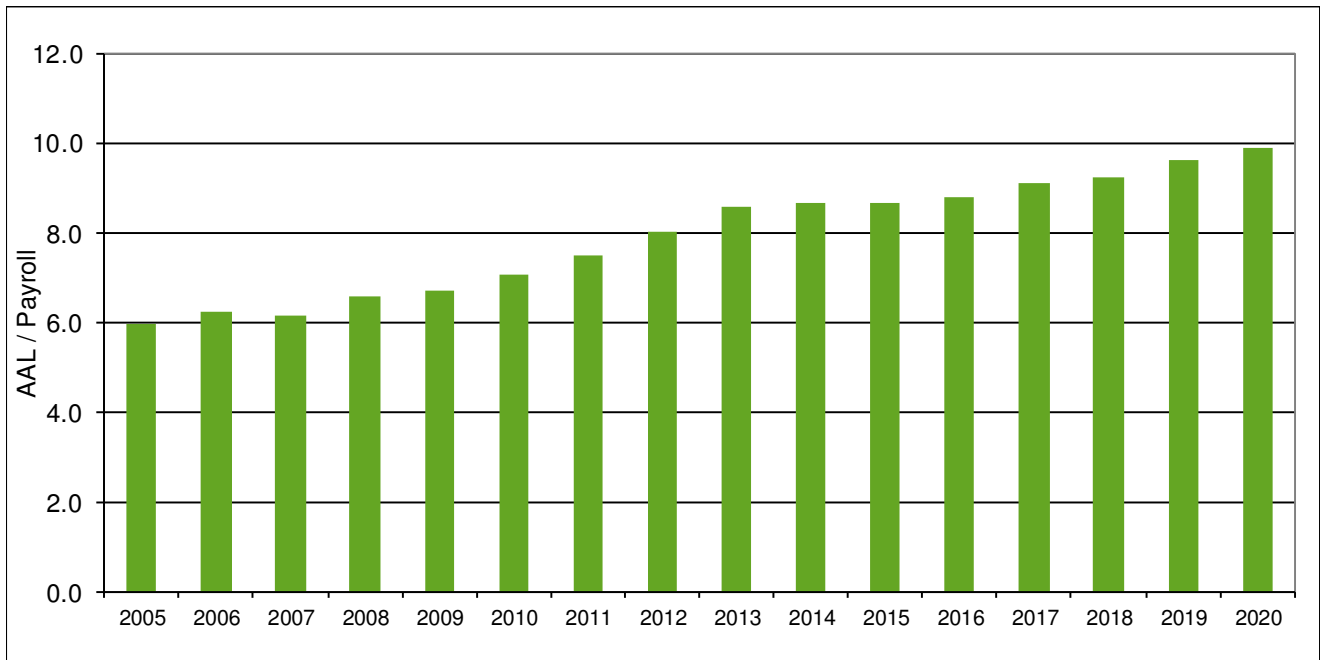


Exhibit 22
Asset and Liability Volatility Ratios

Asset Volatility Ratios



Liability Volatility Ratios



Appendix A Actuarial Procedures and Assumptions

The actuarial procedures and assumptions to be used in the June 30, 2020 valuation are described in this section. The assumptions were reviewed and changed as a result of the 2020 Investigation of Experience Study.

The actuarial assumptions used in the valuations are intended to estimate the future experience of the members of SamCERA and of SamCERA itself in areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of SamCERA's benefits.

Exhibit A-1 summarizes the assumptions. The mortality rates are taken from the sources listed.

Exhibits A-2 and A-3 show how members are expected to leave retired status due to death.

Exhibit A-4 presents the probability of refund of contributions upon termination of employment while vested.

Exhibit A-5 presents the expected annual percentage increase in salaries.

Exhibits A-6 to A-11 present the probabilities a member will leave employment for various reasons.

NOTE: Assumptions for Probation members are assumed to be the same as Safety members unless otherwise noted.

Actuarial Cost Method

The actuarial valuation is prepared using the entry age actuarial cost method (CERL 31453.5). Under the principles of this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit (until maximum retirement age).

For members who transferred from Plan 3 to another General plan, entry age is based on the transfer date.

The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets, and (b) the actuarial present value of future normal costs is called the Unfunded Actuarial Accrued Liability (UAAL). The UAAL as of June 30, 2008 is amortized as a level percentage of the projected salaries of present and future members of SamCERA over the remaining period from the valuation date to June 30, 2023. This is commonly referred to as a "closed amortization method". Actuarial gains and losses after the June 30, 2008 valuation are amortized over new closed 15-year periods from their respective valuation dates.

The SCA (CSCA for the County UAAL and DSCA for the SMCM&VCD) offset amounts are calculated using a similar closed amortization method to the UAAL rate described above. However, effective with the June 30, 2018 valuation, the DSCA balance is amortized over five years. All layers are re-amortized as of June 30, 2018, and any future layers are amortized over new five-year periods. The total DSCA offset amount in a given year is limited to the SMCM&VCD UAAL rate, and the DSCA will be adjusted to reflect the actual offset (after reflecting the limitation, if any).

Records and Data

The data used in this valuation consist of financial information and the age, service, and income records for active and inactive members and their survivors. All of the data were supplied by SamCERA and are accepted for valuation purposes without audit.

Replacement of Terminated Members

The ages and relative salaries at entry of future members are assumed to follow a new entrant distribution based on the pattern of current members. Under this assumption, the normal cost rates for active members will remain

fairly stable in future years unless there are changes in the governing law, the actuarial assumptions or the pattern of the new entrants.

Growth in Membership

For benefit determination purposes, no growth in the membership of SamCERA is assumed. For funding purposes, if amortization is required, the total payroll of covered members is assumed to grow due to the combined effects of future wage increases of current active members and the replacement of the current active members by new employees. No growth in the total number of active members is assumed.

Internal Revenue Code Section 415 Limit

The Internal Revenue Code Section 415 maximum benefit limitations are not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement, except for Plan 7 members which cannot receive benefits in excess of the 415 limit. For Plan 7 members, the benefit levels, combined with the limited compensation are low enough that it is unlikely the 415 limit would apply.

Internal Revenue Code Section 401(a)(17)

The Internal Revenue Code Section 401(a)(17) maximum compensation limitation is not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

Government Code Section 7522.10

The maximum compensation limit under Government Code 7522.10 is reflected in the valuation for funding purposes. Any limitation is also reflected in a member's benefit after retirement.

Employer Contributions

The statutory employer contribution rate is set by the Retirement Board based on actuarial valuations.

Member Contributions

The member contribution rates vary by entry age (except for Plan 7) and are described in the law. Code references are shown in Appendix B of the valuation report. The methods and assumptions used are detailed later in this section.

The individual member rates by entry age, plan, and class are illustrated in Appendix D of the valuation report.

Valuation of Assets

The assets are valued using a modified five-year smoothed method based on the difference between the expected market value and the actual market value of the assets as of the end of each six-month period (12/31 and 6/30). The expected market value is the prior period's market value increased with the net increase in the cash flow of funds, all increased with interest during the period at the expected investment return rate assumption.

Effective June 30, 2018 all deferred gains and losses are combined into a single amount to be recognized over a five-year (10 six-month) period. Beginning with the six-month period immediately following the June 30, 2018 valuation, offsetting of current period gains or losses against prior period gains or losses will occur, as follows. First, to the extent there is a loss for the period, it shall be used to offset any unrecognized gains from prior periods in the order of oldest to most recent. Any remaining loss for the period is recognized over a five-year (10 six-month) period. Similarly, any gain for the period shall be offset against unrecognized losses from prior periods.

The gross preliminary Actuarial Value of Assets is equal to the Market Value of Assets less any of the remaining unrecognized differences. A 20% corridor is then applied, so that the gross Actuarial Value of Assets cannot be greater than 120% of the Market Value of Assets nor less than 80% of the Market Value of Assets. The Valuation

Assets used in the calculation of the SCR are equal to the gross Actuarial Value of Assets less any non-valuation reserves.

Investment Earnings and Expenses

The future investment earnings of the assets of SamCERA are assumed to accrue at an annual rate of 6.50% compounded annually, net of both investment and administrative expenses. This rate was adopted effective June 30, 2019.

CPI Inflation

The CPI inflation assumption is used in the determination of assumptions for individual salary increases, overall wage growth, and postretirement benefit increases. The CPI inflation assumption is 2.50% per year.

Postretirement Benefit Increases

Postretirement increases are described in Appendix B. Assumed increases for valuation purposes are:

	General	Safety	Probation
Plan 1	2.50%	2.50%	2.50%
Plan 2	2.40%	2.40%	2.40%
Plan 3	0.00%	N/A	N/A
Plans 4, 5, and 7	1.90%	1.90%	1.90%
Plan 6	N/A	1.90%	1.90%

Assumed Plan 1 General and Safety COLAs are set at the CPI inflation assumption of 2.50% per year. Since Plan 2 does not have a COLA bank, it is expected that increases will be limited in some years. This reduces the overall expected rate and is reflected in a lower assumed increase.

Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 6.50% compounded semi-annually (3.25% per six-month period) for an annualized rate of 6.61%. This rate was adopted effective June 30, 2019 for valuation purposes; the change in member crediting was effective July 1, 2020.

Individual Salary Increases

Salaries increases of individual members are assumed to include the following components: (1) a general wage growth assumption that applies to all members, and (2) an individual-specific increase due to promotion and longevity based on years of service.

The rates of annual salary increase due to promotion and longevity assumed for the purpose of the valuation are illustrated in Exhibit A-5. The general wage growth assumption is 3.00% per year. This includes a 2.50% CPI component, and a 0.50% productivity (or “real wage growth”) component.

Increases are assumed to occur mid-year. The mid-year timing reflects that salary increases occur throughout the year, or on average mid-year.

SamCERA supplied two types of compensation data:

- 1) pensionable pay from the most recent bi-weekly pay period; and
- 2) pensionable pay from the prior year.

We annualized bi-weekly pay (by multiplying by 26) and then used the greater of the two amounts.

Growth in Payroll

The overall pensionable payroll of SamCERA active members is assumed to increase at 3.00% per annum.

PEPRA Compensation Limit

The PEPRA compensation limit is assumed to increase in line with the Consumer Prices Index for All Urban Consumers (CPI-U) U.S City Average. We assume that CPI-U will increase at the rate of 2.25% per year.

This assumption was adopted effective June 30, 2020.

Social Security Wage Base

Plan 3 members have their benefits offset by an assumed Social Security Benefit. For valuation funding purposes, we need to project the Social Security Benefit. We assume the current Social Security provisions will continue and the annual Wage Base will increase at the rate of 2.75% per year, based on the CPI-U and real wage growth assumptions. Note, statutory provisions describe how to compute a member's offset amount at time of termination or retirement.

This assumption was adopted effective June 30, 2020.

Retirement

Retirement rates vary by age and are shown by plan in Exhibits A-6 through A-11.

All General members who attain or who have attained age 75 and all Safety members who have attained age 65 are assumed to retire immediately. Additionally, if a member's benefit is equal to or greater than the 100% of compensation limit, they are also assumed to retire immediately. For purposes of the valuation, immediate retirement is assumed at:

- Age 62 with 38 years of service (General, Plans 1, 2, and 4)
- Age 65 with 41 years of service (General Plan 5)
- Age 67 with 40 years of service (General Plan 7)
- Age 50 with 33 years of service (Safety & Probation, Plans 1, 2, and 4)
- Age 55 with 33 years of service (Safety & Probation Plan 5)
- Age 55 with 38 years of service (Safety & Probation Plan 6)
- Age 57 with 38 years of service (Safety & Probation Plan 7)

Deferred vested members are assumed to retire at the later of current age and:

- Age 58 (General Members, except Plan 3 and Plan 7)
- Age 65 (General Plan 3 Members)
- Age 62 (General Plan 7 Members)
- Age 50 (Probation and Safety members)

The retirement rates were adopted effective June 30, 2020.

Disability

Rates of disability are illustrated in Exhibits A-6 through A-11.

The disability rates were adopted effective June 30, 2020.

Active Member Mortality

Rates of mortality from active service are illustrated in Exhibits A-6 through A-11. The mortality rates are based on the following mortality tables and mortality improvement scale.

Class	Gender	
General	Male	PubG-2010 (100%) Employee Male
General	Female	PubG-2010 (100%) Employee Female
Safety	Male	PubS-2010 (100%) Employee Male
Safety	Female	PubS-2010 (100%) Employee Female

All mortality rates are projected with the MP-2014 Ultimate Projection Scale.

Safety members have an additional service-connected mortality rate of 0.01% per year.

These rates were adopted effective June 30, 2020.

Other Terminations of Employment

Exhibits A-6 to A-11 show, for all ages, the rates assumed for future termination from active service other than for death, disability or retirement. These rates do not apply to members eligible for service retirement.

Terminating employees may withdraw their contributions immediately upon termination of employment and forfeit the right to further benefits, or they may leave their contributions on deposit with SamCERA. Former contributing members whose contributions are on deposit may later elect to receive a refund, may return to work or may remain inactive until becoming eligible to receive a retirement benefit under either SamCERA or a reciprocal retirement system. All terminating members who are not eligible for vested benefits are assumed to withdraw their contributions immediately.

The rates of termination were adopted effective June 30, 2020.

Probability of Refund

Exhibit A-4 shows the assumed probabilities that vested members will withdraw their contributions and elect a refund immediately upon termination and the probability the remaining members will elect a deferred vested benefit. For Plan 3, 100% of members are assumed to elect a vested benefit. All non-vested members are assumed to elect a refund and withdraw their contributions.

The probability of refund assumptions were adopted effective June 30, 2020.

Probability of Eligible Survivor

For members not currently in pay status, 75% of all males and 55% of all females are assumed to have eligible survivors (spouses or qualified domestic partners). Survivors are assumed to be three years younger than male members and two years older than female members. Survivors are assumed to be of the opposite sex as the member. There is no explicit assumption for children's benefits. We believe the survivor benefits based on this assumption are sufficient to cover children's benefits as they occur.

PostRetirement Mortality – Other Than Disabled Members

Rates of mortality for retired members, except for those retired on account of disability, are illustrated in Exhibit A-2. Beneficiary mortality is assumed to be the same as for healthy members. Beneficiaries are assumed to be of the opposite sex and have the same mortality as General members. The mortality rates are based on the following mortality tables and mortality improvement scale.

Class	Gender	
General	Male	PubG-2010 (100%) Healthy Retiree Male
General	Female	PubG-2010 (100%) Healthy Retiree Female
Safety	Male	PubS-2010 (100%) Healthy Retiree Male
Safety	Female	PubS-2010 (100%) Healthy Retiree Female

All mortality rates are projected with the MP-2014 Ultimate Projection Scale.

The rates of retired mortality were adopted effective June 30, 2020.

PostRetirement Mortality – Disabled Members

Rates of mortality for members retired on account of disability are illustrated in Exhibit A-3. The mortality rates are based on the following mortality tables and mortality improvement scale.

Class	Gender	
General	Male	PubG-2010 (100%*) Disabled Retiree Male
General	Female	PubG-2010 (100%*) Disabled Retiree Female
Safety	Male	PubS-2010 (100%) Disabled Retiree Male
Safety	Female	PubS-2010 (100%) Disabled Retiree Female

**Disabled General mortality rates are 100% of the standard table at ages 85 and above; 60% at ages 65 and below; and graded from 60% to 100% at 2% per year between age 65 and age 85.*

All mortality rates are projected with the MP-2014 Ultimate Projection Scale.

The rates of mortality were adopted effective June 30, 2020.

Deferred Member Mortality

Rates of mortality for members after termination from employment and before retirement are the same as PostRetirement Mortality – Other Than Disabled Members.

Valuation of Current Deferred Members

Current non-vested members who have terminated active employment are assumed to take a refund of their contributions at the valuation date.

Current vested members who have terminated active employment are assumed to keep their accounts with SamCERA and retire as specified in this section. An adjustment for these individuals such that the greater of the Final Average Compensation and annualized bi-weekly pay limited to two times the Final Average Compensation is used.

Reciprocal Benefits

30% of future deferred vested General members and 40% of future deferred vested Safety members are assumed to immediately join a reciprocal agency. For future reciprocal members, salaries are assumed to

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increase at the same rate as if they had remained in active employment with SamCERA. For current deferred vested members, eligibility is based on the data supplied by SamCERA and future salaries are assumed to increase at 3.52% annually for General members and 3.88% annually for Safety members.

This assumption was adopted effective June 30, 2020.

Part-Time Employees

For valuation purposes, part-time employees are assumed to continue working the same number of hours in the future.

Adjustment to Plan 3 Normal Cost Rate

Plan 3 members are eligible to transfer to Plans 2, 4 or 5 (depending on entry date) after five years of service. We have adjusted the Plan 3 Normal Cost to account for this. The adjustment is equal to 50% of the difference between the unadjusted Plan 3 Normal Cost rate and the Plan 4 Normal Cost rate.

Member Contribution Rate Assumptions

In general, for all plans except Plan 3 and Plan 7, the member rate is determined by the present value of the future benefit (PVFB) payable at retirement age, divided by the present value of all future salaries payable between age at entry and retirement age. For these purposes, per the CERL:

- A. The annuity factor used for General members is based on a 33% / 67% blend of the male and female annuity factors using current valuation assumptions and no COLA. For Safety members it is based on a 75% / 25% blend of the male and female annuity factors using current valuation assumptions. The valuation mortality tables use a static projection to 2042.
- B. The annuity factor used in determining the present value of future benefits (PVFB) at entry age is equal to the life only annuity factor at 6.50%.
- C. Projected Final Average Compensation is based on annual salary in the year prior to the assumed retirement age (Plans 1 and 2), or average annual salary in the three years prior to the assumed retirement date (Plans 4, 5 and 6).
- D. Member Rates are assumed to increase with entry age. There are a few exceptions at the higher entry ages where the calculated rate is less than the previous entry age. In these cases the member contribution rate is adjusted so that it is no less than the value for the previous entry age.

Member rates for all Plans 1, 2, 4, 5, and 6 members are loaded to account for a 50% COLA share. The COLA loads are applied to the otherwise applicable basic member rates prior to the addition of any cost-sharing rates.

For Plan 7, the member contribution rate is equal to one-half of the aggregate Normal Cost of the respective plan.

Exhibit A-1
Summary of Valuation Assumptions as of June 30, 2020

Economic assumptions

A. General wage increases	3.00%
B. Investment earnings	6.50%
C. Growth in active membership	0.00%
D. CPI-U inflation assumption	2.25%
E. CPI inflation assumption	2.50%

Demographic assumptions

A. Salary increases due to service	Exhibit A-5
B. Retirement from active service	Exhibits A-6 to A-11
C. Disability from active service	Exhibits A-6 to A-11
D. Mortality for active members prior to termination	Exhibits A-6 to A-11
E. Other terminations of employment	Exhibits A-6 to A-11
F. Probability of refund of contributions upon vested termination	Exhibit A-4
G. Mortality for active members after termination and service retired members	Exhibit A-2
H. Mortality for members retired for disability	Exhibit A-3
I. Mortality for beneficiaries	Exhibit A-2

Exhibit A-2
Mortality for Members Retired for Service ⁽¹⁾

<u>Age</u>	<u>General Male</u>	<u>General Female</u>	<u>Safety Male</u>	<u>Safety Female</u>
20	0.074%	0.035%	0.061%	0.021%
25	0.056%	0.024%	0.055%	0.026%
30	0.072%	0.040%	0.061%	0.035%
35	0.094%	0.062%	0.070%	0.047%
40	0.132%	0.096%	0.088%	0.064%
45	0.196%	0.150%	0.122%	0.087%
50	0.298%	0.222%	0.192%	0.149%
55	0.431%	0.286%	0.306%	0.258%
60	0.615%	0.384%	0.508%	0.446%
65	0.913%	0.613%	0.881%	0.770%
70	1.526%	1.063%	1.568%	1.329%
75	2.671%	1.883%	2.826%	2.295%
80	4.774%	3.360%	5.103%	3.962%
85	8.591%	6.205%	9.135%	6.842%
90	14.672%	11.487%	15.860%	11.815%

Annual Projected Mortality Improvement

<u>Age</u>	<u>All Groups</u>
65 & Less	1.000%
70	1.000%
75	1.000%
80	1.000%
85	1.000%
90	0.930%
95	0.850%
100	0.640%
105	0.430%
110	0.210%
115	0.000%

1. Mortality rates are those applicable for the fiscal year beginning in 2010. Annual projected improvements are assumed in the following years under the schedule shown. For example, the annual mortality rate for an 85-year old General male in fiscal year beginning in 2020 is 7.770% calculated as follows:

$$\begin{aligned}
 \text{Age 85 rate in 2020} &= \text{Age 85 rate in 2010 with 10 years improvement} \\
 &= 8.591\% \times (100.0\% - 1.0\%)^{(2020-2010)} \\
 &= 7.770\%
 \end{aligned}$$

Exhibit A-3
Mortality for Members Retired for Disability

Age	General Male	General Female	Safety Male	Safety Female
20	0.247%	0.140%	0.121%	0.053%
25	0.167%	0.098%	0.110%	0.065%
30	0.212%	0.154%	0.122%	0.089%
35	0.275%	0.241%	0.138%	0.121%
40	0.387%	0.377%	0.174%	0.164%
45	0.604%	0.591%	0.242%	0.223%
50	0.963%	0.890%	0.353%	0.304%
55	1.268%	1.045%	0.480%	0.461%
60	1.502%	1.174%	0.735%	0.699%
65	1.826%	1.354%	1.186%	1.061%
70	2.731%	2.003%	1.907%	1.610%
75	4.154%	3.202%	3.241%	2.443%
80	6.613%	5.406%	5.598%	3.962%
85	10.815%	9.331%	9.213%	6.842%
90	16.253%	13.665%	15.860%	11.815%

Exhibit A-4
Immediate Refund of Contributions upon Termination of Employment
(Excludes Plan 3)

Years of Service	General	Safety
0	100%	100%
1	100%	100%
2	100%	100%
3	100%	100%
4	100%	100%
5	26%	26%
6	26%	26%
7	26%	26%
8	26%	26%
9	26%	25%
10	25%	24%
11	25%	23%
12	24%	22%
13	23%	20%
14	23%	18%
15	23%	16%
16	22%	14%
17	21%	11%
18	19%	8%
19	17%	5%
20	15%	0%
21	14%	0%
22	11%	0%
23	9%	0%
24	7%	0%
25	5%	0%
26	2%	0%
27	0%	0%
28	0%	0%
29	0%	0%
30 & Up	0%	0%

**Exhibit A-5
 Annual Increase in Salary**

Years of Service	Due to Promotion and Longevity		Total Annual Increase ⁽¹⁾	
	General	Safety	General	Safety
<1	6.50%	6.00%	9.70%	9.18%
1	4.75%	4.75%	7.89%	7.89%
2	3.50%	3.50%	6.61%	6.61%
3	2.75%	2.75%	5.83%	5.83%
4	2.00%	2.10%	5.06%	5.16%
5	1.75%	1.70%	4.80%	4.75%
6	1.50%	1.40%	4.55%	4.44%
7	1.25%	1.20%	4.29%	4.24%
8	1.05%	1.10%	4.08%	4.13%
9	0.90%	1.00%	3.93%	4.03%
10	0.80%	0.95%	3.82%	3.98%
11	0.70%	0.90%	3.72%	3.93%
12	0.60%	0.85%	3.62%	3.88%
13	0.50%	0.85%	3.52%	3.88%
14	0.50%	0.85%	3.52%	3.88%
15	0.50%	0.85%	3.52%	3.88%
16	0.50%	0.85%	3.52%	3.88%
17	0.50%	0.85%	3.52%	3.88%
18	0.50%	0.85%	3.52%	3.88%
19	0.50%	0.85%	3.52%	3.88%
20 or More	0.50%	0.85%	3.52%	3.88%

1. The total expected increase in salary is the increase due to promotion and longevity, adjusted for assumed 3.00% per annum increases in the general wage. The total result is compounded rather than additive.

Rates of Separation from Active Service Exhibits A-6 to A-11

A schedule of the probabilities of termination of employment due to the following causes can be found on the following pages:

Service Retirement:	Member retires after meeting age and service requirements for reasons other than disability.
Withdrawal:	Member terminates and elects a refund of member contributions, or a deferred retirement benefit.
Service Disability:	Member receives disability retirement; disability is service related.
Ordinary Disability:	Member receives disability retirement; disability is not service related.
Service Death:	Member dies before retirement; death is service related.
Ordinary Death:	Member dies before retirement; death is not service related.

Each rate represents the probability that a member will separate from service at each age due to the particular cause. For example, a rate of 0.0300 for a member's service retirement at age 50 means we assume that 30 out of 1,000 members who are age 50 will retire at that age.

Each Exhibit represents the detailed rates needed for each SamCERA plan by sex:

- A-6: General Plans 1, 2, 4, 5, and 7 Males
- A-7: General Plans 1, 2, 4, 5, and 7 Females
- A-8: General Plan 3 Males
- A-9: General Plan 3 Females
- A-10: Safety and Probation Plans 1, 2, 4, 5, 6, and 7 Males
- A-11: Safety and Probation Plans 1, 2, 4, 5, 6, and 7 Females

**Exhibit A-6
 Rate of Separation from Active Service
 General Plans 1, 2, 4, 5, and 7 – Male**

Age	Service Retirement ⁽¹⁾⁽²⁾		Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
	Plans 1, 2, 4	Plans 5 & 7						
18	0.00000	0.00000	0.00034	0.00018	N/A	0.00036	0	0.15000
19	0.00000	0.00000	0.00034	0.00018	N/A	0.00038	1	0.13000
20	0.00000	0.00000	0.00036	0.00020	N/A	0.00037	2	0.10500
21	0.00000	0.00000	0.00037	0.00020	N/A	0.00036	3	0.08500
22	0.00000	0.00000	0.00038	0.00020	N/A	0.00033	4	0.07500
23	0.00000	0.00000	0.00037	0.00020	N/A	0.00031	5	0.06700
24	0.00000	0.00000	0.00037	0.00020	N/A	0.00029	6	0.06000
25	0.00000	0.00000	0.00038	0.00020	N/A	0.00028	7	0.05400
26	0.00000	0.00000	0.00038	0.00020	N/A	0.00030	8	0.04900
27	0.00000	0.00000	0.00038	0.00020	N/A	0.00031	9	0.04400
28	0.00000	0.00000	0.00038	0.00020	N/A	0.00033	10	0.04100
29	0.00000	0.00000	0.00042	0.00023	N/A	0.00034	11	0.03800
30	0.00000	0.00000	0.00044	0.00024	N/A	0.00036	12	0.03500
31	0.00000	0.00000	0.00047	0.00026	N/A	0.00038	13	0.03300
32	0.00000	0.00000	0.00048	0.00026	N/A	0.00040	14	0.03100
33	0.00000	0.00000	0.00054	0.00029	N/A	0.00042	15	0.02900
34	0.00000	0.00000	0.00059	0.00031	N/A	0.00044	16	0.02700
35	0.00000	0.00000	0.00062	0.00033	N/A	0.00047	17	0.02500
36	0.00000	0.00000	0.00067	0.00036	N/A	0.00050	18	0.02300
37	0.00000	0.00000	0.00072	0.00039	N/A	0.00053	19	0.02100
38	0.00000	0.00000	0.00081	0.00044	N/A	0.00057	20	0.01900
39	0.00000	0.00000	0.00090	0.00048	N/A	0.00061	21	0.01700
40	0.00000	0.00000	0.00099	0.00054	N/A	0.00066	22	0.01500
41	0.00000	0.00000	0.00107	0.00058	N/A	0.00071	23	0.01400
42	0.00000	0.00000	0.00116	0.00063	N/A	0.00077	24	0.01300
43	0.00000	0.00000	0.00128	0.00069	N/A	0.00083	25	0.01200
44	0.00000	0.00000	0.00140	0.00076	N/A	0.00090	26	0.01100
45	0.00000	0.00000	0.00155	0.00083	N/A	0.00098	27	0.01000
46	0.00000	0.00000	0.00164	0.00089	N/A	0.00107	28	0.01000
47	0.00000	0.00000	0.00175	0.00094	N/A	0.00116	29	0.01000
48	0.00000	0.00000	0.00184	0.00099	N/A	0.00127	30 & Above ⁽³⁾	0.01000
49	0.00000	0.00000	0.00192	0.00103	N/A	0.00138		
50	0.03000	0.02400	0.00202	0.00108	N/A	0.00149		
51	0.03000	0.02400	0.00208	0.00112	N/A	0.00162		
52	0.03000	0.02400	0.00217	0.00117	N/A	0.00175		
53	0.04000	0.03200	0.00229	0.00123	N/A	0.00189		
54	0.05000	0.04000	0.00240	0.00129	N/A	0.00203		
55	0.10000	0.08000	0.00250	0.00135	N/A	0.00219		
56	0.05000	0.04000	0.00263	0.00141	N/A	0.00236		
57	0.07500	0.06000	0.00274	0.00148	N/A	0.00255		
58	0.10000	0.08000	0.00288	0.00155	N/A	0.00275		
59	0.15000	0.12000	0.00302	0.00162	N/A	0.00296		
60	0.15000	0.12000	0.00313	0.00169	N/A	0.00319		
61	0.20000	0.16000	0.00324	0.00175	N/A	0.00344		
62	0.25000	0.20000	0.00337	0.00182	N/A	0.00371		
63	0.22000	0.17600	0.00334	0.00180	N/A	0.00401		
64	0.22000	0.17600	0.00329	0.00177	N/A	0.00433		
65	0.30000	0.24000	0.00317	0.00171	N/A	0.00468		
66	0.30000	0.24000	0.00313	0.00169	N/A	0.00506		
67	0.30000	0.36000	0.00320	0.00172	N/A	0.00548		
68	0.30000	0.30000	0.00329	0.00177	N/A	0.00594		
69	0.30000	0.30000	0.00332	0.00179	N/A	0.00646		
70	0.30000	0.30000	0.00307	0.00165	N/A	0.00703		
71	0.30000	0.30000	0.00304	0.00163	N/A	0.00767		
72	0.30000	0.30000	0.00326	0.00176	N/A	0.00837		
73	0.30000	0.30000	0.00364	0.00196	N/A	0.00915		
74	0.30000	0.30000	0.00390	0.00210	N/A	0.01001		
75	1.00000	1.00000	N/A	N/A	N/A	N/A		

1. 100% probability of retirement is assumed at ages 62 and above with 38 or more years of service (65/41 for Plan 5; 67/40 for Plan 7). Rates of retirement are 0.00% prior to age 52 for Plan 7.

2. Service retirement rates vary by years of service (75% of these rates are applicable at less than 20 years of service; 120% at 20 to 29 years of service; 160% at 30 or more years of service).

3. 0.00% probability of termination with 30 years of service and above for Plans 1, 2, 4, and 5.

Exhibit A-7
Rate of Separation from Active Service
General Plans 1, 2, 4, 5, and 7 – Female

Age	Service Retirement ⁽¹⁾⁽²⁾		Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
	Plans 1, 2, 4	Plans 5 & 7						
18	0.00000	0.00000	0.00034	0.00018	N/A	0.00013	0	0.15000
19	0.00000	0.00000	0.00034	0.00018	N/A	0.00013	1	0.13000
20	0.00000	0.00000	0.00036	0.00020	N/A	0.00013	2	0.10500
21	0.00000	0.00000	0.00037	0.00020	N/A	0.00012	3	0.08500
22	0.00000	0.00000	0.00038	0.00020	N/A	0.00011	4	0.07500
23	0.00000	0.00000	0.00037	0.00020	N/A	0.00010	5	0.06700
24	0.00000	0.00000	0.00037	0.00020	N/A	0.00009	6	0.06000
25	0.00000	0.00000	0.00038	0.00020	N/A	0.00009	7	0.05400
26	0.00000	0.00000	0.00038	0.00020	N/A	0.00010	8	0.04900
27	0.00000	0.00000	0.00038	0.00020	N/A	0.00011	9	0.04400
28	0.00000	0.00000	0.00038	0.00020	N/A	0.00012	10	0.04100
29	0.00000	0.00000	0.00042	0.00023	N/A	0.00013	11	0.03800
30	0.00000	0.00000	0.00044	0.00024	N/A	0.00015	12	0.03500
31	0.00000	0.00000	0.00047	0.00026	N/A	0.00016	13	0.03300
32	0.00000	0.00000	0.00048	0.00026	N/A	0.00018	14	0.03100
33	0.00000	0.00000	0.00054	0.00029	N/A	0.00019	15	0.02900
34	0.00000	0.00000	0.00059	0.00031	N/A	0.00021	16	0.02700
35	0.00000	0.00000	0.00062	0.00033	N/A	0.00023	17	0.02500
36	0.00000	0.00000	0.00067	0.00036	N/A	0.00025	18	0.02300
37	0.00000	0.00000	0.00072	0.00039	N/A	0.00028	19	0.02100
38	0.00000	0.00000	0.00081	0.00044	N/A	0.00030	20	0.01900
39	0.00000	0.00000	0.00090	0.00048	N/A	0.00033	21	0.01700
40	0.00000	0.00000	0.00099	0.00054	N/A	0.00036	22	0.01500
41	0.00000	0.00000	0.00107	0.00058	N/A	0.00040	23	0.01400
42	0.00000	0.00000	0.00116	0.00063	N/A	0.00043	24	0.01300
43	0.00000	0.00000	0.00128	0.00069	N/A	0.00047	25	0.01200
44	0.00000	0.00000	0.00140	0.00076	N/A	0.00051	26	0.01100
45	0.00000	0.00000	0.00155	0.00083	N/A	0.00056	27	0.01000
46	0.00000	0.00000	0.00164	0.00089	N/A	0.00061	28	0.01000
47	0.00000	0.00000	0.00175	0.00094	N/A	0.00066	29	0.01000
48	0.00000	0.00000	0.00184	0.00099	N/A	0.00071	30 & Above ⁽³⁾	0.01000
49	0.00000	0.00000	0.00192	0.00103	N/A	0.00077		
50	0.03000	0.02400	0.00202	0.00108	N/A	0.00083		
51	0.03000	0.02400	0.00208	0.00112	N/A	0.00090		
52	0.03000	0.02400	0.00217	0.00117	N/A	0.00097		
53	0.04000	0.03200	0.00229	0.00123	N/A	0.00105		
54	0.05000	0.04000	0.00240	0.00129	N/A	0.00113		
55	0.10000	0.08000	0.00250	0.00135	N/A	0.00123		
56	0.05000	0.04000	0.00263	0.00141	N/A	0.00133		
57	0.07500	0.06000	0.00274	0.00148	N/A	0.00144		
58	0.10000	0.08000	0.00288	0.00155	N/A	0.00156		
59	0.15000	0.12000	0.00302	0.00162	N/A	0.00170		
60	0.15000	0.12000	0.00313	0.00169	N/A	0.00186		
61	0.20000	0.16000	0.00324	0.00175	N/A	0.00203		
62	0.25000	0.20000	0.00337	0.00182	N/A	0.00222		
63	0.22000	0.17600	0.00334	0.00180	N/A	0.00244		
64	0.22000	0.17600	0.00329	0.00177	N/A	0.00269		
65	0.30000	0.24000	0.00317	0.00171	N/A	0.00296		
66	0.30000	0.24000	0.00313	0.00169	N/A	0.00327		
67	0.30000	0.36000	0.00320	0.00172	N/A	0.00362		
68	0.30000	0.30000	0.00329	0.00177	N/A	0.00400		
69	0.30000	0.30000	0.00332	0.00179	N/A	0.00442		
70	0.30000	0.30000	0.00307	0.00165	N/A	0.00489		
71	0.30000	0.30000	0.00304	0.00163	N/A	0.00541		
72	0.30000	0.30000	0.00326	0.00176	N/A	0.00598		
73	0.30000	0.30000	0.00364	0.00196	N/A	0.00661		
74	0.30000	0.30000	0.00390	0.00210	N/A	0.00731		
75	1.00000	1.00000	N/A	N/A	N/A	N/A		

1. 100% probability of retirement is assumed at ages 62 and above with 38 or more years of service (65/41 for Plan 5; 67/40 for Plan 7). Rates of retirement are 0.00% prior to age 52 for Plan 7.

2. Service retirement rates vary by years of service (75% of these rates are applicable at less than 20 years of service; 120% at 20 to 29 years of service; 160% at 30 or more years of service).

3. 0.00% probability of termination with 30 years of service and above for Plans 1, 2, 4, and 5.

Exhibit A-8
Rate of Separation from Active Service
General Plan 3 – Male

<u>Age</u>	<u>Service Retirement</u>	<u>Service Disability</u>	<u>Ordinary Disability</u>	<u>Service Death</u>	<u>Ordinary Death</u>	<u>Years of Service</u>	<u>Other Terminations</u>
18	0.00000	N/A	N/A	N/A	0.00036	0	0.15000
19	0.00000	N/A	N/A	N/A	0.00038	1	0.13000
20	0.00000	N/A	N/A	N/A	0.00037	2	0.10500
21	0.00000	N/A	N/A	N/A	0.00036	3	0.08500
22	0.00000	N/A	N/A	N/A	0.00033	4	0.07500
23	0.00000	N/A	N/A	N/A	0.00031	5	0.06700
24	0.00000	N/A	N/A	N/A	0.00029	6	0.06000
25	0.00000	N/A	N/A	N/A	0.00028	7	0.05400
26	0.00000	N/A	N/A	N/A	0.00030	8	0.04900
27	0.00000	N/A	N/A	N/A	0.00031	9	0.04400
28	0.00000	N/A	N/A	N/A	0.00033	10	0.04100
29	0.00000	N/A	N/A	N/A	0.00034	11	0.03800
30	0.00000	N/A	N/A	N/A	0.00036	12	0.03500
31	0.00000	N/A	N/A	N/A	0.00038	13	0.03300
32	0.00000	N/A	N/A	N/A	0.00040	14	0.03100
33	0.00000	N/A	N/A	N/A	0.00042	15	0.02900
34	0.00000	N/A	N/A	N/A	0.00044	16	0.02700
35	0.00000	N/A	N/A	N/A	0.00047	17	0.02500
36	0.00000	N/A	N/A	N/A	0.00050	18	0.02300
37	0.00000	N/A	N/A	N/A	0.00053	19	0.02100
38	0.00000	N/A	N/A	N/A	0.00057	20	0.01900
39	0.00000	N/A	N/A	N/A	0.00061	21	0.01700
40	0.00000	N/A	N/A	N/A	0.00066	22	0.01500
41	0.00000	N/A	N/A	N/A	0.00071	23	0.01400
42	0.00000	N/A	N/A	N/A	0.00077	24	0.01300
43	0.00000	N/A	N/A	N/A	0.00083	25	0.01200
44	0.00000	N/A	N/A	N/A	0.00090	26	0.01100
45	0.00000	N/A	N/A	N/A	0.00098	27	0.01000
46	0.00000	N/A	N/A	N/A	0.00107	28	0.01000
47	0.00000	N/A	N/A	N/A	0.00116	29	0.01000
48	0.00000	N/A	N/A	N/A	0.00127	30 & Above	0.01000
49	0.00000	N/A	N/A	N/A	0.00138		
50	0.00000	N/A	N/A	N/A	0.00149		
51	0.00000	N/A	N/A	N/A	0.00162		
52	0.00000	N/A	N/A	N/A	0.00175		
53	0.00000	N/A	N/A	N/A	0.00189		
54	0.00000	N/A	N/A	N/A	0.00203		
55	0.03000	N/A	N/A	N/A	0.00219		
56	0.03000	N/A	N/A	N/A	0.00236		
57	0.03000	N/A	N/A	N/A	0.00255		
58	0.03000	N/A	N/A	N/A	0.00275		
59	0.03000	N/A	N/A	N/A	0.00296		
60	0.03000	N/A	N/A	N/A	0.00319		
61	0.06000	N/A	N/A	N/A	0.00344		
62	0.15000	N/A	N/A	N/A	0.00371		
63	0.10000	N/A	N/A	N/A	0.00401		
64	0.15000	N/A	N/A	N/A	0.00433		
65	0.30000	N/A	N/A	N/A	0.00468		
66	0.30000	N/A	N/A	N/A	0.00506		
67	0.30000	N/A	N/A	N/A	0.00548		
68	0.30000	N/A	N/A	N/A	0.00594		
69	0.30000	N/A	N/A	N/A	0.00646		
70	0.40000	N/A	N/A	N/A	0.00703		
71	0.40000	N/A	N/A	N/A	0.00767		
72	0.40000	N/A	N/A	N/A	0.00837		
73	0.40000	N/A	N/A	N/A	0.00915		
74	0.40000	N/A	N/A	N/A	0.01001		
75	1.00000	N/A	N/A	N/A	N/A		

Exhibit A-9
Rate of Separation from Active Service
General Plan 3 – Female

<u>Age</u>	<u>Service Retirement</u>	<u>Service Disability</u>	<u>Ordinary Disability</u>	<u>Service Death</u>	<u>Ordinary Death</u>	<u>Years of Service</u>	<u>Other Terminations</u>
18	0.0000	N/A	N/A	N/A	0.00013	0	0.15000
19	0.0000	N/A	N/A	N/A	0.00013	1	0.13000
20	0.0000	N/A	N/A	N/A	0.00013	2	0.10500
21	0.0000	N/A	N/A	N/A	0.00012	3	0.08500
22	0.0000	N/A	N/A	N/A	0.00011	4	0.07500
23	0.0000	N/A	N/A	N/A	0.00010	5	0.06700
24	0.0000	N/A	N/A	N/A	0.00009	6	0.06000
25	0.0000	N/A	N/A	N/A	0.00009	7	0.05400
26	0.0000	N/A	N/A	N/A	0.00010	8	0.04900
27	0.0000	N/A	N/A	N/A	0.00011	9	0.04400
28	0.0000	N/A	N/A	N/A	0.00012	10	0.04100
29	0.0000	N/A	N/A	N/A	0.00013	11	0.03800
30	0.0000	N/A	N/A	N/A	0.00015	12	0.03500
31	0.0000	N/A	N/A	N/A	0.00016	13	0.03300
32	0.0000	N/A	N/A	N/A	0.00018	14	0.03100
33	0.0000	N/A	N/A	N/A	0.00019	15	0.02900
34	0.0000	N/A	N/A	N/A	0.00021	16	0.02700
35	0.0000	N/A	N/A	N/A	0.00023	17	0.02500
36	0.0000	N/A	N/A	N/A	0.00025	18	0.02300
37	0.0000	N/A	N/A	N/A	0.00028	19	0.02100
38	0.0000	N/A	N/A	N/A	0.00030	20	0.01900
39	0.0000	N/A	N/A	N/A	0.00033	21	0.01700
40	0.0000	N/A	N/A	N/A	0.00036	22	0.01500
41	0.0000	N/A	N/A	N/A	0.00040	23	0.01400
42	0.0000	N/A	N/A	N/A	0.00043	24	0.01300
43	0.0000	N/A	N/A	N/A	0.00047	25	0.01200
44	0.0000	N/A	N/A	N/A	0.00051	26	0.01100
45	0.0000	N/A	N/A	N/A	0.00056	27	0.01000
46	0.0000	N/A	N/A	N/A	0.00061	28	0.01000
47	0.0000	N/A	N/A	N/A	0.00066	29	0.01000
48	0.0000	N/A	N/A	N/A	0.00071	30 & Above	0.01000
49	0.0000	N/A	N/A	N/A	0.00077		
50	0.0000	N/A	N/A	N/A	0.00083		
51	0.0000	N/A	N/A	N/A	0.00090		
52	0.0000	N/A	N/A	N/A	0.00097		
53	0.0000	N/A	N/A	N/A	0.00105		
54	0.0000	N/A	N/A	N/A	0.00113		
55	0.0400	N/A	N/A	N/A	0.00123		
56	0.0400	N/A	N/A	N/A	0.00133		
57	0.0400	N/A	N/A	N/A	0.00144		
58	0.0400	N/A	N/A	N/A	0.00156		
59	0.0400	N/A	N/A	N/A	0.00170		
60	0.0400	N/A	N/A	N/A	0.00186		
61	0.0600	N/A	N/A	N/A	0.00203		
62	0.1500	N/A	N/A	N/A	0.00222		
63	0.1000	N/A	N/A	N/A	0.00244		
64	0.1500	N/A	N/A	N/A	0.00269		
65	0.3000	N/A	N/A	N/A	0.00296		
66	0.3000	N/A	N/A	N/A	0.00327		
67	0.3000	N/A	N/A	N/A	0.00362		
68	0.3000	N/A	N/A	N/A	0.00400		
69	0.3000	N/A	N/A	N/A	0.00442		
70	0.4000	N/A	N/A	N/A	0.00489		
71	0.4000	N/A	N/A	N/A	0.00541		
72	0.4000	N/A	N/A	N/A	0.00598		
73	0.4000	N/A	N/A	N/A	0.00661		
74	0.4000	N/A	N/A	N/A	0.00731		
75	1.0000	N/A	N/A	N/A	N/A		

Exhibit A-10
Rate of Separation from Active Service
Safety & Probation Plans – Male

Age	Service Retirement ⁽¹⁾⁽²⁾		Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
	Plans 1, 2, 4	Plans 5, 6, 7						
18	0.00000	0.00000	0.00150	0.00000	0.00010	0.00037	0	0.10000
19	0.00000	0.00000	0.00150	0.00000	0.00010	0.00040	1	0.08000
20	0.00000	0.00000	0.00150	0.00000	0.00010	0.00041	2	0.06000
21	0.00000	0.00000	0.00150	0.00000	0.00010	0.00041	3	0.04500
22	0.00000	0.00000	0.00150	0.00000	0.00010	0.00040	4	0.03500
23	0.00000	0.00000	0.00150	0.00000	0.00010	0.00039	5	0.03000
24	0.00000	0.00000	0.00150	0.00000	0.00010	0.00038	6	0.02600
25	0.00000	0.00000	0.00150	0.00000	0.00010	0.00037	7	0.02300
26	0.00000	0.00000	0.00150	0.00000	0.00010	0.00038	8	0.02100
27	0.00000	0.00000	0.00150	0.00000	0.00010	0.00039	9	0.01900
28	0.00000	0.00000	0.00150	0.00000	0.00010	0.00040	10	0.01700
29	0.00000	0.00000	0.00150	0.00000	0.00010	0.00041	11	0.01500
30	0.00000	0.00000	0.00170	0.00000	0.00010	0.00041	12	0.01350
31	0.00000	0.00000	0.00190	0.00000	0.00010	0.00042	13	0.01200
32	0.00000	0.00000	0.00210	0.00000	0.00010	0.00043	14	0.01100
33	0.00000	0.00000	0.00230	0.00000	0.00010	0.00044	15	0.01000
34	0.00000	0.00000	0.00250	0.00000	0.00010	0.00045	16	0.00900
35	0.00000	0.00000	0.00270	0.00000	0.00010	0.00047	17	0.00800
36	0.00000	0.00000	0.00290	0.00000	0.00010	0.00049	18	0.00700
37	0.00000	0.00000	0.00310	0.00000	0.00010	0.00050	19	0.00600
38	0.00000	0.00000	0.00330	0.00000	0.00010	0.00053	20 & Above ⁽³⁾	0.00500
39	0.00000	0.00000	0.00350	0.00000	0.00010	0.00056		
40	0.00000	0.00000	0.00370	0.00000	0.00010	0.00059		
41	0.00000	0.00000	0.00390	0.00000	0.00010	0.00062		
42	0.00000	0.00000	0.00410	0.00000	0.00010	0.00067		
43	0.00000	0.00000	0.00430	0.00000	0.00010	0.00071		
44	0.00000	0.00000	0.00450	0.00000	0.00010	0.00076		
45	0.05000	0.00000	0.00470	0.00000	0.00010	0.00082		
46	0.05000	0.00000	0.00490	0.00000	0.00010	0.00088		
47	0.05000	0.00000	0.00520	0.00000	0.00010	0.00095		
48	0.05000	0.00000	0.00550	0.00000	0.00010	0.00102		
49	0.11000	0.00000	0.00580	0.00000	0.00010	0.00111		
50	0.22500	0.18000	0.00750	0.00000	0.00010	0.00120		
51	0.16000	0.12800	0.00920	0.00000	0.00010	0.00129		
52	0.16000	0.12800	0.01090	0.00000	0.00010	0.00140		
53	0.22000	0.17600	0.01260	0.00000	0.00010	0.00151		
54	0.22000	0.17600	0.01430	0.00000	0.00010	0.00162		
55	0.25000	0.20000	0.01600	0.00000	0.00010	0.00175		
56	0.25000	0.20000	0.01770	0.00000	0.00010	0.00190		
57	0.25000	0.25000	0.01940	0.00000	0.00010	0.00205		
58	0.25000	0.25000	0.02110	0.00000	0.00010	0.00223		
59	0.25000	0.25000	0.02280	0.00000	0.00010	0.00243		
60	0.40000	0.40000	0.02080	0.00000	0.00010	0.00264		
61	0.40000	0.40000	0.01880	0.00000	0.00010	0.00288		
62	0.40000	0.40000	0.01680	0.00000	0.00010	0.00315		
63	0.40000	0.40000	0.01480	0.00000	0.00010	0.00344		
64	0.40000	0.40000	0.01280	0.00000	0.00010	0.00375		
65	1.00000	1.00000	N/A	N/A	N/A	N/A		

1. 100% probability of retirement is assumed as follows:

- with 33 or more years of service for Safety and Probation Plans 1, 2, and 4.
- at ages 55 and above with 33 or more years of service for Safety and Probation Plan 5.
- at ages 55 and above with 38 or more years of service for Safety and Probation Plan 6.
- at ages 57 and above with 38 or more years of service for Safety and Probation Plan 7.

2. Service retirement rates vary by years of service (40% of these rates are applicable at less than 15 years of service; 90% at 15 to 19 years of service; 120% at 20 to 24 years of service; 170% at 25 or more years of service).

3. 0.00% probability of termination with 20 years of service and above for all Safety/Probation plans except Plan 7.

**Exhibit A-11
 Rate of Separation from Active Service
 Safety & Probation Plans – Female**

Age	Service Retirement ⁽¹⁾⁽²⁾		Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
	Plans 1, 2, 4	Plans 5, 6, 7						
18	0.00000	0.00000	0.00150	0.00000	0.00010	0.00014	0	0.10000
19	0.00000	0.00000	0.00150	0.00000	0.00010	0.00015	1	0.08000
20	0.00000	0.00000	0.00150	0.00000	0.00010	0.00016	2	0.06000
21	0.00000	0.00000	0.00150	0.00000	0.00010	0.00017	3	0.04500
22	0.00000	0.00000	0.00150	0.00000	0.00010	0.00017	4	0.03500
23	0.00000	0.00000	0.00150	0.00000	0.00010	0.00018	5	0.03000
24	0.00000	0.00000	0.00150	0.00000	0.00010	0.00019	6	0.02600
25	0.00000	0.00000	0.00150	0.00000	0.00010	0.00020	7	0.02300
26	0.00000	0.00000	0.00150	0.00000	0.00010	0.00021	8	0.02100
27	0.00000	0.00000	0.00150	0.00000	0.00010	0.00022	9	0.01900
28	0.00000	0.00000	0.00150	0.00000	0.00010	0.00024	10	0.01700
29	0.00000	0.00000	0.00150	0.00000	0.00010	0.00025	11	0.01500
30	0.00000	0.00000	0.00170	0.00000	0.00010	0.00027	12	0.01350
31	0.00000	0.00000	0.00190	0.00000	0.00010	0.00028	13	0.01200
32	0.00000	0.00000	0.00210	0.00000	0.00010	0.00030	14	0.01100
33	0.00000	0.00000	0.00230	0.00000	0.00010	0.00032	15	0.01000
34	0.00000	0.00000	0.00250	0.00000	0.00010	0.00034	16	0.00900
35	0.00000	0.00000	0.00270	0.00000	0.00010	0.00036	17	0.00800
36	0.00000	0.00000	0.00290	0.00000	0.00010	0.00038	18	0.00700
37	0.00000	0.00000	0.00310	0.00000	0.00010	0.00041	19	0.00600
38	0.00000	0.00000	0.00330	0.00000	0.00010	0.00043	20 & Above ⁽³⁾	0.00500
39	0.00000	0.00000	0.00350	0.00000	0.00010	0.00046		
40	0.00000	0.00000	0.00370	0.00000	0.00010	0.00049		
41	0.00000	0.00000	0.00390	0.00000	0.00010	0.00052		
42	0.00000	0.00000	0.00410	0.00000	0.00010	0.00056		
43	0.00000	0.00000	0.00430	0.00000	0.00010	0.00059		
44	0.00000	0.00000	0.00450	0.00000	0.00010	0.00063		
45	0.05000	0.00000	0.00470	0.00000	0.00010	0.00067		
46	0.05000	0.00000	0.00490	0.00000	0.00010	0.00071		
47	0.05000	0.00000	0.00520	0.00000	0.00010	0.00076		
48	0.05000	0.00000	0.00550	0.00000	0.00010	0.00080		
49	0.11000	0.00000	0.00580	0.00000	0.00010	0.00085		
50	0.22500	0.18000	0.00750	0.00000	0.00010	0.00091		
51	0.16000	0.12800	0.00920	0.00000	0.00010	0.00097		
52	0.16000	0.12800	0.01090	0.00000	0.00010	0.00103		
53	0.22000	0.17600	0.01260	0.00000	0.00010	0.00109		
54	0.22000	0.17600	0.01430	0.00000	0.00010	0.00116		
55	0.25000	0.20000	0.01600	0.00000	0.00010	0.00123		
56	0.25000	0.20000	0.01770	0.00000	0.00010	0.00131		
57	0.25000	0.25000	0.01940	0.00000	0.00010	0.00140		
58	0.25000	0.25000	0.02110	0.00000	0.00010	0.00148		
59	0.25000	0.25000	0.02280	0.00000	0.00010	0.00158		
60	0.40000	0.40000	0.02080	0.00000	0.00010	0.00168		
61	0.40000	0.40000	0.01880	0.00000	0.00010	0.00178		
62	0.40000	0.40000	0.01680	0.00000	0.00010	0.00190		
63	0.40000	0.40000	0.01480	0.00000	0.00010	0.00202		
64	0.40000	0.40000	0.01280	0.00000	0.00010	0.00215		
65	1.00000	1.00000	N/A	N/A	N/A	N/A		

1. 100% probability of retirement is assumed as follows:

- with 33 or more years of service for Safety and Probation Plans 1, 2, and 4.
- at ages 55 and above with 33 or more years of service for Safety and Probation Plan 5.
- at ages 55 and above with 38 or more years of service for Safety and Probation Plan 6.
- at ages 57 and above with 38 or more years of service for Safety and Probation Plan 7.

2. Service retirement rates vary by years of service (40% of these rates are applicable at less than 15 years of service; 90% at 15 to 19 years of service; 120% at 20 to 24 years of service; 170% at 25 or more years of service).

3. 0.00% probability of termination with 20 years of service and above for all Safety/Probation plans except Plan 7.

Appendix B Summary of Benefit Provisions

All actuarial calculations are based on our understanding of the statutes governing the SamCERA as contained in the County Employees Retirement Law (CERL) of 1937, with provisions adopted by the SamCERA Board, effective through June 30, 2020. The benefit and contribution provisions of this law are summarized briefly below, along with corresponding references to the Code Section. This summary does not attempt to cover all the detailed provisions of the law.

MEMBERSHIP IN RETIREMENT PLANS

The County has established 12 defined benefit plans based on a member's date of entry into SamCERA. Plans 1, 2, 4, 5, 6, and 7 are open to all members depending on their date of entry. Only General members are eligible for Plan 3. **Government Code Section**

Employees of the Mosquito and Vector Control District are eligible for participation in all General retirement plans, except for Plan 3.

- Plan 1:** Employees hired on or before July 5, 1980.
- Plan 2:** Employees hired after July 5, 1980 but on or before July 12, 1997.
- Plan 3:** General members hired on or before December 22, 2012 may have elected to participate in Plan 3. After five years of service, Plan 3 members can elect membership under the open eligible contributory plan. Members currently working in a contributory plan with Plan 3 service may purchase an upgrade of their Plan 3 service. (31496)
- Plan 4:** Employees hired after July 12, 1997 and before August 7, 2011 (General members, except Plan 5 transfers; see below); before July 10, 2011 (Probation members); and before January 8, 2012 (Safety members).
- Plan 5:** General members hired on or after August 7, 2011, and Deputy Sheriffs hired on or after January 8, 2012. Probation members hired on or after July 10, 2011 and Safety members (except Deputy Sheriffs) may elect this Plan. Members must be first hired before January 1, 2013 to be eligible to elect this Plan.
After 10 years of service, General Plan 5 members can elect to transfer to Plan 4 and must pay the total actuarial equivalent cost of the increase in past service benefits at the date of transfer.
- Plan 6:** Probation members hired on or after July 10, 2011 and Safety members (except Deputy Sheriffs) may elect this Plan. Members must be first hired before January 1, 2013 to be eligible to elect this Plan.
- Plan 7:** Employees first hired on or after January 1, 2013.

MEMBER CONTRIBUTIONS

Basic:

Plans 1, 2, 4, 5, and 6: Contributions are based on the entry age and class of each member and are required of all members. See section 5 for details on this calculation. Current member rates are shown in Appendix D.

Basic contributions cease when general members are credited with 30 years of service in a contributory plan provided they were members of SamCERA or a reciprocal system on March 7, 1973, and continuously thereafter. All safety members are eligible for the 30-year cessation of contributions. (31625.2, 31664.1)

Plan 7: Members contribute 50% of the aggregate Normal Cost rate for their Plan.

Plan 3: No member contributions are required under Plan 3.

Cost-of-Living:

Plans 1, 2, and 4: All members of Plans 1, 2 and 4 contribute 50% of the cost of COLA benefits in addition to other current member rates and cost sharing, except as described in the following paragraph.

Members of SMCM&VCD do not contribute towards the COLA benefit.

Plans 5 and 6: All members of Plans 5 and 6 contribute 50% of the cost of the COLA.

Plan 7: Members contribute 50% of the aggregate Normal Cost rate for their Plan.

Cost Sharing:

General Members: All members of Plans 1, 2, and 4 (except SMCM&VCD) contribute an additional 3.0% for cost sharing. (31678.2)

All other General members do not participate in cost sharing.

MEMBER CONTRIBUTIONS (Continued)

**Safety
Members:**

Deputy Sheriffs in Plans 1, 2, 4, and 5 contribute the following additional cost sharing rates based on age and service:

If age 45 or older	4.5%
If age is less than 45	
▪ Service is less than 5 years:	3.0%
▪ Service between 5 and 15 years:	3.5%
▪ Service is more than 15 years:	4.5%

Safety members (except Deputy Sheriffs) in Plans 1, 2, and 4 contribute an additional 5.0% cost sharing.

Safety members (except Deputy Sheriffs) in Plan 5 contribute an additional 4.0% cost sharing.

Safety members in Plan 6 and 7 do not participate in cost sharing.

**Probation
Members:**

Members of Plans 1, 2, 4, and 5 contribute an additional 3.5% for cost sharing.

Members of Plans 6 and 7 do not participate in cost sharing.

**Interest
Crediting:**

Interest is credited to contributions semiannually on June 30 and December 31 at an interest rate set by the Board of Retirement on amounts that have been on deposit for at least six months.

(31591, 31700)

**Employer
Pick-Up:**

Effective with the first pay period in July 2016, no employer provides for employer pick-up contributions.

EMPLOYER CONTRIBUTIONS

The employer (County, Courts, or District) contributes to the retirement fund a percent of the total compensation provided for all members based on an actuarial investigation, valuation and recommendation of the actuary. (31453, 31453.5, 31453.6, 31454 31581)

SERVICE RETIREMENT ALLOWANCE

Eligibility:

General Members: All members of Plans 1, 2, 4, and 5 are eligible to retire after meeting one of the following age and service requirements: (31672)

- Age 50 with 10 years of service*;
- Any age with 30 years of service; or
- Age 70 regardless of service.

Plan 3 members are eligible to retire at age 65 with 10 years of service. A reduced benefit is also payable at age 55 with 10 years of service. (31496)

Plan 7 members are eligible to retire at age 52 with 5 years of service.

Safety and Probation Members: Members of all plans except Plan 7 are eligible to retire after meeting one of the following age and service requirements: (31663.25)

- Age 50 with 10 years of service;
- Any age with 20 years of service.

Plan 7 members are eligible to retire at age 50 with 5 years of service. (31672.1)
 * For part-time employees, age 50 is replaced with age 55.

Final Average Compensation:

Plans 1 and 2: Monthly average of a member's highest 12 consecutive months of compensation. (31462.1)

All other Plans: Monthly average of a member's highest compensation during any three years. Years do not have to be consecutive, except for Plan 7. [31462, 31496.3(d)]

Compensation Limit:

All Plans, except Plan 7: The amount of compensation that is taken into account in computing benefits payable to any person who first becomes a member on or after July 1, 1996, shall not exceed the dollar limitations in Section 401(a)(17) of Title 26 of the US Code. (31671)

SERVICE RETIREMENT ALLOWANCE (Continued)

Plan 7: The amount of compensation taken into account shall not exceed the following applicable percentage of the Social Security Taxable Wage Base:

- 100% for a member covered by Social Security (County and Courts General members);
- 120% for a member not covered by Social Security (all other members).

The amount of compensation taken into account shall be adjusted based on changes in the Consumer Price Index for All Urban Consumers. Adjustments shall be effective annually on January 1.

Monthly Allowance:

Plans 1, 2, 4, and 5:	<p>General members: $1/60 \times \text{Final Average Compensation} \times \text{General age factor} \times \text{years of service.}$</p> <p>Safety & Probation members: $3\% \times \text{Final Average Compensation} \times \text{Safety age factor} \times \text{years of service.}$</p>	<p>(31676.14) – Plans 1, 2 & 4 (31676.1) – Plan 5 (31664.1) – Plans 1, 2 & 4 (31664.2) – Plan 5</p>
Plan 6:	<p>Safety & Probation members: $2\% \times \text{Final Average Compensation} \times \text{Safety age factor} \times \text{years of service.}$</p>	<p>(31664)</p>
Plan 7:	<p>General members: $2\% \times \text{Final Average Compensation} \times \text{General age factor} \times \text{years of service.}$</p> <p>Safety and Probation members: $2\% \times \text{Final Average Compensation} \times \text{Safety age factor} \times \text{years of service.}$</p>	<p>7522.20(a) 7522.25(d)</p>
Plan 3:	<p>General members: (a)+(b)-(c) where:</p> <p>(a) $2\% \times \text{Final Average Compensation} \times (\text{Years of Service, (up to 35 years), plus}$</p> <p>(b) $1\% \times \text{Final Average Compensation} \times \text{Years of Service in excess of 35 (up to 10)}$</p> <p>(c) $\text{Estimated Primary Insurance Amount (PIA)} \times \text{Years of Covered Service (up to 35) divided by 35.}$</p> <p>The PIA is calculated based on certain assumptions specified by statute, and an assumed Social Security retirement age of 65.</p> <p>If retirement occurs prior to age 65, benefit amount is adjusted by an actuarial equivalent factor (see Sample Plan Age Factors).</p>	<p>(31496)</p>

SERVICE RETIREMENT ALLOWANCE (Continued)

Percentage of Final Average Compensation at Sample Ages:

Plan	Age 50	Age 55	Age 60	Age 65	
County General 1,2&4	1.475%	1.948%	2.440%	2.611%	(31676.14)
SMCM&VCD*	1.475%	1.948%	2.440%	2.611%	(31676.14)
General Plan 3**	N/A	0.780%	1.220%	2.000%	(31496)
General Plan 5	1.182%	1.492%	1.917%	2.432%	(31676.1)
General Plan 7	N/A	1.300%	1.800%	2.300%	(7522.20(a))
Safety/Probation 1,2,&4	3.000%	3.000%	3.000%	3.000%	(31664.1)
Safety/Probation Plan 5	2.290%	3.000%	3.000%	3.000%	(31664.2)
Safety/Probation Plan 6	2.000%	2.620%	2.620%	2.620%	(31664)
Safety/Probation Plan 7	2.000%	2.500%	2.700%	2.700%	(7522.25(d))

* As of the June 30, 2010 actuarial valuation, SMCM&VCD has adopted the same benefit structure as County General.

** Prior to reduction for PIA benefit. Actual percentage will be less.

Maximum

Allowance: Allowance may not exceed 100% of Final Average Compensation.

All Plans

Except 3:

Plan 3: The sum of the normal retirement allowance and the estimated PIA cannot exceed 70% of Final Average Compensation for a member with 35 or less years of service, and cannot exceed 80% of Final Average Compensation if service exceeds 35 years. (31496)

SERVICE RETIREMENT ALLOWANCE (Continued)

Unmodified Retirement Allowance (Normal Form):

All Plans Except 3:	Life Annuity payable to retired member with 60% continuance to an eligible survivor (or eligible children).	(31760.1)
Plan 3:	Life Annuity payable to retired member with 50% continuance to an eligible survivor (or eligible children).	(31497.71)
	Eligible survivor includes certain domestic partners.	(31780.2)

Optional Retirement Allowance:

A member may elect to have the actuarial equivalent of the service or disability retirement allowance applied to a lesser retirement allowance during the retired member's life in order to provide an optional survivor allowance.

Option 1:	Member's allowance is reduced to pay a cash refund of any unpaid annuity payments (up to the amount of the member's contributions at retirement) to the member's estate or to a beneficiary having an insurable interest in the life of the member.	(31761)
Option 2:	100% of member's reduced allowance is payable to an eligible survivor or beneficiary having an insurable interest in the life of the member.	(31762)
Option 3:	50% of member's reduced allowance is payable to an eligible survivor or beneficiary having an insurable interest in the life of the member.	(31763)
Option 4:	Other % of member's reduced allowance is payable to an eligible survivor or beneficiary(ies) having an insurable interest in the life of the member.	(31764)

For Options 2, 3 or 4, the continuance will not be paid if the member revokes their election and names another beneficiary after retirement. (31782)

All Allowances: All allowances are made on a pro rata basis (based on the number of days in that month) if not in effect for the entire month of retirement. For deaths that occur mid-month, the full month's payment is made. (31600)

SERVICE-CONNECTED DISABILITY RETIREMENT ALLOWANCE

<u>Eligibility:</u>		
All Plans Except 3:	Any age or years of service; disability must result from occupational injury or disease, and member must be permanently incapacitated for the performance of duty.	(31720, 31720.5, 31720.6, 31720.7, 31720.9)
Plan 3:	Not available under Plan 3.	(31487)
<u>Monthly Allowance:</u>	Greater of (1) 50% of Final Average Compensation or (2) the service retirement allowance, if eligible to retire.	(31727.4)
<u>Normal Form Of Payment:</u>	Life Annuity with 100% continuance to a surviving spouse (or eligible children).	(31760, 31786)

NONSERVICE-CONNECTED DISABILITY RETIREMENT ALLOWANCE

<u>Eligibility:</u>		
All Plans Except 3:	Any age with five years of service and permanently incapacitated for the performance of duty.	(31720, 31836)
Plan 3:	Not available under Plan 3.	(31487)
<u>Monthly Allowance:</u>	The monthly allowance is equal to a service retirement allowance if the member is eligible to retire, otherwise allowance equals (a) or (b) where:	(31726, 31726.5)
General Members:	(a) 90% of 1/60th of Final Average Compensation x years of service, if member must rely on service in another retirement system in order to be eligible to retire, or allowance exceeds 1/3 of Final Average Compensation.	(31727(a))
	(b) 90% of 1/60th of Final Average Compensation x years of service projected to age 65, not to exceed 1/3 of Final Average Compensation.	(31727(b))
Safety Members:	1/60 is replaced by 1/50 and age 65 is replaced by age 55 in (a) and (b) above.	(31727.2)
<u>Normal Form Of Payment:</u>	Life Annuity with 60% continuance to a surviving spouse (or eligible children).	(31760.1)

SERVICE-CONNECTED DEATH BENEFITS

Eligibility

All Plans Except 3: Active members who die in service as a result of injury or disease arising out of and in the course of employment. (31787)

Plan 3: Not available under Plan 3. (31487)

Monthly Allowance: An annual death allowance is payable monthly to an eligible survivor (or eligible children) equal to 50% of the member's Final Average Compensation. (31787)

Optional Combined Benefit: (31781.3)

In lieu of the monthly allowance above, an eligible survivor may elect:

- (a) A lump sum equal to 1/12 of the compensation earned in the preceding 12 months x years of service (benefit not to exceed 50% of the 12 months' compensation), plus
- (b) A monthly payment equal to 50% of the member's Final Average Compensation, reduced by a monthly amount, which is the actuarial equivalent of (a) above based on the age of eligible survivor.

Death Benefit (Lump Sum): (31781)

The member's normal contributions and interest, plus 1/12 of the compensation earned in the preceding 12 months x years of service (benefit not to exceed 50% of the 12 months' compensation).

Additional Allowance for Children: (31787.5)

25% of death allowance (whether or not the monthly allowance or combined benefit is chosen) for one child, 40% for two children, and 50% for three or more children.

Additional Amount for Spouse of Safety Member: (31787.6)

An eligible survivor of a safety member is also entitled to receive a lump sum death benefit equal to 12 x monthly rate of compensation at the time of member's death in addition to all other benefits.

Note: For valuation purposes, an unmarried member is assumed to take the lump sum benefit. A married member is assumed to take the monthly allowance or the lump sum, whichever is more valuable.

NONSERVICE-CONNECTED DEATH BENEFITS

Eligibility:

All Plans Except 3: Active members who die while in service or while physically or mentally incapacitated for the performance of duty. (31780)

Plan 3: Not available under Plan 3.

Death Benefit (Lump Sum): (31781)

The member's normal contributions and interest, plus 1/12 of the Compensation earned in preceding 12 months x the number of completed years of service (benefit not to exceed 50% of the 12 months' compensation).

Optional Death Benefit:

In lieu of the lump sum death benefit, several optional death benefits are available to provide flexibility to survivors, as follows.

First Optional Death Benefit: (31781.1)

If a member who would have been entitled to a nonservice-connected disability retirement allowance dies prior to retirement as a result of such disability, the eligible survivor (or eligible children) may elect to receive an optional death allowance equal to 60% of the monthly retirement allowance to which the member would have been entitled as of the date of death.

Second Optional Death Benefit: (31781.2, 31765.2)

If a member dies prior to reaching the minimum retirement age but has 10 or more years of service, an eligible survivor (or eligible children) may elect to leave the amount of the death benefit on deposit until the earliest date the member could have retired and at that time receive the allowance provided for in 31765.2 (a 60% continuance).

Third Optional Death Benefit:

An eligible survivor of a member who dies after five years of service may elect a combined benefit equal to:

(a) A lump sum equal to 1/12 of the compensation earnable in the preceding 12 months x the number of completed years of service (benefit not to exceed 50% of the 12 months' compensation), plus (31781.3)

(b) A monthly payment equal to 60% of the monthly retirement allowance to which the member would have been entitled if the member retired or had been retired for a nonservice-connected disability as of the date of death, reduced by a monthly amount which is the actuarial equivalent of (a) above based on the age of the eligible survivor. (31781.1)

NONSERVICE-CONNECTED DEATH BENEFITS (Continued)

Fourth Optional Death Benefit:

If a member dies while eligible for a service retirement and the eligible survivor is designated as beneficiary, the spouse (or eligible children) may elect to receive 60% of the monthly retirement allowance to which the member would have been entitled as of the date of death. (31765.1)

Note for Third and Fourth Optional Death Benefits: In order to leave the eligible survivor the greatest benefit, the member is assumed to have retired for nonservice-connected disability, elected the Option 2 retirement allowance, and then died the next day.

Fifth Optional Death Benefit:

If a member dies while eligible for a service retirement and the eligible survivor is designated as beneficiary and survives the member by not less than 30 days the spouse (or eligible children) may elect to receive the same retirement allowance as the spouse would have received had the member retired on the date of death and selected Option 3. (31765)

Note: For valuation purposes, an unmarried member is assumed to take the lump sum benefit. A married member is assumed to receive an annuity or a lump sum, whichever is more valuable. The annuity is equal to the Option 2-100% Continuance calculation for the larger of either (1) a non-service connected disability benefit or (2) the member's earned service retirement benefit (if eligible).

DEFERRED RETIREMENT BENEFITS

Eligibility:

All Plans, except Plans 3 and 7: Age 50 with 10 years of membership. (31700)

Member contributions must be left on deposit (except Plan 3) and the member must have terminated with five years of service or entered a reciprocal agency. Members are eligible for service retirement when they would have reached eligibility if they would have remained in an active position.

Plan 3: Age 55 with 10 years of service. (31496)

Plan 7: General members:

Age 52 with 5 years of service.

Safety and Probation members:

Age 50 with 5 years of service.

All Plans: Member contributions must be left on deposit and the member must have terminated with 5 years of service or entered a reciprocal agency. Members (except for Plan 7) are eligible for service retirement when they would have reached eligibility if they would have remained in an active position.

Monthly Allowance:

All Plans Except 3: Same as service retirement allowance; payable any time after the member would have been eligible for service retirement. (31703, 31704, 31705)

If a terminated member dies before the effective date of the deferred retirement allowance, the member's accumulated contributions are paid to the estate or to the named beneficiary. (31702)

Plan 3: Same as service retirement allowance at normal retirement age 65 or in an actuarially equivalent reduced amount at early retirement, after age 55. (31496)

No benefit is paid for death while inactive.

COST-OF-LIVING INCREASES

Cost-of-living increases (or decreases) are applied to all retirement allowances (service and disability), optional death allowances, and annual death allowances effective April 1, based on changes in the Consumer Price Index (CPI) from the previous January 1 to the current January 1, to the nearest ½ of 1%. (31870, 31870.1, 31870.2, 31874.4)

Plan 1: General & Safety (31870.2)
 Members (and their beneficiaries) are limited to a maximum 5% cost-of-living increase.

Probation (31870.1)
 Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase.

Plan 2: All members (31870.1)
 Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase.

Plan 3: Plan 3 does not have a COLA. (31487)

Other Plans: All members (31870)
 Members (and their beneficiaries) are limited to a maximum 2% cost-of-living increase.

COLA Bank

Plan 1: When the CPI exceeds the applicable percentage (3% or 5%), the difference between the actual CPI and the maximum cost-of-living increase given in any year is credited to the COLA Accumulation (COLA Bank). It may be used in future years to provide cost-of-living increases when the CPI falls below the applicable percentage. (31870.1, 31870.2)

All other Plans do not have a COLA bank.

Other Plans: (31874.4)

Appendix C Valuation Data and Schedules

Data on SamCERA membership as of June 30, 2020 was supplied to us by SamCERA staff. On the following table, Exhibit C-1, we present a summary of SamCERA membership at June 30, 2020 for active members. Similar information is shown in Exhibit C-2 for inactive members and Exhibits C-3a and C-3b for retired members.

Note that salary amounts shown are annualized amounts based on the biweekly pay for the period prior to the valuation date. If the annualized amount was less than the total prior earnings, total prior year earnings were used.

Additional statistical data on both active and retired members is shown in the following tables.

Exhibit C-4: Age, Service, Compensation Distribution of Active Members

Exhibit C-5: Age, Retirement Year, Benefit Amount and Plan Distribution of Retired Members

Exhibits C-4 and C-5 are shown for all plans combined as well as for classification separately.

Exhibit C-1
SamCERA Membership – Active Members as of June 30, 2020

	Total Number	Annual Salary	Average Age	Average Monthly Salary	Average Credited Service
General Members					
Plan 1	5	\$ 666,140	65.6	\$ 11,102	37.2
Plan 2	409	52,344,200	56.8	10,665	27.3
Plan 3	56	5,524,555	53.9	8,221	16.2
Plan 4	1,739	201,810,749	50.1	9,671	15.5
Plan 5	283	36,115,557	45.8	10,635	5.8
Plan 7	2,163	200,531,384	39.4	7,726	3.2
Total	4,655	\$ 496,992,584	45.5	\$ 8,897	10.3
Safety Members					
Plan 1	-	\$ -	-	\$ -	-
Plan 2	30	5,444,925	53.4	15,125	24.8
Plan 4	198	31,371,664	47.1	13,204	15.1
Plan 5	63	9,349,509	41.9	12,367	5.9
Plan 7	231	26,557,917	34.6	9,581	3.4
Total	522	\$ 72,724,015	41.3	\$ 11,610	9.4
Probation Members					
Plan 1	-	\$ -	-	\$ -	-
Plan 2	12	1,465,025	50.0	10,174	25.8
Plan 4	149	17,571,086	46.2	9,827	17.1
Plan 5	8	896,964	36.8	9,343	7.7
Plan 6	-	-	-	-	-
Plan 7	54	4,923,188	32.9	7,598	3.6
Total	223	\$ 24,856,263	42.9	\$ 9,289	14.0
Grand Total	5,400	\$ 594,572,862	45.0	\$ 9,176	10.3

Exhibit C-2
SamCERA Membership – Inactive Members as of June 30, 2020

	Deferred Vested Number	Deferred Vested Average Age	Contingent Vested Number	Contingent Vested Average Age
General Members				
Plan 1	6	65.7	-	-
Plan 2	202	56.6	47	56.5
Plan 3	70	58.1	-	-
Plan 4	586	46.8	189	48.6
Plan 5	33	43.6	64	44.0
Plan 7	42	36.5	489	39.3
Total	939	49.3	789	43.0
Safety Members				
Plan 1	1	69.0	-	-
Plan 2	7	51.3	8	55.5
Plan 4	30	45.6	15	50.7
Plan 5	2	49.0	7	41.3
Plan 7	3	31.3	17	35.5
Total	43	46.2	47	44.6
Probation Members				
Plan 1	-	-	-	-
Plan 2	8	53.4	8	51.4
Plan 4	30	44.0	9	48.7
Plan 5	-	-	1	40.0
Plan 6	-	-	-	-
Plan 7	1	35	7	30.6
Total	39	45.7	25	44.1
Grand Total	1,021	49.0	861	43.1

Exhibit C-3a
SamCERA Membership – Retired Members as of June 30, 2020

	Number	Average Age	Monthly Allowance	Average Monthly Benefit
General Members				
Plan 1	1,299	80.3	\$ 5,288,347	\$ 3,824
Plan 2	2,113	70.0	7,589,905	3,441
Plan 3	144	72.0	190,051	541
Plan 4	970	66.1	2,205,158	2,246
Plan 5	12	59.1	20,351	1,454
Plan 7	12	63.3	13,634	1,136
Total	4,550	72.1	\$ 15,307,446	\$ 3,364
Safety Members				
Plan 1	266	75.6	\$ 1,943,226	\$ 7,278
Plan 2	242	62.7	1,987,515	8,047
Plan 4	119	57.6	529,509	4,450
Plan 5	3	55.7	5,451	1,817
Plan 7	2	61.0	3,186	1,593
Total	632	67.1	\$ 4,468,887	\$ 7,071
Probation Members				
Plan 1	95	77.4	\$ 402,484	\$ 4,025
Plan 2	117	61.5	650,297	5,202
Plan 4	59	57.7	249,050	3,953
Plan 7	1	56.0	2,053	2,053
Total	272	66.2	\$ 1,303,884	\$ 4,794
Grand Total	5,454	71.3	\$ 21,080,218	\$ 3,865

Exhibit C-3b
SamCERA Membership – Retired Members as of June 30, 2020
Subtotaled by Class and Retirement Type

<u>Plan</u>	<u>Retirement Type</u>	<u>Number</u>	<u>Monthly Benefit</u>	<u>Average Monthly Benefit</u>
<i>General Plans:</i>				
	Healthy	3,654	\$ 13,017,285	\$ 3,252
	Disabled	367	1,156,445	3,043
	Beneficiaries	529	1,133,716	2,007
	Total	<u>4,550</u>	<u>\$ 15,307,446</u>	<u>\$ 3,364</u>
<i>Safety Plans:</i>				
	Healthy	409	\$ 3,329,873	\$ 8,063
	Disabled	119	722,317	6,019
	Beneficiaries	104	416,698	3,969
	Total	<u>632</u>	<u>\$ 4,468,887</u>	<u>\$ 7,071</u>
<i>Probation Plans:</i>				
	Healthy	229	\$ 1,157,113	\$ 4,781
	Disabled	20	90,664	4,317
	Beneficiaries	23	56,108	2,158
	Total	<u>272</u>	<u>\$ 1,303,884</u>	<u>\$ 4,794</u>
<i>Grand Totals</i>				
	Healthy	4,292	\$ 17,504,271	\$ 4,078
	Disabled	506	1,969,425	3,892
	Beneficiaries	656	1,606,522	2,449
	Total	<u>5,454</u>	<u>\$ 21,080,218</u>	<u>\$ 3,865</u>

Exhibit C-4
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2020 – All Members

Count										
Age	Years of Service									Total Count
	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	25	20	0	0	0	0	0	0	0	45
25-29	117	256	30	0	0	0	0	0	0	403
30-34	92	376	177	22	1	0	0	0	0	668
35-39	71	312	219	138	34	2	0	0	0	776
40-44	45	199	159	193	142	26	0	0	0	764
45-49	36	141	124	167	200	116	19	0	0	803
50-54	27	122	98	133	163	136	68	12	0	759
55-59	25	68	89	100	103	96	58	56	9	604
60-64	13	46	69	79	73	47	30	30	8	395
65 & Over	5	18	31	38	41	17	8	10	15	183
Total Count	456	1,558	996	870	757	440	183	108	32	5,400

Compensation										
Age	Years of Service									Average Comp.
	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	\$73,636	\$83,562	-	-	-	-	-	-	-	\$78,047
25-29	78,159	88,487	98,765	-	-	-	-	-	-	86,254
30-34	83,715	95,062	107,875	111,148	133,167	-	-	-	-	97,481
35-39	90,814	99,070	111,624	115,505	102,931	117,189	-	-	-	104,996
40-44	92,108	101,348	110,651	121,023	121,468	105,062	-	-	-	111,576
45-49	100,047	100,041	122,981	120,168	126,353	120,618	117,573	-	-	117,710
50-54	83,981	101,291	126,939	123,402	119,318	126,795	122,727	139,440	-	118,826
55-59	106,925	100,459	110,395	119,297	121,331	118,349	125,606	131,905	97,668	117,001
60-64	104,825	97,289	117,617	121,708	107,879	123,587	142,133	135,449	122,187	117,866
65 & Over	84,334	114,134	114,582	131,235	103,969	167,053	103,502	146,331	141,129	123,092
Avg. Annual Compensation	\$86,857	\$96,900	\$113,733	\$120,407	\$119,202	\$123,209	\$125,445	\$135,062	\$124,170	\$110,106

Exhibit C-4a
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2020 – General Members

Count										
Age	Years of Service									Total Count
	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	21	11	0	0	0	0	0	0	0	32
25-29	100	191	20	0	0	0	0	0	0	311
30-34	85	328	131	15	1	0	0	0	0	560
35-39	68	283	186	101	29	1	0	0	0	668
40-44	41	188	145	167	105	22	0	0	0	668
45-49	34	135	98	137	148	76	14	0	0	642
50-54	26	111	82	125	137	113	54	11	0	659
55-59	25	60	75	98	100	86	56	53	9	562
60-64	13	46	63	75	72	44	30	30	8	381
65 & Over	5	17	29	35	36	17	8	10	15	172
Total Count	418	1,370	829	753	628	359	162	104	32	4,655

Compensation										
Age	Years of Service									Average Comp.
	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	\$72,642	\$67,921	-	-	-	-	-	-	-	\$71,019
25-29	76,105	82,839	88,790	-	-	-	-	-	-	81,057
30-34	83,390	92,675	101,720	102,079	133,167	-	-	-	-	93,706
35-39	90,857	97,359	108,204	109,485	97,892	94,196	-	-	-	101,569
40-44	92,527	99,990	107,312	119,241	114,592	96,023	-	-	-	108,098
45-49	99,176	98,545	118,074	116,578	122,388	109,442	111,078	-	-	112,467
50-54	84,162	98,412	119,470	121,151	116,947	118,460	108,671	129,555	-	113,435
55-59	106,925	96,799	102,602	119,406	121,434	116,549	123,993	131,841	97,668	115,400
60-64	104,825	97,289	112,999	118,326	107,352	121,753	142,133	135,449	122,187	116,071
65 & Over	84,334	111,933	111,756	126,470	102,862	167,053	103,502	146,331	141,129	121,762
Avg. Annual Compensation	\$86,636	\$94,694	\$108,818	\$117,689	\$115,789	\$117,355	\$120,117	\$134,034	\$124,170	\$106,765

Exhibit C-4b
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2020 – Safety Members

Count										
Age	Years of Service									Total Count
	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	4	9	0	0	0	0	0	0	0	13
25-29	13	51	9	0	0	0	0	0	0	73
30-34	5	39	36	6	0	0	0	0	0	86
35-39	3	24	24	19	3	1	0	0	0	74
40-44	4	10	12	13	15	3	0	0	0	57
45-49	1	6	23	18	25	18	2	0	0	93
50-54	0	11	15	6	12	14	10	1	0	69
55-59	0	8	14	1	1	7	2	2	0	35
60-64	0	0	6	4	1	3	0	0	0	14
65 & Over	0	1	2	3	2	0	0	0	0	8
Total Count	30	159	141	70	59	46	14	3	0	522

Compensation										
Age	Years of Service									Average Comp.
	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	\$78,854	\$102,678	-	-	-	-	-	-	-	\$95,348
25-29	94,182	109,925	121,309	-	-	-	-	-	-	108,525
30-34	105,366	115,080	130,729	135,540	-	-	-	-	-	122,493
35-39	89,842	121,293	140,489	152,541	144,726	140,183	-	-	-	135,472
40-44	87,813	128,847	152,389	152,471	167,116	162,722	-	-	-	148,165
45-49	146,841	133,701	146,265	155,256	161,495	160,619	149,006	-	-	154,132
50-54	-	130,339	166,125	176,826	142,009	185,391	199,074	248,180	-	167,030
55-59	-	127,903	152,143	131,986	133,205	140,432	170,772	158,785	-	144,587
60-64	-	-	166,113	185,116	145,776	150,488	-	-	-	166,741
65 & Over	-	151,549	155,553	186,823	139,997	-	-	-	-	162,890
Avg. Annual Compensation	\$94,474	\$117,161	\$143,916	\$156,888	\$156,634	\$164,119	\$187,879	\$188,583	-	\$139,318

Exhibit C-4c
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2020 – Probation Members

Count										
Age	Years of Service									Total Count
	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	0	0	0	0	0	0	0	0	0	0
25-29	4	14	1	0	0	0	0	0	0	19
30-34	2	9	10	1	0	0	0	0	0	22
35-39	0	5	9	18	2	0	0	0	0	34
40-44	0	1	2	13	22	1	0	0	0	39
45-49	1	0	3	12	27	22	3	0	0	68
50-54	1	0	1	2	14	9	4	0	0	31
55-59	0	0	0	1	2	3	0	1	0	7
60-64	0	0	0	0	0	0	0	0	0	0
65 & Over	0	0	0	0	3	0	0	0	0	3
Total Count	8	29	26	47	70	35	7	1	0	223

Compensation										
Age	Years of Service									Average Comp.
	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	-	-	-	-	-	-	-	-	-	-
25-29	\$77,446	\$87,445	\$95,387	-	-	-	-	-	-	\$85,758
30-34	43,399	95,306	106,232	100,823	-	-	-	-	-	95,804
35-39	-	89,246	105,325	110,187	113,303	-	-	-	-	106,003
40-44	-	81,744	102,265	112,469	123,160	130,923	-	-	-	117,662
45-49	82,867	-	104,773	108,521	115,547	126,496	126,926	-	-	117,395
50-54	79,273	-	151,549	103,832	123,066	140,300	121,613	-	-	126,147
55-59	-	-	-	95,917	110,201	118,414	-	81,510	-	107,582
60-64	-	-	-	-	-	-	-	-	-	-
65 & Over	-	-	-	-	93,234	-	-	-	-	93,234
Avg. Annual Compensation	\$69,840	\$89,999	\$106,770	\$109,619	\$118,270	\$129,480	\$123,890	81,510	-	\$111,463

Exhibit C-5
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020 – All Plans Combined

Age	Retirement Year								Total Count	Average Monthly Benefit
	Pre-1990	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24		
Under 35	-	-	-	-	1	4	2	-	7	\$ 1,346
35-39	-	-	1	1	-	2	3	1	8	4,144
40-44	-	-	-	-	1	6	14	-	21	3,051
45-49	-	-	-	-	9	7	23	3	42	3,815
50-54	-	-	2	7	8	13	130	27	187	4,330
55-59	-	-	6	10	18	89	249	29	401	4,268
60-64	-	1	11	17	72	200	347	66	714	4,272
65-69	-	6	10	75	196	336	374	22	1,019	4,148
70-74	7	16	84	169	309	329	191	10	1,115	4,066
75-79	10	50	132	200	266	130	62	7	857	3,990
80-84	31	85	103	127	73	35	21	4	479	3,189
85-89	43	62	97	37	26	26	18	3	312	2,732
90-94	77	45	34	9	5	7	11	1	189	2,169
95-99	48	9	12	7	4	2	6	1	89	2,729
100 & Over	8	1	3	-	-	1	1	-	14	2,086
Total Count	224	275	495	659	988	1,187	1,452	174	5,454	
Avg Monthly Benefit	\$ 2,235	\$ 2,631	\$ 2,795	\$ 3,666	\$ 4,541	\$ 3,900	\$ 4,137	\$ 5,366		\$ 3,865

Exhibit C-5a
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020 – General Plans Combined

Age	Retirement Year								Total Count	Average Monthly Benefit
	Pre-1990	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24		
Under 35	-	-	-	-	1	4	2	-	7	\$ 1,346
35-39	-	-	1	1	-	2	1	1	6	4,601
40-44	-	-	-	-	1	3	9	-	13	2,930
45-49	-	-	-	-	5	6	9	-	20	2,951
50-54	-	-	1	4	6	10	53	14	88	2,443
55-59	-	-	4	5	9	58	168	21	265	2,916
60-64	-	-	8	9	52	154	309	61	593	3,673
65-69	-	5	8	71	150	303	347	22	906	3,647
70-74	3	7	70	114	275	311	178	8	966	3,708
75-79	2	39	81	147	251	116	52	6	694	3,588
80-84	24	72	84	115	69	31	19	2	416	2,943
85-89	37	61	90	34	26	24	14	3	289	2,615
90-94	74	45	34	9	5	7	11	1	186	2,098
95-99	47	9	11	7	4	2	6	1	87	2,660
100 & Over	8	1	3	-	-	1	1	-	14	2,086
Total Count	195	239	395	516	854	1,032	1,179	140	4,550	
Avg Monthly Benefit	\$ 1,970	\$ 2,293	\$ 2,262	\$ 3,008	\$ 4,096	\$ 3,427	\$ 3,571	\$ 4,888		\$ 3,364

Exhibit C-5b
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020 – Safety Plans Combined

Age	Retirement Year								Total Count	Average Monthly Benefit
	Pre-1990	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24		
Under 35	-	-	-	-	-	-	-	-	-	\$ -
35-39	-	-	-	-	-	-	2	-	2	2,772
40-44	-	-	-	-	-	2	3	-	5	3,302
45-49	-	-	-	-	4	1	5	2	12	4,539
50-54	-	-	1	3	2	3	42	6	57	6,524
55-59	-	-	2	4	8	20	52	6	92	7,350
60-64	-	1	3	5	16	30	31	4	90	7,910
65-69	-	1	2	4	37	23	23	-	90	8,613
70-74	4	9	11	49	21	9	12	1	116	6,872
75-79	8	10	36	33	7	9	7	1	111	6,466
80-84	7	7	12	4	2	3	2	2	39	5,997
85-89	6	1	2	1	-	1	2	-	13	5,933
90-94	3	-	-	-	-	-	-	-	3	6,588
95-99	1	-	1	-	-	-	-	-	2	5,739
100 & Over	-	-	-	-	-	-	-	-	-	-
Total Count	29	29	70	103	97	101	181	22	632	
Avg Monthly Benefit	\$ 4,017	\$ 5,437	\$ 5,460	\$ 6,927	\$ 8,554	\$ 7,838	\$ 7,177	\$ 8,125		\$ 7,071

Exhibit C-5c
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020 – Probation Plans Combined

Age	Retirement Year								Total Count	Average Monthly Benefit
	Pre-1990	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24		
Under 35	-	-	-	-	-	-	-	-	-	\$ -
35-39	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	1	2	-	3	3,155
45-49	-	-	-	-	-	-	9	1	10	4,676
50-54	-	-	-	-	-	-	35	7	42	5,305
55-59	-	-	-	1	1	11	29	2	44	5,963
60-64	-	-	-	3	4	16	7	1	31	5,178
65-69	-	-	-	-	9	10	4	-	23	6,411
70-74	-	-	3	6	13	9	1	1	33	4,681
75-79	-	1	15	20	8	5	3	-	52	4,062
80-84	-	6	7	8	2	1	-	-	24	2,887
85-89	-	-	5	2	-	1	2	-	10	1,947
90-94	-	-	-	-	-	-	-	-	-	-
95-99	-	-	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-	-	-
Total Count	-	7	30	40	37	54	92	12	272	
Avg Monthly Benefit	\$ -	\$ 2,545	\$ 3,594	\$ 3,762	\$ 4,278	\$ 5,566	\$ 5,418	\$ 5,878		\$ 4,794

Appendix D Member Contribution Rates

This section illustrates the member basic contribution rates and COLA sharing contribution rates by entry age for Plans 1 through 6. For different COLA sharing percentages, the COLA contribution rates may be adjusted ratably, and should be rounded to two decimal places.

Member contribution rates for Plan 7 are not defined by entry age. Plan 7 members contribute 50% of the total Normal Cost rate. For the 2021-2022 fiscal year, Plan 7 member contribution rates are:

- General Plan 7 members: 8.75%
- SMCM&VCD Plan 7 members: 9.67%
- Safety Plan 7 members: 14.72%
- Probation Plan 7 members: 14.85%

Please refer to Appendix B for a detailed description of member contribution rates.

**Exhibit D-1
 General Member Contribution Rates (including SMCM&VCD)**

Entry Age ⁽¹⁾	Basic Member Rates				
	General & SMCM&VCD			General	SMCM&VCD
	Plans 1&2	Plan 4	Plan 5	Plan 7	Plan 7
16	6.20%	5.99%	5.20%	8.75%	9.67%
17	6.31%	6.10%	5.29%	8.75%	9.67%
18	6.42%	6.20%	5.38%	8.75%	9.67%
19	6.53%	6.31%	5.48%	8.75%	9.67%
20	6.64%	6.42%	5.57%	8.75%	9.67%
21	6.75%	6.53%	5.67%	8.75%	9.67%
22	6.87%	6.64%	5.76%	8.75%	9.67%
23	6.99%	6.75%	5.86%	8.75%	9.67%
24	7.10%	6.87%	5.96%	8.75%	9.67%
25	7.22%	6.98%	6.07%	8.75%	9.67%
26	7.35%	7.10%	6.17%	8.75%	9.67%
27	7.47%	7.22%	6.28%	8.75%	9.67%
28	7.60%	7.34%	6.38%	8.75%	9.67%
29	7.73%	7.47%	6.49%	8.75%	9.67%
30	7.86%	7.59%	6.60%	8.75%	9.67%
31	7.99%	7.72%	6.71%	8.75%	9.67%
32	8.13%	7.85%	6.83%	8.75%	9.67%
33	8.26%	7.99%	6.94%	8.75%	9.67%
34	8.40%	8.12%	7.06%	8.75%	9.67%
35	8.55%	8.26%	7.18%	8.75%	9.67%
36	8.69%	8.40%	7.30%	8.75%	9.67%
37	8.85%	8.55%	7.42%	8.75%	9.67%
38	9.00%	8.70%	7.55%	8.75%	9.67%
39	9.16%	8.85%	7.68%	8.75%	9.67%
40	9.32%	9.01%	7.81%	8.75%	9.67%
41	9.49%	9.16%	7.94%	8.75%	9.67%
42	9.66%	9.32%	8.08%	8.75%	9.67%
43	9.83%	9.47%	8.22%	8.75%	9.67%
44	10.00%	9.63%	8.37%	8.75%	9.67%
45	10.16%	9.77%	8.52%	8.75%	9.67%
46	10.33%	9.91%	8.66%	8.75%	9.67%
47	10.49%	10.04%	8.81%	8.75%	9.67%
48	10.63%	10.16%	8.96%	8.75%	9.67%
49	10.77%	10.26%	9.10%	8.75%	9.67%
50	10.90%	10.32%	9.24%	8.75%	9.67%
51	11.00%	10.34%	9.37%	8.75%	9.67%
52	11.06%	10.34%	9.49%	8.75%	9.67%
53	11.06%	10.60%	9.60%	8.75%	9.67%
54	11.06%	10.93%	9.70%	8.75%	9.67%
55	11.06%	10.93%	9.76%	8.75%	9.67%
56	11.06%	10.93%	9.78%	8.75%	9.67%
57	11.06%	10.93%	9.78%	8.75%	9.67%
58	11.06%	10.93%	10.02%	8.75%	9.67%
59	11.06%	10.93%	10.34%	8.75%	9.67%
60	11.06%	10.93%	10.34%	8.75%	9.67%

1. For General and SMCM&VCD members entering after age 60, the rate equals the rate at age 60.

Exhibit D-2
Safety/Probation Member Contribution Rates

Entry Age ⁽¹⁾	Basic Member Rates			
	Safety & Probation		Safety	Probation
	Plans 1&2	Plans 4&5&6	Plan 7	Plan 7
16	8.86%	8.53%	14.72%	14.85%
17	8.99%	8.66%	14.72%	14.85%
18	9.12%	8.78%	14.72%	14.85%
19	9.25%	8.91%	14.72%	14.85%
20	9.39%	9.04%	14.72%	14.85%
21	9.52%	9.17%	14.72%	14.85%
22	9.66%	9.31%	14.72%	14.85%
23	9.80%	9.44%	14.72%	14.85%
24	9.94%	9.58%	14.72%	14.85%
25	10.09%	9.72%	14.72%	14.85%
26	10.23%	9.86%	14.72%	14.85%
27	10.38%	10.00%	14.72%	14.85%
28	10.53%	10.15%	14.72%	14.85%
29	10.69%	10.29%	14.72%	14.85%
30	10.84%	10.44%	14.72%	14.85%
31	11.00%	10.60%	14.72%	14.85%
32	11.16%	10.75%	14.72%	14.85%
33	11.33%	10.91%	14.72%	14.85%
34	11.50%	11.07%	14.72%	14.85%
35	11.67%	11.24%	14.72%	14.85%
36	11.85%	11.41%	14.72%	14.85%
37	12.03%	11.58%	14.72%	14.85%
38	12.22%	11.76%	14.72%	14.85%
39	12.40%	11.93%	14.72%	14.85%
40	12.60%	12.10%	14.72%	14.85%
41	12.79%	12.28%	14.72%	14.85%
42	12.98%	12.44%	14.72%	14.85%
43	13.17%	12.59%	14.72%	14.85%
44	13.35%	12.71%	14.72%	14.85%
45	13.51%	12.79%	14.72%	14.85%
46	13.63%	12.81%	14.72%	14.85%
47	13.70%	12.81%	14.72%	14.85%
48	13.70%	13.14%	14.72%	14.85%
49	13.70%	13.55%	14.72%	14.85%
50	13.70%	13.55%	14.72%	14.85%

1. For Safety and Probation members entering after age 50, the rate equals the rate at age 50.

Exhibit D-3
General Member Contribution Rates (except SMCM&VCD)

Entry Age ⁽¹⁾	50% Member COLA Rates			
	Plan 1	Plan 2	Plan 4	Plan 5
16	2.17%	2.14%	1.58%	1.29%
17	2.21%	2.18%	1.61%	1.31%
18	2.25%	2.21%	1.64%	1.33%
19	2.29%	2.25%	1.67%	1.36%
20	2.32%	2.29%	1.70%	1.38%
21	2.36%	2.33%	1.73%	1.40%
22	2.40%	2.37%	1.76%	1.42%
23	2.45%	2.41%	1.79%	1.45%
24	2.49%	2.45%	1.82%	1.47%
25	2.53%	2.49%	1.85%	1.50%
26	2.57%	2.54%	1.88%	1.53%
27	2.61%	2.58%	1.91%	1.55%
28	2.66%	2.62%	1.94%	1.58%
29	2.71%	2.67%	1.98%	1.60%
30	2.75%	2.71%	2.01%	1.63%
31	2.80%	2.76%	2.04%	1.66%
32	2.85%	2.80%	2.08%	1.69%
33	2.89%	2.85%	2.11%	1.72%
34	2.94%	2.90%	2.15%	1.75%
35	2.99%	2.95%	2.18%	1.78%
36	3.04%	3.00%	2.22%	1.81%
37	3.10%	3.05%	2.26%	1.83%
38	3.15%	3.11%	2.30%	1.87%
39	3.21%	3.16%	2.34%	1.90%
40	3.26%	3.22%	2.38%	1.93%
41	3.32%	3.27%	2.42%	1.96%
42	3.38%	3.33%	2.47%	2.00%
43	3.44%	3.39%	2.50%	2.03%
44	3.50%	3.45%	2.55%	2.07%
45	3.56%	3.51%	2.58%	2.11%
46	3.62%	3.56%	2.62%	2.14%
47	3.67%	3.62%	2.66%	2.18%
48	3.72%	3.67%	2.69%	2.22%
49	3.77%	3.72%	2.71%	2.25%
50	3.82%	3.76%	2.73%	2.29%
51	3.85%	3.80%	2.73%	2.32%
52	3.87%	3.82%	2.73%	2.35%
53	3.87%	3.82%	2.80%	2.37%
54	3.87%	3.82%	2.89%	2.40%
55	3.87%	3.82%	2.89%	2.41%
56	3.87%	3.82%	2.89%	2.42%
57	3.87%	3.82%	2.89%	2.42%
58	3.87%	3.82%	2.89%	2.48%
59	3.87%	3.82%	2.89%	2.56%
60	3.87%	3.82%	2.89%	2.56%

1. For General and SMCM&VCD members entering after age 60, the rate equals the rate at age 60.

Exhibit D-4
Safety Member Contribution Rates

Entry Age ⁽¹⁾	50% Member COLA Rates				
	Plan 1	Plan 2	Plan 4	Plan 5	Plan 6
16	4.25%	4.59%	3.34%	2.96%	2.77%
17	4.31%	4.65%	3.39%	3.01%	2.81%
18	4.37%	4.72%	3.44%	3.05%	2.85%
19	4.43%	4.79%	3.49%	3.09%	2.89%
20	4.50%	4.86%	3.54%	3.14%	2.94%
21	4.56%	4.93%	3.59%	3.18%	2.98%
22	4.63%	5.00%	3.64%	3.23%	3.02%
23	4.70%	5.07%	3.69%	3.28%	3.07%
24	4.76%	5.15%	3.75%	3.33%	3.11%
25	4.84%	5.22%	3.80%	3.37%	3.16%
26	4.90%	5.30%	3.86%	3.42%	3.20%
27	4.98%	5.37%	3.91%	3.47%	3.25%
28	5.05%	5.45%	3.97%	3.52%	3.30%
29	5.12%	5.53%	4.03%	3.57%	3.34%
30	5.20%	5.61%	4.09%	3.62%	3.39%
31	5.27%	5.69%	4.15%	3.68%	3.44%
32	5.35%	5.78%	4.21%	3.73%	3.49%
33	5.43%	5.87%	4.27%	3.79%	3.54%
34	5.51%	5.95%	4.33%	3.84%	3.59%
35	5.59%	6.04%	4.40%	3.90%	3.65%
36	5.68%	6.13%	4.47%	3.96%	3.70%
37	5.77%	6.23%	4.53%	4.02%	3.76%
38	5.86%	6.33%	4.60%	4.08%	3.82%
39	5.94%	6.42%	4.67%	4.14%	3.87%
40	6.04%	6.52%	4.74%	4.20%	3.93%
41	6.13%	6.62%	4.81%	4.26%	3.99%
42	6.22%	6.72%	4.87%	4.32%	4.04%
43	6.31%	6.82%	4.93%	4.37%	4.09%
44	6.40%	6.91%	4.97%	4.41%	4.13%
45	6.48%	6.99%	5.01%	4.44%	4.15%
46	6.53%	7.06%	5.01%	4.45%	4.16%
47	6.57%	7.09%	5.01%	4.45%	4.16%
48	6.57%	7.09%	5.14%	4.56%	4.27%
49	6.57%	7.09%	5.30%	4.70%	4.40%
50	6.57%	7.09%	5.30%	4.70%	4.40%

1. For Safety members entering after age 50, the rate equals the rate at age 50.

Exhibit D-5
Probation Member Contribution Rates

Entry Age ⁽¹⁾	50% Member COLA Rates				
	Plan 1	Plan 2	Plan 4	Plan 5	Plan 6
16	4.71%	4.71%	3.38%	2.98%	2.60%
17	4.78%	4.78%	3.44%	3.03%	2.64%
18	4.85%	4.85%	3.48%	3.07%	2.67%
19	4.92%	4.92%	3.53%	3.11%	2.71%
20	5.00%	5.00%	3.59%	3.16%	2.75%
21	5.07%	5.07%	3.64%	3.20%	2.79%
22	5.14%	5.14%	3.69%	3.25%	2.83%
23	5.21%	5.21%	3.74%	3.30%	2.87%
24	5.29%	5.29%	3.80%	3.35%	2.92%
25	5.37%	5.37%	3.86%	3.40%	2.96%
26	5.44%	5.44%	3.91%	3.45%	3.00%
27	5.52%	5.52%	3.97%	3.49%	3.04%
28	5.60%	5.60%	4.03%	3.55%	3.09%
29	5.69%	5.69%	4.08%	3.60%	3.13%
30	5.77%	5.77%	4.14%	3.65%	3.18%
31	5.85%	5.85%	4.21%	3.70%	3.23%
32	5.94%	5.94%	4.26%	3.76%	3.27%
33	6.03%	6.03%	4.33%	3.81%	3.32%
34	6.12%	6.12%	4.39%	3.87%	3.37%
35	6.21%	6.21%	4.46%	3.93%	3.42%
36	6.31%	6.31%	4.53%	3.99%	3.47%
37	6.40%	6.40%	4.59%	4.05%	3.52%
38	6.50%	6.50%	4.67%	4.11%	3.58%
39	6.60%	6.60%	4.73%	4.17%	3.63%
40	6.70%	6.70%	4.80%	4.23%	3.68%
41	6.81%	6.81%	4.87%	4.29%	3.74%
42	6.91%	6.91%	4.93%	4.35%	3.79%
43	7.01%	7.01%	4.99%	4.40%	3.83%
44	7.10%	7.10%	5.04%	4.44%	3.87%
45	7.19%	7.19%	5.07%	4.47%	3.89%
46	7.25%	7.25%	5.08%	4.48%	3.90%
47	7.29%	7.29%	5.08%	4.48%	3.90%
48	7.29%	7.29%	5.21%	4.59%	4.00%
49	7.29%	7.29%	5.38%	4.73%	4.12%
50	7.29%	7.29%	5.38%	4.73%	4.12%

1. For Probation members entering after age 50, the rate equals the rate at age 50.

Appendix E Glossary

The following definitions include excerpts from a list adopted by the major actuarial organizations in the United States. In some cases, the definitions have been modified for specific applicability to SamCERA and include terms used exclusively by SamCERA. Defined terms are capitalized throughout this Appendix.

Accrued Benefit

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

Actuarial Accrued Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

Actuarial Gain (Loss)

A measure of the difference between actual experience and that expected based on a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

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.

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 pension plan.

Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

COLA

Cost of living adjustments to benefit payments are made each April 1. See full description in Appendix B.

County Supplementary Contributions Account (CSCA) Reserve

This is a reserve for supplemental contributions from the County of San Mateo that are over and above the County's required statutory contribution rates.

District Supplementary Contributions Account (DSCA) Reserve

This is a reserve for supplemental contributions from the San Mateo County Mosquito and Vector Control District ("District") that are over and above the District's required statutory contribution rates.

Employer Reserve

The accumulation of employer contributions for future retirement benefit payments. Additions include contributions from employers and related earnings. Deductions include annuity payments to retired members and survivors, lump sum death benefit payments to member survivors, and supplemental disability payments.

Entry Age Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.

Funded Ratio

A measurement of funded status. The Funded Ratio is calculated by dividing the Valuation Assets by the Actuarial Accrued Liability. For example, a Funded Ratio of 90% indicates assets are 10% less than liabilities.

Member Reserve

The accumulation of member contributions. Additions include member contributions and related earnings. Deductions include annuity payments to retirees and refunds to members.

Non-Valuation Reserves

Reserves excluded from the calculation of contribution rates.

Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Plan Year

A 12-month period beginning July 1 and ending June 30.

Projected Benefits

Those pension plan benefit amounts which are 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 and past and anticipated future compensation and service credits.

Unfunded Actuarial Accrued Liability

The excess, if any, of the Actuarial Accrued Liability over the Actuarial Value of Assets.

Valuation Date

The date upon which the Normal Cost, Actuarial Accrued Liability, and Actuarial Value of Assets are determined. Generally, the Valuation Date will coincide with the ending of a Plan Year.

Valuation Reserves


All reserves excluding the Non-Valuation Reserves.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 5.3

TO: Board of Retirement

FROM: Scott Hood, Chief Executive Officer 

SUBJECT: Presentation of the June 30, 2020, Actuarial Valuation Audit by Cheiron Inc.

Recommendation

Cheiron Inc. will present the results of its audit of the June 30, 2020, Actuarial Valuation as produced by Milliman, Inc. This is an information-only item.

Background

As part of our actuarial auditing process, every three years the auditing actuary audits both the Triennial Experience Study and an annual Actuarial Valuation. In July, Cheiron presented its audit of the Investigation of Experience July 1, 2017 – April 30, 2020. Today, Graham Schmidt of Cheiron will present its audit of the June 30, 2020, Actuarial Valuation.

Discussion

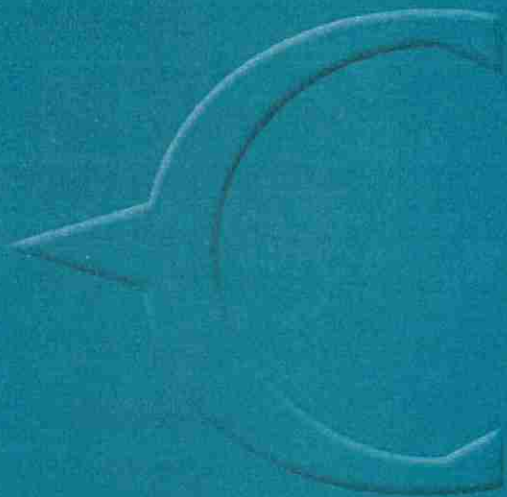
The purpose of the valuation audit is to verify the calculations completed by Milliman and to offer comments on the methodology and the results of their actuarial valuation. Cheiron noted in their audit report that “we are able to confirm that the liabilities and costs computed in the valuation as of June 30, 2020 are reasonably accurate and were computed in accordance with generally accepted actuarial principles.”

Cheiron notes that the data used by Milliman to estimate the employee and employer contributions can be improved. Milliman presently uses the members’ current age and service to calculate entry age for the purposes of determining and projecting member contribution rates. This will overestimate entry ages for those non-PEPRA members with incoming reciprocal service or breaks in service. Cheiron did not believe this approach had a material impact on the funding of the plan. To improve accuracy, staff has agreed to include the date of entry in reciprocal systems and the amount reciprocal service credit in the data used in future valuations.

Cheiron commends Milliman for including baseline projections of the employer contribution rates, assuming all actuarial assumptions are met after June 30, 2020 and reflecting the scheduled recognition of asset gains and losses currently being deferred. Cheiron encourages Milliman to break down the employer rate projection into General, Safety and Probation groups independently since the UAL payments as a percentage of payroll currently vary significantly from 26% to 61% of payroll.” Finally, Cheiron suggests that Milliman also include baseline projections of SamCERA’s funded status. Milliman has included such a projection in today’s presentation.

Attachment

Cheiron Inc.’s Audit of June 30, 2020 Actuarial Valuation



**San Mateo County
Employees' Retirement
Association**

**Audit of the June 30, 2020
Actuarial Valuation**

Produced by Cheiron

September 2020

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Via Electronic Mail

September 22, 2020

Board of Retirement
San Mateo County Employees' Retirement Association
100 Marine Parkway, Suite 125
Redwood City, CA 94065-5208

Members of the Board:

Cheiron is pleased to present the results of our actuarial audit of the June 30, 2020 Actuarial Valuation of the San Mateo County Employees' Retirement Association (SamCERA), performed by Milliman. We would like to thank Milliman for providing us with information and explanations that facilitated the actuarial audit process and ensured that our findings are accurate and benefit SamCERA.

We direct your attention to the executive summary section of our report which highlights the key findings of our review. The remaining sections of the report provide 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 Milliman.

In preparing our report, we relied on information (some oral and some written) supplied by SamCERA and Milliman. This information includes, but is not limited to, actuarial assumptions and methods adopted by SamCERA, 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 hereby certify that, to the best of our knowledge, 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. 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.

Board of Trustees
San Mateo County Employees' Retirement Association
September 22, 2020
Page ii

This report was prepared exclusively for SamCERA for the purpose described herein. This report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

Sincerely,
Cheiron



Graham A. Schmidt, ASA, EA, FCA, MAAA
Consulting Actuary



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

**ACTUARIAL AUDIT REPORT OF THE
SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

SECTION I – KEY FINDINGS AND RECOMMENDATIONS

Scope of Assignment

Cheiron performed a complete independent replication of the SamCERA June 30, 2020 actuarial valuation and reviewed the actuarial assumptions and methods underlying that valuation. We reviewed the census data provided by SamCERA staff, and compared it to the information used by Milliman in their valuation. We then performed a full parallel valuation, including the calculation of the projected benefits, accrued liability, and normal cost for all SamCERA members, and compared the results to those shown in Milliman's actuarial valuation report. A report communicating our findings related to the actuarial assumptions has been provided under separate cover.

This audit provides SamCERA confirmation that:

- The results reported by Milliman can be relied upon,
- The actuarial methods comply with Actuarial Standards of Practice (ASOP),
- The communication of the actuarial valuation results is complete and reasonable; and the Board of Retirement (the Board) and Milliman have considered recommendations and communications that may improve the valuation.

Key Findings and Recommendations

The main findings of our review are as follows:

1. As a result of our efforts, we are able to confirm that the liabilities and costs computed in the valuation as of June 30, 2020 are reasonably accurate and were computed in accordance with generally accepted actuarial principles.
2. We suggest that Milliman work with SamCERA to obtain data on individual members' entry ages for purposes of determining and projecting the member contribution rates. Currently, Milliman uses the members' current age and service amounts to back into their entry ages, which will overestimate the entry age (and thus the non-PEPRA member contribution rate) for individuals with reciprocal service or some breaks in service. However, we do not believe Milliman's current approach has a material impact on the overall funding of the Plan.
3. We commend Milliman for including baseline projections of the employer contribution rates, assuming all actuarial assumptions are met after June 30, 2020 and reflecting the scheduled recognition of asset gains and losses currently being deferred. In addition to the employer contribution rate projections, we suggest that Milliman also include baseline projections of SamCERA's funded status. We also encourage Milliman to consider providing projections for the General, Safety and Probations groups independently since the Unfunded Actuarial Liability (UAL) payments, as a percentage of payroll, vary significantly between these groups: 26.22%, 60.56%, and 53.96% of payroll, respectively. These UAL payments are before any Supplementary Contribution Account (SCA) adjustments.

ACTUARIAL AUDIT REPORT OF THE
SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS

Valuation Procedures

Overall, we find that the June 30, 2020 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 technically reasonable and conform to the ASOPs. This 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 June 30, 2020 actuarial valuation found no material difference in calculations of plan liabilities, Actuarial Value of Assets, and overall contribution rates from the amounts calculated by Milliman based on the adopted assumptions and methods. For the scope of this audit, materiality means the results in the aggregate were within industry standards of plus or minus 5%. Consequently, we conclude that the valuation prepared by Milliman for SamCERA as of June 30, 2020 is reasonable and can be relied on by the Board for its intended purpose. Our replication of the measures of plan liabilities and costs is summarized in Table II-1 below.

Table II-1			
Summary of Valuation Results as of June 30, 2020			
(\$ in thousands)			
	Milliman	Cheiron	Ratio
Present Value of Future Benefits	\$ 6,801,011	\$ 6,787,316	100%
Actuarial Liability	\$ 5,786,053	\$ 5,769,768	100%
Valuation Value of Assets (VVA)	<u>4,998,316</u>	<u>4,998,316</u>	100%
Unfunded Actuarial Liability (UAL)	\$ 787,737	\$ 771,452	98%
Funded Percentage on VVA basis	86.4%	86.6%	100%
Contribution Rate by Component			
Net Employer Normal Cost Rate	10.90%	11.04%	101%
UAL Payment Rate	<u>28.01%</u>	<u>27.76%</u>	99%
Total Employer Contribution	38.91%	38.80%	100%

We note that all results are within 5% of Milliman's calculation.

**ACTUARIAL AUDIT REPORT OF THE
SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

SECTION II – REVIEW OF ACTUARIAL VALUATION RESULTS

Our replication of the employer contribution rates by Rate Group and Plan is shown below in Table II-2. We note that the employer rates for most General plans and all Safety plans are within the 5% threshold.

Table II-2 Employer Contribution Rate Comparison by Rate Group				
		Milliman	Cheiron	Ratio
General				
Plan 1	County	35.07%	31.29%	89%
Plan 2	County	32.97%	31.39%	95%
Plan 2	Courts	35.97%	34.39%	96%
Plan 3	County	31.73%	31.95%	101%
Plan 3	Courts	34.73%	34.95%	101%
Plan 4	County	33.21%	32.63%	98%
Plan 4	Courts	36.21%	35.63%	98%
Plan 5	County	34.97%	34.46%	99%
Plan 5	Courts	37.97%	37.46%	99%
Plan 7	County	31.96%	31.97%	100%
Plan 7	Courts	34.96%	34.97%	100%
Plan 4	SMCM&VCD	14.94%	13.92%	93%
Plan 7	SMCM&VCD	10.06%	9.37%	93%
Safety				
Plan 2		75.73%	76.68%	101%
Plan 4		73.35%	75.29%	103%
Plan 5		73.19%	75.63%	103%
Plan 7		69.13%	70.72%	102%
Probation				
Plan 2		68.62%	68.36%	100%
Plan 4		66.83%	67.75%	101%
Plan 5		63.66%	64.54%	101%
Plan 7		62.53%	63.38%	101%

For the few groups where the employer is outside our 5% target threshold, we have reviewed the differences and have concluded that the results are not material to the overall valuation. The General Plan 1 group only includes five active members as of the valuation date, so it does not represent a significant bearing on the overall cost. In addition, it is not unusual to see larger percentage differences in very small populations, since the rounding and other methods used in the valuation systems can have a more notable impact on individual calculations. We note that Segal reported a similar difference in the Plan 1 contributions at the time of the last audit, and reached the same conclusions.

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For the San Mateo County Mosquito and Vector Control District (SMCM&VCD) Plan 4 and 7 members, although the difference in the net employer contribution rates is greater than 5%, this is a direct result of the leveraging impact of the large SCA offsets for these tiers. The difference in our employer contribution rates for these Plans is less than 3% prior to the application of the SCA offsets.

Finally, as can be seen in Table II-3 on the following page, our estimate of the total present value of future benefits for all of these groups is within the 5% target threshold. Therefore, we believe the overall estimate of the benefits for these members is reasonable and accurate.

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Present Value of Future Benefits

The comparison of the present value of future benefits calculated by Milliman and Cheiron indicates how closely we match the application of the actuarial assumptions and plan provisions 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-3. We note that all but two results are within the 5% threshold. The two results outside of the threshold (Safety and Probation Plan 6) are comprised of deferred-only populations that make up less than 0.01% of the overall present value.

Table II-3			
Present Value of Benefits Comparison by Cost Group			
(\$ in thousands)			
	Milliman	Cheiron	Ratio
General			
County & Courts			
Plan 1	659,723	657,627	100%
Plan 2	1,902,231	1,884,394	99%
Plan 3	54,316	58,032	107%
Plan 4	1,809,731	1,782,606	99%
Plan 5	125,598	122,329	97%
Plan 7	451,164	470,921	104%
SMCM&VCD			
Plan 1	4,089	4,081	100%
Plan 2	2,125	2,121	100%
Plan 4	7,601	7,524	99%
Plan 7	2,658	2,688	101%
Safety			
Plan 1	279,838	283,454	101%
Plan 2	471,913	474,659	101%
Plan 4	395,196	394,627	100%
Plan 5	54,620	54,914	101%
Plan 6	341	509	149%
Plan 7	108,831	112,981	104%
Probation			
Plan 1	54,460	55,558	102%
Plan 2	152,352	153,261	101%
Plan 4	233,888	234,283	100%
Plan 5	5,929	5,910	100%
Plan 6	144	214	149%
Plan 7	24,265	24,623	101%

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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 5% except for the small inactive Plan 6 groups and Safety Plan 7.

Table II-4			
Actuarial Liability Comparison by Cost Group			
(\$ in thousands)			
	Milliman	Cheiron	Ratio
General			
County & Courts			
Plan 1	659,572	657,493	100%
Plan 2	1,853,836	1,838,942	99%
Plan 3	51,080	53,806	105%
Plan 4	1,473,121	1,455,626	99%
Plan 5	58,371	56,992	98%
Plan 7	139,750	142,609	102%
SMCM&VCD			
Plan 1	4,089	4,081	100%
Plan 2	2,125	2,121	100%
Plan 4	5,435	5,426	100%
Plan 7	882	889	101%
Safety			
Plan 1	279,838	283,454	101%
Plan 2	467,260	470,223	101%
Plan 4	329,845	330,918	100%
Plan 5	23,023	23,533	102%
Plan 6	341	509	149%
Plan 7	26,401	28,456	108%
Probation			
Plan 1	54,460	55,558	102%
Plan 2	150,855	151,819	101%
Plan 4	197,039	198,270	101%
Plan 5	2,351	2,393	102%
Plan 6	144	214	149%
Plan 7	6,235	6,437	103%

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With respect to Safety Plan 7, the current active members have relatively low levels of service (3.2 years on average), which can lead to larger differences in the Actuarial Liability. It is not unusual to see larger differences in accrued liability and normal cost for newer groups, as a result of minor differences in how the valuation systems programmed by the actuaries apply various elements used in the allocation of costs between past and future service. As with our observations related to the differences in employer cost discussed earlier, we note that our estimates of the present valuation of benefits for this group is within 5%, and therefore we conclude that Milliman's results are reasonable.

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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 group is within the 5% threshold except for General Plan 1 and Plan 2. As noted above, General Plan 1 includes only 5 active members, and our estimates of the present value of future benefits and Actuarial Liability for Plan 2 are within 1% of Milliman's results, therefore we are comfortable with these differences.

Table II-5			
Total Normal Cost Comparison by Cost Group			
	Milliman	Cheiron	Ratio
General			
County & Courts			
Plan 1	26.80%	23.82%	89%
Plan 2	23.34%	21.69%	93%
Plan 3	8.51%	9.17%	108%
Plan 4	23.44%	22.88%	98%
Plan 5	21.65%	21.09%	97%
Plan 7	17.49%	18.37%	105%
SMCM&VCD			
Plan 1	0.00%	0.00%	
Plan 2	0.00%	0.00%	
Plan 4	22.74%	21.84%	96%
Plan 7	19.34%	18.74%	97%
Safety			
Plan 1	0.00%	0.00%	
Plan 2	40.73%	38.95%	
Plan 4	38.39%	37.76%	98%
Plan 5	38.06%	37.63%	99%
Plan 6	0.00%	0.00%	
Plan 7	29.43%	29.78%	101%
Probation			
Plan 1	0.00%	0.00%	
Plan 2	39.04%	37.09%	
Plan 4	36.92%	36.26%	98%
Plan 5	33.40%	32.82%	98%
Plan 6	0.00%	0.00%	
Plan 7	29.70%	29.67%	100%

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Employee Contribution Rates

As part of the audit, we replicated the calculations of the individual employee contribution rates based on the applicable provisions of the County Employees' Retirement Law (the CERL) and our understanding of additional cost sharing as described in the valuation report. For the Non-PEPRA (Legacy) tiers, we understand the employee contribution rates to be made up of the following components:

- A Basic rate providing for an annuity equal to
 - General Tiers 1 and 2: $1/120^{\text{th}}$ of One-Year Final Average Compensation at a retirement age of 55
 - General Tier 4: $1/120^{\text{th}}$ of Three-Year Final Average Compensation at a retirement age of 55
 - General Tier 3: no employee contributions required
 - General Tier 5: $1/120^{\text{th}}$ of Three-Year Final Average Compensation at a retirement age of 60
 - Safety Tiers 1 and 2: $1/100^{\text{th}}$ of One-Year (Three-Year for Safety Tiers 4, 5, and 6) Final Average Compensation at a retirement age of 50
 - General Tiers 1, 2, and 4 (except SMCM&VCD) members pay a 3% of salary cost sharing contribution
 - Safety Tiers 1, 2, and 4 members (except Deputy Sheriffs) pay a 5% of salary cost-sharing contribution
 - Safety Tier 5 members (except Deputy Sheriffs) pay a 4% of salary cost-sharing contribution
 - For Deputy Sheriffs, the cost-sharing contribution rate is 4.5% of salary if age 45 and older or with more than 15 years of service, and for ages under 45, 3% if less than 5 years of service and 3.5% of salary for between 5 and 15 years of service.

- A COLA rate providing for one-half of the cost of the COLA for Tiers 1, 2, 4, 5, and 6, except for SMCM&VCD members.

For the PEPRA members (Tier 7), the employee contributions rates are equal to 50% of the total normal cost rates for each group.

Non-PEPRA Safety members with 30 or more years of service (and General members hired on or before March 7, 1973) are exempt from paying Basic member contributions. However, it is our understanding that COLA and cost-sharing contributions are required to be paid regardless of service.

We have verified the calculations of the individual employee contribution rates based on the applicable provisions of the CERL and generally have found these rates to be correct. Our Basic (non-COLA) rates were within 0.4% of Milliman's rates for all Legacy tiers, and our total member rates are within 5% of Milliman's for all non-PEPRA tiers, as demonstrated in Tables II-6, II-7, and II-8 on the following pages.

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Table II-6 Member Contribution Rates Comparison by Plan Sample Entry Age 25						
Plan	Milliman		Cheiron		Ratio	
	Normal	Total	Normal	Total	Normal	Total
General Plan 1	7.22%	9.75%	7.18%	9.54%	99.4%	97.8%
General Plan 2	7.22%	9.71%	7.18%	9.57%	99.4%	98.5%
General Plan 4	6.98%	8.83%	6.94%	8.73%	99.4%	98.9%
General Plan 5	6.07%	7.57%	6.03%	7.50%	99.3%	99.0%
Safety Plan 2	10.09%	15.31%	10.03%	15.57%	99.4%	101.7%
Safety Plan 4	9.72%	13.52%	9.66%	13.39%	99.4%	99.1%
Safety Plan 5	9.72%	13.09%	9.66%	12.97%	99.4%	99.1%
Probation Plan 2	10.09%	15.46%	10.03%	16.10%	99.4%	104.1%
Probation Plan 4	9.72%	13.58%	9.66%	13.47%	99.4%	99.2%
Probation Plan 5	9.72%	13.12%	9.66%	13.00%	99.4%	99.1%

Table II-7 Member Contribution Rates Comparison by Plan Sample Entry Age 35						
Plan	Milliman		Cheiron		Ratio	
	Normal	Total	Normal	Total	Normal	Total
General Plan 1	8.55%	11.54%	8.51%	11.30%	99.5%	97.9%
General Plan 2	8.55%	11.50%	8.51%	11.34%	99.5%	98.6%
General Plan 4	8.26%	10.44%	8.23%	10.36%	99.6%	99.2%
General Plan 5	7.18%	8.96%	7.15%	8.89%	99.6%	99.2%
Safety Plan 2	11.67%	17.71%	11.62%	18.03%	99.6%	101.8%
Safety Plan 4	11.24%	15.64%	11.19%	15.51%	99.6%	99.2%
Safety Plan 5	11.24%	15.14%	11.19%	15.02%	99.6%	99.2%
Probation Plan 2	11.67%	17.88%	11.62%	18.65%	99.6%	104.3%
Probation Plan 4	11.24%	15.70%	11.19%	15.60%	99.6%	99.3%
Probation Plan 5	11.24%	15.17%	11.19%	15.05%	99.6%	99.2%

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Table II-8 Member Contribution Rates Comparison by Plan Sample Entry Age 45						
Plan	Milliman		Cheiron		Ratio	
	Normal	Total	Normal	Total	Normal	Total
General Plan 1	10.16%	13.72%	10.15%	13.48%	99.9%	98.3%
General Plan 2	10.16%	13.67%	10.15%	13.52%	99.9%	98.9%
General Plan 4	9.77%	12.35%	9.75%	12.27%	99.8%	99.4%
General Plan 5	8.52%	10.63%	8.50%	10.57%	99.8%	99.4%
Safety Plan 2	13.51%	20.50%	13.48%	20.92%	99.8%	102.1%
Safety Plan 4	12.79%	17.80%	12.72%	17.64%	99.5%	99.1%
Safety Plan 5	12.79%	17.23%	12.72%	17.07%	99.5%	99.1%
Probation Plan 2	13.51%	20.70%	13.48%	21.63%	99.8%	104.5%
Probation Plan 4	12.79%	17.86%	12.72%	17.73%	99.5%	99.3%
Probation Plan 5	12.79%	17.26%	12.72%	17.11%	99.5%	99.1%

We developed the COLA loading factors using the same methodology that Milliman employs. The Milliman methodology is commonly used by '37 Act Associations (determining Basic rates and then applying a COLA load based on each years' valuation results) and appears to meet the requirement that *“Any increases in contribution shall be shared equally between the county or district and the contributing members”* (CERL 31873). However, for some of our '37 Act clients we use an alternative methodology for determining employee COLA contribution rates, which involves calculating a distinct COLA rate for each individual entry-age, rather than applying a certain percentage load to the Basic rates. This methodology has the advantage of avoiding annual changes to the COLA contribution rates; the COLA rates will only change if there is a modification to the benefit provisions or actuarial assumptions. We are happy to discuss this methodology with Milliman and/or SamCERA upon request.

We calculated PEPRA member contribution rates for General and Safety and our results are within 5% of Milliman's, as can be seen in our match shown for the Total Normal Cost for the PEPRA Plans in Table II-5 (since the PEPRA member rates are exactly 50% of the Total Normal Cost rates).

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Census Data

Both the SamCERA Staff and Milliman provided us with the data that was used in the June 30, 2020 actuarial valuation. We reviewed the information in both files, and reviewed the data questions provided to SamCERA by Milliman and the SamCERA responses.

We find that the data used in the valuation is valid, complete and contains the necessary data elements for purposes of performing the actuarial valuation of SamCERA, though we have a suggestion for additional data which may be helpful for more accurately projecting the member contribution rates.

In our review, we discovered that Milliman backs into the entry age used to determine the age-based member contribution rates for non-PEPRA members using the members' current age and vesting service reported by SamCERA. This is likely to be a reasonable method for most members. However, members who prior service with a reciprocal system are entitled to use their age at entry to the prior system when determining the members' contribution rate. Because the service reported by SamCERA does not reflect the service with the prior system, Milliman's method will overestimate the entry age for these members.

We requested and SamCERA provided us with the actual entry age used to determine the members' contribution rates for those members who have a reciprocity indicator in their record. Using this data, we estimated that the employee contribution rates calculated for the current valuation would have been lower by approximately 0.1% of overall SamCERA payroll, or roughly \$500,000. These contributions would have to be made up by the employers, resulting in a similar increase in the overall contribution rates.

However, we do not consider this amount of potential underfunding to be material to the overall funding of the system, in particular, because any shortfall between the actuarial cost and the contributions actually made by the employers will be made up via future contributions by the employers. There may also be other circumstances in which a member may have an earlier entry age than would be derived from just looking at current age and service – such as members who are hired by SamCERA and terminate and then later redeposit their contributions may be entitled to use their original entry age, but again, we do not anticipate that these individuals would have a significant impact on the funding of the system.

We found 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 Tables II-9 and II-10 on the following pages, we compare the raw June 30, 2020 data file provided by SamCERA – as modified appropriately based on the SamCERA responses to Milliman's questions – to Milliman's processed data file and found only very minor differences between the files.

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Table II-9 Summary of Member Data as of June 30, 2020			
	Milliman	Cheiron	Ratio
Active Members			
General			
Total Number	4,655	4,655	100.0%
Average Age	45.5	45.5	100.0%
Average Service	10.3	10.3	100.0%
Total Annual Pay Rate	\$496,992,584	\$514,017,520	103.4%
Monthly Average Rate	\$8,897	\$9,202	103.4%
Safety			
Total Number	522	522	100.0%
Average Age	41.3	41.2	99.8%
Average Service	9.4	9.4	100.0%
Total Annual Pay Rate	\$72,724,015	\$72,864,419	100.2%
Monthly Average Rate	\$11,610	\$11,632	100.2%
Probation			
Total Number	223	217	97.3%
Average Age	42.9	42.7	99.5%
Average Service	14.0	14.0	100.0%
Total Annual Pay Rate	\$24,856,263	\$24,462,395	98.4%
Monthly Average Rate	\$9,289	\$9,394	101.1%
Grand Total			
Total Number	5,400	5,394	99.9%
Average Age	45.0	45.0	99.9%
Average Service	10.3	10.4	100.6%
Total Annual Pay Rate	594,572,862	611,344,334	102.8%
Monthly Average Rate	\$9,176	\$9,445	102.9%
Vested Terminated Members			
General			
Total Number	939	939	100.0%
Average Age	49.3	49.3	100.0%
Safety			
Total Number	43	43	100.0%
Average Age	46.2	46.2	100.0%
Probation			
Total Number	39	39	100.0%
Average Age	45.7	45.6	99.8%
Contingent Vested Members			
General			
Total Number	789	789	100.0%
Average Age	43.0	43.0	100.0%
Safety			
Total Number	47	47	100.0%
Average Age	44.6	44.7	100.2%
Probation			
Total Number	25	25	100.0%
Average Age	44.1	44.1	100.0%

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Table II-10 Summary of Member Data as of June 30, 2020			
	Milliman	Cheiron	Ratio
Healthy Retirees			
General			
Total Number	3,654	3,654	100.0%
Total Monthly Benefit	13,017,285	13,017,285	100.0%
Average Monthly Benefit	\$3,252	\$3,252	100.0%
Safety			
Total Number	409	409	100.0%
Total Monthly Benefit	3,329,873	3,329,873	100.0%
Average Monthly Benefit	\$8,063	\$8,063	100.0%
Probation			
Total Number	229	229	100.0%
Total Monthly Benefit	1,157,113	1,157,113	100.0%
Average Monthly Benefit	\$4,781	\$4,781	100.0%
Disabled Retirees			
General			
Total Number	367	367	100.0%
Total Monthly Benefit	1,156,445	1,156,445	100.0%
Average Monthly Benefit	\$3,043	\$3,043	100.0%
Safety			
Total Number	119	119	100.0%
Total Monthly Benefit	722,317	722,317	100.0%
Average Monthly Benefit	\$6,019	\$6,019	100.0%
Probation			
Total Number	20	20	100.0%
Total Monthly Benefit	90,664	90,664	100.0%
Average Monthly Benefit	\$4,317	\$4,317	100.0%
Beneficiaries			
General			
Total Number	529	529	100.0%
Total Monthly Benefit	1,133,716	1,133,716	100.0%
Average Monthly Benefit	\$2,007	\$2,007	100.0%
Safety			
Total Number	104	104	100.0%
Total Monthly Benefit	416,698	416,698	100.0%
Average Monthly Benefit	\$3,969	\$3,969	100.0%
Probation			
Total Number	23	23	100.0%
Total Monthly Benefit	56,108	56,108	100.0%
Average Monthly Benefit	\$2,158	\$2,158	100.0%

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Plan Provisions

We compared the summary of plan provisions shown in Appendix B of Milliman's June 30, 2020 Valuation Report to the benefits in the County Employees Retirement Law of 1937 (CERL). In general, the plan provisions shown in Milliman's exhibit match what is in the CERL, and based on our close match of the Milliman liabilities as part of our parallel valuation, we conclude that Milliman has appropriately reflected these provisions in the actuarial valuation.

Actuarial Assumptions

The June 30, 2020 actuarial valuation was based on the assumptions ultimately adopted by the SamCERA Board, based on recommendations made by Milliman in the Actuarial Experience Study covering the period from July 1, 2017 to April 30, 2020. Refer to our September 21, 2020 peer review report of the Milliman Experience Study for our comments and recommendation with respect to the actuarial assumptions.

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SECTION III – REVIEW OF ACTUARIAL METHODS

Actuarial Methods

Actuarial methods relate to the application of actuarial assumptions in the determination of Plan liabilities and contributions. These methods include the actuarial cost method, amortization policy, actuarial asset smoothing, and cost-sharing methodologies. The questions guiding our review of the actuarial methods were the following:

- Are the methods acceptable and appropriate for the intended purpose?
- Do the methods comply with relevant accounting and actuarial standards?

Actuarial Cost Method

The individual Entry Age actuarial cost method is used in the June 30, 2020 actuarial valuation. Under this method, the expected cost of benefits for each individual member is allocated over that member's career as a level percentage of that member's expected salary. The normal cost for the plan is the sum of the individual normal costs calculated for each member. We concur with this methodology and note that it is a "Model Practice" based on the guidance issued by the California Actuarial Advisory Panel (CAAP), and a "Best Practice" based on guidance issued by the Government Finance Officers Association. Milliman has also applied this method in a manner which complies with the disclosure requirements under GASB Statements 67 and 68.

Asset Smoothing Method

The Actuarial (or smoothed) Value of Assets is determined using a five-year period, semi-annually, for investment gains and losses, and includes an 80% to 120% corridor below and above the Market Value of Assets. Beginning with the June 30, 2019 valuation, Milliman began a practice of directly and immediately offsetting any current period gains or losses against prior period unrecognized gains or losses, starting from the oldest unrecognized amounts.

In our opinion, the methods used by SamCERA satisfy the Actuarial Standard of Practice, which governs asset valuation methods (ASOP No. 44), which requires that the actuarial asset value should fall within a "reasonable range around the corresponding market value" and that differences between the actuarial and the market value should be "recognized within a reasonable period of time."

The recent additional practice of directly offsetting current period gains and losses against prior period amounts is unusual, at least amongst the 1937 Act systems, but we believe the practice to be reasonable and should be helpful in reducing contribution volatility, which is the goal of asset smoothing.

We have confirmed that Milliman has applied the actuarial smoothing method as described in their report.

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SECTION III – REVIEW OF ACTUARIAL METHODS

Amortization Policy

The current Amortization Policy for SamCERA is a layered amortization policy, with each year's unfunded liability attributable to experience gains or losses, assumption changes, and cost method changes amortized as a level percentage of payroll over a new closed 15-year period. Plan changes affecting inactive members and early retirement incentive programs will be amortized over shorter periods.

This amortization method is in accordance with funding policy guidance issued by the CAAP, GFOA, and the Conference of Consulting Actuaries Public Plans Community. This amortization policy also meets the minimum standards of the '37 Act.

We note that Milliman makes an adjustment to the expected amortization payment for the current year amortization layer to account for the one year delay between the valuation date and the date of the implementation of the contribution rates. We believe this method is reasonable.

We have confirmed that Milliman has applied the amortization policies as described in their report, including for all of the valuation subgroups.

We recommend that Milliman consider calculating and disclosing what is known as the "single equivalent amortization period" for each of the amortization schedules, or at least for the Plan as a whole. This would provide the reader with an estimate of the "average" amortization period, and represents the length of time that would be required to amortization the overall UAL if the current UAL payment rate were held constant.

Cost-Sharing Methods

SamCERA is a cost-sharing plan, wherein the assets of the Plan are available to fund the benefits of all members. This is different from an approach in which specific asset pools are tracked and held separately for each employer. As a result, methods and assumptions must be used to assign portions of the unfunded accrued liability to the different employment groups, including adjustments made to various groups' cost calculations as a result of specific circumstances or policies.

SamCERA maintains separate reserves for the County and District Supplementary Contribution Account (SCA) Reserves. We did not verify the calculation of these reserves by SamCERA, but we did verify Milliman's calculations of the five-year smoothing of these reserves to determine the actuarial values, as well as the detail of the amortization calculations used to determine the SCA contribution offsets.

SamCERA does not maintain separate reserves or accounts for the General, Safety, and Probation groups. However, an allocation of the valuation assets amongst these groups is performed by Milliman, in order to develop the UAL for each group and the resulting amortization rate. We verified the results of the calculations shown in Exhibit 8 of Milliman's report. As Segal observed in the prior audit, this methodology could result in cross-subsidization between the groups if the distribution of liability gains and losses is uneven. However, we have

**ACTUARIAL AUDIT REPORT OF THE
SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

SECTION III – REVIEW OF ACTUARIAL METHODS

used similar methodologies with some of our own 1937 Act clients, and find that the benefits of pooling experience across classes – such as simplified administration and accounting – may outweigh these challenges, and we find this to be a reasonable methodology for allocating the UAL.

ACTUARIAL AUDIT REPORT OF THE
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SECTION IV – CONTENTS OF REPORT

Contents of the Reports

We find the actuarial valuation report to be in compliance with the Actuarial Standards of Practice.

It is noted in Exhibit 2 on page 12 of Milliman's report that the total annual payroll increased by 3.9% from \$572,516,000 to \$594,573,000 which is more than the expected 3.00% increase. When payroll increases by more than expected, the UAL amortization payment as a percentage of payroll will decrease since the payments are based on a fixed schedule that increase by the assumed payroll growth each year. The Statutory Contribution Rate (SCR) reconciliation on page 6 of Milliman's report does not show the impact of actual payroll growth on the contribution rate, implying that it is included with *Other Experience Changes*.

We calculated that the payroll growth impact decreased the SCR between 0.25% to 0.30% of payroll. Including this reconciliation item in the exhibit would increase the *Other Experience Changes* to about 0.40% of payroll which would be the largest source of change. We suggest Milliman further explain the other sources of losses or experience that impacted the increase in the SCR.

On page 9 of their report, Milliman stated that SamCERA earned 0.9% net of investment and administrative expenses for the fiscal year ended June 30, 2020. Our understanding – based on our own calculations and notation included in Exhibit 4 of Milliman's report – is that the 0.9% return is net of investment expenses, but not administrative expenses. We suggest Milliman clarify, and if the return net of administrative expenses is to be shown, that this information also be presented in Exhibit 4.

The GFOA guidelines revised the name of the *Solvency Test* to *Funded Liabilities by Type*. We suggest that Milliman update the name of this exhibit in their report.

Projections

We commend Milliman for including baseline projections of the employer contribution rates, assuming all actuarial assumptions are met after June 30, 2020 and reflecting the scheduled recognition of asset gains and losses currently being deferred. It would be helpful if there was language explaining whether or not the projections include the cost-sharing employee contributions for all future years.

In addition to the employer contribution rate projections, we suggest that Milliman also include baseline projections of SamCERA's funded status. Projections of the funded status are useful to ensure that the actuarial funding methods and amortization policies are structured such that funding progress is expected to occur over time, which is important to be able to provide retirement benefits to all participants when they become due.

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SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

SECTION IV – CONTENTS OF REPORT

We also encourage Milliman to consider providing projections for the General, Safety, and Probations groups independently since the UAL payments as a percentage of payroll currently vary significantly from 26% to 61% of payroll. In addition, the UAL payments that will “roll off” in the next two years are 78% for General, 87% for Safety, and 69% for Probation of the respective total UAL payments. The magnitude of the “cliff,” the significant contribution rate decline from 2022 to 2023, and future volatility in the contribution rates will most likely vary between the groups.

Milliman has fulfilled the requirements under ASOP 51 in the Section 8, Risk Discussion, of their report. The standard requires that *“the actuary should assess the risks identified... including the potential effects of the identified risks on the plan’s future financial condition. The assessment should take into account circumstances specific to the plan (for example, funding policy...)”* (Section 3.3). Section 8 identifies and assesses risk, as well as discloses maturity measures and historical information, to help to understand the Plan’s risks.

However, the methods for assessing risk in Section 3.4 of ASOP 51 include scenario and stress testing. This type of testing is significant in understanding the risks to the Plan especially in terms of investment volatility and its impact on employer contribution rates, and we encourage Milliman to consider including some of these assessments in future valuation reports or other actuarial communications.

**ACTUARIAL AUDIT REPORT OF THE
SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

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.”

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.

ACTUARIAL AUDIT REPORT OF THE
SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

APPENDIX A – GLOSSARY OF TERMS

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

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 5.4

TO: Board of Retirement

FROM: Scott Hood, Chief Executive Officer 

SUBJECT: Acceptance of the Fiscal-Year 2021-2022 Employer and Member Contribution Rates

Recommendation

Approve the "Resolution Accepting Contribution Rates to Recommend to the Board of Supervisors for the 2021-2022 Fiscal Year."

Background

At its June 2, 2020 meeting, the Board approved for use in the annual valuation report, the existing economic assumptions previously adopted: investment return at 6.5%, inflation at 2.50%, wage at 3.00% and payroll growth at 3.00% and COLA assumption for Plans 1 and 2 be set in accordance with the inflation assumption. At its July 28, 2020 meeting, the Board adopted recommended changes to the demographic assumptions to be used based on Milliman's Investigation of Experience, July 1, 2017 – April 30, 2020.

Discussion

The highlights of the June 2020 actuarial valuation report include the following elements:

Funding: SamCERA's funded ratio increased by .6 percentage points from 85.8% to 86.4%. This increase was mainly due to employer contributions to amortize the Unfunded Actuarial Accrued Liability ("UAAL"). The employer's portion of the Statutory Contribution Rate (SCR) that is used to finance the UAAL increased from 26.59 to 28.01% of pay. Neither the County nor the District contributed to their Supplemental Contribution Accounts (SCA) this year. Together their supplemental accounts totaled \$186.2M and added 3.2% to the funded ratio.

Contribution Rates: The Employer Normal Cost decreased from 11.27% to 10.90% of pay. The decrease was primarily due to the changes in demographic assumptions. As noted above, the portion of the employer's SCR used to finance the UAAL increased from 26.59 to 28.01% of pay. This increase is largely driven by salary and payroll increases greater than assumed and retiree cola increases greater than expected. The net result is an increase in the SCR from the prior valuation report of 1.05% (from 37.86% to 38.91% of payroll).

The County's contribution rate to finance the UAAL would have increased to 42.68% of payroll. However, when the value of the County's CSCA account is factored in the calculation, the County's contribution rate increases to 39.14% of payroll instead. Similarly, when the District's DSCA was factored in, its rate increases to 12.76% rather than 38.59% of payroll, an offset of 25.83% of payroll.

Investment Returns: SamCERA’s investment return on the market value of assets of 0.9% for fiscal year 2019-20, was less than the actuarial assumed rate of 6.5 %. Combined with the recognition of deferred investment losses from prior years, the net result was a return on the actuarial value of valuation assets of 6.2%, which is less than the assumed return.

Member Rates: Basic member rates and member COLA rates will increase for all plans (except Plan 7) due to the new economic assumptions adopted by the Board at its June 2, 2020 meeting and the new demographic assumptions adopted by the Board at its July 28, 2020 meeting.

Summary of Recommendation

The following tables summarize Milliman’s 2021-22 recommended Statutory Contribution Rates and Employer and Member Contribution rates for the Board. Staff provided this rate information to the County Manager’s Office, the County’s Human Resources Director, to the Court Executive Officer and to the Manager of the Mosquito Abatement and Vector Control District.

Recommendation #1: Adopt the following new Statutory Contribution Rates for fiscal year beginning July 1, 2021:

	Fiscal Year Beginning		Increase / (Decrease)
	July 1, 2021	July 1, 2020	
Gross Normal Cost	23.11%	23.73%	(0.62)%
Member Contributions	(12.21)%	(12.46)%	0.25%
Employer Normal Cost	10.90%	11.27%	(0.37)%
UAAL Amortization	28.01%	26.59%	1.42%
Total Employer Rate	38.91%	37.86%	1.05%
County Contribution Rate	39.14%	38.06%	1.08%
Courts Contribution Rate	35.85%	35.22%	0.63%
SMCM&VCD Contribution Rate	12.76%	12.58%	0.18%

Notes:

1. Detailed contribution rates by plan are shown in Section 6.
2. The Total Employer Statutory Contribution Rate of 38.91% is the aggregate rate for all employers.

Recommendation #2: Adopt the new member contribution rates for fiscal year beginning July 1, 2021 as shown in the actuarial valuation.

SamCERA staff reviewed the valuation report and its recommendations and discussed them with Milliman, Inc. in order to confirm our understanding. Staff supports the results and recommendations of the valuation.

Attachment

Resolution Accepting Contribution Rates to Recommend to the Board of Supervisors for the 2021-2022 Fiscal Year

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

RESOLUTION ACCEPTING CONTRIBUTION RATES TO RECOMMEND TO THE BOARD OF SUPERVISORS FOR THE 2021-2022 FISCAL YEAR.

RESOLUTION 2020-15

WHEREAS, Government Code §31453 mandates the periodic actuarial valuation of the Retirement Fund and requires that the Board...*"shall, at least 45 days prior to the beginning of the succeeding fiscal year, recommend to the Board of Supervisors such changes in the rates of interest, in the rates of contributions of members, and in the county and district appropriations as are necessary..."* and

WHEREAS, the Board has received and accepted the June 30, 2020, valuation report from its actuarial firm, Milliman, Inc., and

WHEREAS, the Chief Executive Officer has recommended, in agreement with Milliman, Inc., the contribution rates necessary to assure the actuarial soundness of the Retirement Fund,
Therefore, be it

RESOLVED that the Board hereby accepts the employer and member contribution rates as recommended by Milliman, Inc. in its June 30, 2020, Actuarial Valuation of the San Mateo County Employees' Retirement Association effective for the fiscal year 2021-2022.

Be it further

RESOLVED that the Board recommends that the Board of Supervisors adopt the recommended **employer contribution rates** for the County of San Mateo, the San Mateo Superior Court and the San Mateo County Mosquito & Vector Control District in accordance with the schedules provided by Milliman, Inc. in its June 30, 2020, Actuarial Valuation, effective July 1, 2021.

Be it further

RESOLVED that the Board of Retirement hereby recommends that the Board of Supervisors adopt the recommended **member contribution rates** for SamCERA active members of the County of San Mateo, the San Mateo County Superior Court and the San Mateo County Mosquito & Vector Control District in accordance with the schedules provided by Milliman, Inc. in its June 30, 2020, Actuarial Valuation, effective July 1, 2021.

Be it further

RESOLVED that the Chief Executive Officer is hereby authorized to transmit the attached rates and recommendations to the Board of Supervisors and to take all actions necessary to provide for their implementation effective July 1, 2021.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

* * * * *

Regularly passed and adopted, by the San Mateo County Employees' Retirement Association,
Board of Retirement, on September 29, 2020.

Ayes, Trustees:

Noes, Trustees:

Absent, Trustees:

Abstain, Trustees:

Katherine O'Malley, Board Secretary, SamCERA

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

Board of Retirement

ATTACHMENT TO RESOLUTION 2020-15

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
RATES OF CONTRIBUTIONS FOR ALL ACTIVE MEMBERS AND PARTICIPATING EMPLOYERS
FOR THE 2021-2022 FISCAL YEAR**

1. ACTIVE MEMBER CONTRIBUTION RATES

Appendix D	Member Contribution Rates-Plan7
Exhibit D-1	General Member Contribution Rates (including SMCM&VCD*)
Exhibit D-2	Safety/Probation Member Rates
Exhibit D-3	General Member Contribution Rates (excluding SMCM&VCD)
Exhibit D-4	Safety Member Rates
Exhibit D-5	Probation Member Rates

2. EMPLOYER CONTRIBUTION RATES

Exhibit 10	Employer Statutory Rates-All Plans
Exhibit 10a	Employer Statutory Rates-General Members
Exhibit 10b	Employer Statutory Rates- SMCM&VCD
Exhibit 10c	Employer Statutory Rates-Safety Members
Exhibit 10d	Employer Statutory Rates-Probation Members

*"SMCM&VCD" refers to the San Mateo County Mosquito and Vector Control District.

Appendix D Member Contribution Rates

This section illustrates the member basic contribution rates and COLA sharing contribution rates by entry age for Plans 1 through 6. For different COLA sharing percentages, the COLA contribution rates may be adjusted ratably, and should be rounded to two decimal places.

Member contribution rates for Plan 7 are not defined by entry age. Plan 7 members contribute 50% of the total Normal Cost rate. For the 2021-2022 fiscal year, Plan 7 member contribution rates are:

- General Plan 7 members: 8.75%
- SMCM&VCD Plan 7 members: 9.67%
- Safety Plan 7 members: 14.72%
- Probation Plan 7 members: 14.85%

Please refer to Appendix B for a detailed description of member contribution rates.

**Exhibit D-1
 General Member Contribution Rates (including SMCM&VCD)**

Entry Age ⁽¹⁾	Basic Member Rates				
	General & SMCM&VCD			General	SMCM&VCD
	Plans 1&2	Plan 4	Plan 5	Plan 7	Plan 7
16	6.20%	5.99%	5.20%	8.75%	9.67%
17	6.31%	6.10%	5.29%	8.75%	9.67%
18	6.42%	6.20%	5.38%	8.75%	9.67%
19	6.53%	6.31%	5.48%	8.75%	9.67%
20	6.64%	6.42%	5.57%	8.75%	9.67%
21	6.75%	6.53%	5.67%	8.75%	9.67%
22	6.87%	6.64%	5.76%	8.75%	9.67%
23	6.99%	6.75%	5.86%	8.75%	9.67%
24	7.10%	6.87%	5.96%	8.75%	9.67%
25	7.22%	6.98%	6.07%	8.75%	9.67%
26	7.35%	7.10%	6.17%	8.75%	9.67%
27	7.47%	7.22%	6.28%	8.75%	9.67%
28	7.60%	7.34%	6.38%	8.75%	9.67%
29	7.73%	7.47%	6.49%	8.75%	9.67%
30	7.86%	7.59%	6.60%	8.75%	9.67%
31	7.99%	7.72%	6.71%	8.75%	9.67%
32	8.13%	7.85%	6.83%	8.75%	9.67%
33	8.26%	7.99%	6.94%	8.75%	9.67%
34	8.40%	8.12%	7.06%	8.75%	9.67%
35	8.55%	8.26%	7.18%	8.75%	9.67%
36	8.69%	8.40%	7.30%	8.75%	9.67%
37	8.85%	8.55%	7.42%	8.75%	9.67%
38	9.00%	8.70%	7.55%	8.75%	9.67%
39	9.16%	8.85%	7.68%	8.75%	9.67%
40	9.32%	9.01%	7.81%	8.75%	9.67%
41	9.49%	9.16%	7.94%	8.75%	9.67%
42	9.66%	9.32%	8.08%	8.75%	9.67%
43	9.83%	9.47%	8.22%	8.75%	9.67%
44	10.00%	9.63%	8.37%	8.75%	9.67%
45	10.16%	9.77%	8.52%	8.75%	9.67%
46	10.33%	9.91%	8.66%	8.75%	9.67%
47	10.49%	10.04%	8.81%	8.75%	9.67%
48	10.63%	10.16%	8.96%	8.75%	9.67%
49	10.77%	10.26%	9.10%	8.75%	9.67%
50	10.90%	10.32%	9.24%	8.75%	9.67%
51	11.00%	10.34%	9.37%	8.75%	9.67%
52	11.06%	10.34%	9.49%	8.75%	9.67%
53	11.06%	10.60%	9.60%	8.75%	9.67%
54	11.06%	10.93%	9.70%	8.75%	9.67%
55	11.06%	10.93%	9.76%	8.75%	9.67%
56	11.06%	10.93%	9.78%	8.75%	9.67%
57	11.06%	10.93%	9.78%	8.75%	9.67%
58	11.06%	10.93%	10.02%	8.75%	9.67%
59	11.06%	10.93%	10.34%	8.75%	9.67%
60	11.06%	10.93%	10.34%	8.75%	9.67%

1. For General and SMCM&VCD members entering after age 60, the rate equals the rate at age 60.

Exhibit D-2
Safety/Probation Member Contribution Rates

Entry Age ⁽¹⁾	Basic Member Rates			
	Safety & Probation		Safety	Probation
	Plans 1&2	Plans 4&5&6	Plan 7	Plan 7
16	8.86%	8.53%	14.72%	14.85%
17	8.99%	8.66%	14.72%	14.85%
18	9.12%	8.78%	14.72%	14.85%
19	9.25%	8.91%	14.72%	14.85%
20	9.39%	9.04%	14.72%	14.85%
21	9.52%	9.17%	14.72%	14.85%
22	9.66%	9.31%	14.72%	14.85%
23	9.80%	9.44%	14.72%	14.85%
24	9.94%	9.58%	14.72%	14.85%
25	10.09%	9.72%	14.72%	14.85%
26	10.23%	9.86%	14.72%	14.85%
27	10.38%	10.00%	14.72%	14.85%
28	10.53%	10.15%	14.72%	14.85%
29	10.69%	10.29%	14.72%	14.85%
30	10.84%	10.44%	14.72%	14.85%
31	11.00%	10.60%	14.72%	14.85%
32	11.16%	10.75%	14.72%	14.85%
33	11.33%	10.91%	14.72%	14.85%
34	11.50%	11.07%	14.72%	14.85%
35	11.67%	11.24%	14.72%	14.85%
36	11.85%	11.41%	14.72%	14.85%
37	12.03%	11.58%	14.72%	14.85%
38	12.22%	11.76%	14.72%	14.85%
39	12.40%	11.93%	14.72%	14.85%
40	12.60%	12.10%	14.72%	14.85%
41	12.79%	12.28%	14.72%	14.85%
42	12.98%	12.44%	14.72%	14.85%
43	13.17%	12.59%	14.72%	14.85%
44	13.35%	12.71%	14.72%	14.85%
45	13.51%	12.79%	14.72%	14.85%
46	13.63%	12.81%	14.72%	14.85%
47	13.70%	12.81%	14.72%	14.85%
48	13.70%	13.14%	14.72%	14.85%
49	13.70%	13.55%	14.72%	14.85%
50	13.70%	13.55%	14.72%	14.85%

1. For Safety and Probation members entering after age 50, the rate equals the rate at age 50.

Exhibit D-3
General Member Contribution Rates (except SMCM&VCD)

Entry Age ⁽¹⁾	50% Member COLA Rates			
	Plan 1	Plan 2	Plan 4	Plan 5
16	2.17%	2.14%	1.58%	1.29%
17	2.21%	2.18%	1.61%	1.31%
18	2.25%	2.21%	1.64%	1.33%
19	2.29%	2.25%	1.67%	1.36%
20	2.32%	2.29%	1.70%	1.38%
21	2.36%	2.33%	1.73%	1.40%
22	2.40%	2.37%	1.76%	1.42%
23	2.45%	2.41%	1.79%	1.45%
24	2.49%	2.45%	1.82%	1.47%
25	2.53%	2.49%	1.85%	1.50%
26	2.57%	2.54%	1.88%	1.53%
27	2.61%	2.58%	1.91%	1.55%
28	2.66%	2.62%	1.94%	1.58%
29	2.71%	2.67%	1.98%	1.60%
30	2.75%	2.71%	2.01%	1.63%
31	2.80%	2.76%	2.04%	1.66%
32	2.85%	2.80%	2.08%	1.69%
33	2.89%	2.85%	2.11%	1.72%
34	2.94%	2.90%	2.15%	1.75%
35	2.99%	2.95%	2.18%	1.78%
36	3.04%	3.00%	2.22%	1.81%
37	3.10%	3.05%	2.26%	1.83%
38	3.15%	3.11%	2.30%	1.87%
39	3.21%	3.16%	2.34%	1.90%
40	3.26%	3.22%	2.38%	1.93%
41	3.32%	3.27%	2.42%	1.96%
42	3.38%	3.33%	2.47%	2.00%
43	3.44%	3.39%	2.50%	2.03%
44	3.50%	3.45%	2.55%	2.07%
45	3.56%	3.51%	2.58%	2.11%
46	3.62%	3.56%	2.62%	2.14%
47	3.67%	3.62%	2.66%	2.18%
48	3.72%	3.67%	2.69%	2.22%
49	3.77%	3.72%	2.71%	2.25%
50	3.82%	3.76%	2.73%	2.29%
51	3.85%	3.80%	2.73%	2.32%
52	3.87%	3.82%	2.73%	2.35%
53	3.87%	3.82%	2.80%	2.37%
54	3.87%	3.82%	2.89%	2.40%
55	3.87%	3.82%	2.89%	2.41%
56	3.87%	3.82%	2.89%	2.42%
57	3.87%	3.82%	2.89%	2.42%
58	3.87%	3.82%	2.89%	2.48%
59	3.87%	3.82%	2.89%	2.56%
60	3.87%	3.82%	2.89%	2.56%

1. For General and SMCM&VCD members entering after age 60, the rate equals the rate at age 60.

Exhibit D-4
Safety Member Contribution Rates

Entry Age ⁽¹⁾	50% Member COLA Rates				
	Plan 1	Plan 2	Plan 4	Plan 5	Plan 6
16	4.25%	4.59%	3.34%	2.96%	2.77%
17	4.31%	4.65%	3.39%	3.01%	2.81%
18	4.37%	4.72%	3.44%	3.05%	2.85%
19	4.43%	4.79%	3.49%	3.09%	2.89%
20	4.50%	4.86%	3.54%	3.14%	2.94%
21	4.56%	4.93%	3.59%	3.18%	2.98%
22	4.63%	5.00%	3.64%	3.23%	3.02%
23	4.70%	5.07%	3.69%	3.28%	3.07%
24	4.76%	5.15%	3.75%	3.33%	3.11%
25	4.84%	5.22%	3.80%	3.37%	3.16%
26	4.90%	5.30%	3.86%	3.42%	3.20%
27	4.98%	5.37%	3.91%	3.47%	3.25%
28	5.05%	5.45%	3.97%	3.52%	3.30%
29	5.12%	5.53%	4.03%	3.57%	3.34%
30	5.20%	5.61%	4.09%	3.62%	3.39%
31	5.27%	5.69%	4.15%	3.68%	3.44%
32	5.35%	5.78%	4.21%	3.73%	3.49%
33	5.43%	5.87%	4.27%	3.79%	3.54%
34	5.51%	5.95%	4.33%	3.84%	3.59%
35	5.59%	6.04%	4.40%	3.90%	3.65%
36	5.68%	6.13%	4.47%	3.96%	3.70%
37	5.77%	6.23%	4.53%	4.02%	3.76%
38	5.86%	6.33%	4.60%	4.08%	3.82%
39	5.94%	6.42%	4.67%	4.14%	3.87%
40	6.04%	6.52%	4.74%	4.20%	3.93%
41	6.13%	6.62%	4.81%	4.26%	3.99%
42	6.22%	6.72%	4.87%	4.32%	4.04%
43	6.31%	6.82%	4.93%	4.37%	4.09%
44	6.40%	6.91%	4.97%	4.41%	4.13%
45	6.48%	6.99%	5.01%	4.44%	4.15%
46	6.53%	7.06%	5.01%	4.45%	4.16%
47	6.57%	7.09%	5.01%	4.45%	4.16%
48	6.57%	7.09%	5.14%	4.56%	4.27%
49	6.57%	7.09%	5.30%	4.70%	4.40%
50	6.57%	7.09%	5.30%	4.70%	4.40%

1. For Safety members entering after age 50, the rate equals the rate at age 50.

Exhibit D-5
Probation Member Contribution Rates

Entry Age ⁽¹⁾	50% Member COLA Rates				
	Plan 1	Plan 2	Plan 4	Plan 5	Plan 6
16	4.71%	4.71%	3.38%	2.98%	2.60%
17	4.78%	4.78%	3.44%	3.03%	2.64%
18	4.85%	4.85%	3.48%	3.07%	2.67%
19	4.92%	4.92%	3.53%	3.11%	2.71%
20	5.00%	5.00%	3.59%	3.16%	2.75%
21	5.07%	5.07%	3.64%	3.20%	2.79%
22	5.14%	5.14%	3.69%	3.25%	2.83%
23	5.21%	5.21%	3.74%	3.30%	2.87%
24	5.29%	5.29%	3.80%	3.35%	2.92%
25	5.37%	5.37%	3.86%	3.40%	2.96%
26	5.44%	5.44%	3.91%	3.45%	3.00%
27	5.52%	5.52%	3.97%	3.49%	3.04%
28	5.60%	5.60%	4.03%	3.55%	3.09%
29	5.69%	5.69%	4.08%	3.60%	3.13%
30	5.77%	5.77%	4.14%	3.65%	3.18%
31	5.85%	5.85%	4.21%	3.70%	3.23%
32	5.94%	5.94%	4.26%	3.76%	3.27%
33	6.03%	6.03%	4.33%	3.81%	3.32%
34	6.12%	6.12%	4.39%	3.87%	3.37%
35	6.21%	6.21%	4.46%	3.93%	3.42%
36	6.31%	6.31%	4.53%	3.99%	3.47%
37	6.40%	6.40%	4.59%	4.05%	3.52%
38	6.50%	6.50%	4.67%	4.11%	3.58%
39	6.60%	6.60%	4.73%	4.17%	3.63%
40	6.70%	6.70%	4.80%	4.23%	3.68%
41	6.81%	6.81%	4.87%	4.29%	3.74%
42	6.91%	6.91%	4.93%	4.35%	3.79%
43	7.01%	7.01%	4.99%	4.40%	3.83%
44	7.10%	7.10%	5.04%	4.44%	3.87%
45	7.19%	7.19%	5.07%	4.47%	3.89%
46	7.25%	7.25%	5.08%	4.48%	3.90%
47	7.29%	7.29%	5.08%	4.48%	3.90%
48	7.29%	7.29%	5.21%	4.59%	4.00%
49	7.29%	7.29%	5.38%	4.73%	4.12%
50	7.29%	7.29%	5.38%	4.73%	4.12%

1. For Probation members entering after age 50, the rate equals the rate at age 50.

Exhibit 10
Employer Statutory Contribution Rates – All Plans
For the 2021-2022 Fiscal Year

All Plans								
	Employer Rates							Prior Year Total Contribution Rate
	Gross Normal Cost	Member Contributions	Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾	Total Contribution Rate	
<u>General</u>								
County	20.74%	(11.17)%	7.41%	2.16%	9.57%	23.22%	32.79%	32.11%
Courts	21.01%	(11.38)%	7.44%	2.19%	9.63%	26.22%	35.85%	35.22%
Total	20.75%	(11.18)%	7.41%	2.16%	9.57%	23.36%	32.93%	32.25%
SMCM&VCD	21.22%	(8.85)%	9.10%	3.27%	12.37%	0.39%	12.76%	12.58%
Safety	35.30%	(17.73)%	13.52%	4.05%	17.57%	54.42%	71.99%	68.89%
Probation	35.51%	(17.21)%	14.19%	4.11%	18.30%	47.68%	65.98%	60.52%
All Plans	23.11%	(12.21)%	8.43%	2.47%	10.90%	28.01%	38.91%	37.86%
County Only	23.21%	(12.26)%	8.47%	2.48%	10.95%	28.19%	39.14%	38.06%

¹ County UAAL Contribution Rate includes an aggregate offset of 3.54% of payroll to reflect the County Supplementary Contribution Account. Offsets vary by class of member as follows:
 - General member UAAL offset is 3.00% of payroll
 - Safety member UAAL offset is 6.14% of payroll
 - Probation member UAAL offset is 6.28% of payroll
 SMCM&VCD UAAL Contribution Rate includes an offset of 25.83% of payroll to reflect the District Supplementary Contribution Account.

Exhibit 10a
Employer Statutory Contribution Rates – General Members
For the 2021-2022 Fiscal Year

	Employer Rates							Prior Year Total Contribution Rate
	Gross Normal Cost	Member Contributions	Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾	Total Contribution Rate	
General Members								
<u>Plan 1</u>								
County	26.80%	(14.95)%	8.37%	3.48%	11.85%	23.22%	35.07%	45.05%
Courts	26.80%	(14.95)%	8.37%	3.48%	11.85%	26.22%	38.07%	48.08%
Total	26.80%	(14.95)%	8.37%	3.48%	11.85%	23.22%	35.07%	45.05%
<u>Plan 2</u>								
County	23.34%	(13.59)%	6.70%	3.05%	9.75%	23.22%	32.97%	32.02%
Courts	23.34%	(13.59)%	6.70%	3.05%	9.75%	26.22%	35.97%	35.05%
Total	23.34%	(13.59)%	6.70%	3.05%	9.75%	23.34%	33.09%	32.14%
<u>Plan 3</u>								
County	8.51%	0.00%	8.51%	0.00%	8.51%	23.22%	31.73%	30.67%
Courts	8.51%	0.00%	8.51%	0.00%	8.51%	26.22%	34.73%	33.70%
Total	8.51%	0.00%	8.51%	0.00%	8.51%	23.29%	31.80%	30.67%
<u>Plan 4</u>								
County	23.44%	(13.45)%	7.57%	2.42%	9.99%	23.22%	33.21%	32.47%
Courts	23.44%	(13.45)%	7.57%	2.42%	9.99%	26.22%	36.21%	35.50%
Total	23.44%	(13.45)%	7.57%	2.42%	9.99%	23.38%	33.37%	32.64%
<u>Plan 5</u>								
County	21.65%	(9.90)%	9.57%	2.18%	11.75%	23.22%	34.97%	34.22%
Courts	21.65%	(9.90)%	9.57%	2.18%	11.75%	26.22%	37.97%	37.25%
Total	21.65%	(9.90)%	9.57%	2.18%	11.75%	23.37%	35.12%	34.36%
<u>Plan 7</u>								
County	17.49%	(8.75)%	7.02%	1.72%	8.74%	23.22%	31.96%	31.29%
Courts	17.49%	(8.75)%	7.02%	1.72%	8.74%	26.22%	34.96%	34.32%
Total	17.49%	(8.75)%	7.02%	1.72%	8.74%	23.35%	32.09%	31.41%
<u>All Plans</u>								
County	20.74%	(11.17)%	7.41%	2.16%	9.57%	23.22%	32.79%	32.11%
Courts	21.01%	(11.38)%	7.44%	2.19%	9.63%	26.22%	35.85%	35.22%
Total	20.75%	(11.18)%	7.41%	2.16%	9.57%	23.36%	32.93%	32.25%

1. UAAL Contribution Rate includes an offset of 3.00% of payroll to reflect the County Supplementary Contribution Account, except for Courts.

Exhibit 10b
Employer Statutory Contribution Rates – SMCM&VCD Members
For the 2021-2022 Fiscal Year

SMCM&VCD Members								
	Employer Rates							Prior Year Total Contribution Rate
	Gross Normal Cost	Member Contributions	Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾	Total Contribution Rate	
Plan 1 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 4	22.74%	(8.19)%	10.21%	4.34%	14.55%	0.39%	14.94%	14.61%
Plan 7	19.34%	(9.67)%	7.73%	1.94%	9.67%	0.39%	10.06%	9.24%
All Plans	21.22%	(8.85)%	9.10%	3.27%	12.37%	0.39%	12.76%	12.58%

1. UAAL Contribution Rate includes an offset of 25.83% of payroll to reflect the District Supplementary Contribution Account.
2. There are currently no active Plan 1 or Plan 2 members. Employer rates will be developed in the future if needed.

Exhibit 10c
Employer Statutory Contribution Rates – Safety Members
For the 2021-2022 Fiscal Year

Safety Members								
	Gross Normal Cost	Member Contributions	Employer Rates				Total Contribution Rate	Prior Year Total Contribution Rate
			Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾		
Plan 1 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2	40.73%	(19.42)%	15.02%	6.29%	21.31%	54.42%	75.73%	72.33%
Plan 4	38.39%	(19.46)%	14.64%	4.29%	18.93%	54.42%	73.35%	69.53%
Plan 5	38.06%	(19.29)%	14.59%	4.18%	18.77%	54.42%	73.19%	70.47%
Plan 6 ⁽²⁾	N/A	N/A	N/A	N/A	NA	NA	NA	NA
Plan 7	29.43%	(14.72)%	11.47%	3.24%	14.71%	54.42%	69.13%	66.15%
All Plans	35.30%	(17.73)%	13.52%	4.05%	17.57%	54.42%	71.99%	68.89%

1. UAAL Contribution Rate includes an offset of 6.14% of payroll to reflect the County Supplementary Contribution Account.
2. There are currently no active Safety Plan 1 or Plan 6 members. Employer rates will be developed in the future if needed.

Exhibit 10d
Employer Statutory Contribution Rates – Probation Members
For the 2021-2022 Fiscal Year

	Employer Rates							Prior Year Total Contribution Rate
	Gross Normal Cost	Member Contributions	Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾	Total Contribution Rate	
Plan 1 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2	39.04%	(18.10)%	15.04%	5.90%	20.94%	47.68%	68.62%	62.52%
Plan 4	36.92%	(17.77)%	14.95%	4.20%	19.15%	47.68%	66.83%	61.10%
Plan 5	33.40%	(17.42)%	12.20%	3.78%	15.98%	47.68%	63.66%	59.05%
Plan 6 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 7	29.70%	(14.85)%	11.54%	3.31%	14.85%	47.68%	62.53%	57.52%
All Plans	35.51%	(17.21)%	14.19%	4.11%	18.30%	47.68%	65.98%	60.52%

1. UAAL Contribution Rate includes an offset of 6.28% of payroll to reflect the County Supplementary Contribution Account.
2. There are currently no active Probation Plan 1 or Plan 6 members. Employer rates will be developed in the future if needed.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 6.1

TO: Board of Retirement

FROM: Michael Coultrip, Chief Investment Officer



SUBJECT: Preliminary Monthly Portfolio Performance Report for the Period Ended August 31, 2020

Recommendation

Accept the preliminary performance report dated August 31, 2020.

Background

This preliminary report is intended to provide a high-level view of the portfolio and its trends. It is not intended to provide short-term performance upon which the Board would act. The quarterly performance metrics are not yet available for our private equity, private credit, private real asset, and real estate portfolios. The performance for these portfolios will be reflected in the quarterly performance report generated by Verus.

The attached performance report shows both net and gross of fee returns for the total plan on page one, with net composite returns (pages 2-3) and net manager returns (pages 4-11) also shown.

Discussion

The fund's net preliminary return for August was 3.0%, bringing the preliminary trailing twelve-month net return ending August 2020 to 6.6%. The preliminary twelve-month net return is below SamCERA's Plan Benchmark return of 9.0% but higher than SamCERA's Actuarial Assumed Earnings Rate of 6.5%.

Global markets continued their risk-on rally on the back of unprecedented monetary and fiscal stimulus. The U.S. equity market (measured by the S&P 500 Index) was up 7.2% (+9.7% YTD). Small-cap stocks were up 5.6% (-5.5% YTD). International markets were also higher on the month. Developed international equity (as measured by MSCI EAFE) was up 5.1% (-4.6% YTD), while emerging markets were up 2.2% (+0.4% YTD).

The big news during the month was the Federal Reserve changed its monetary policy framework for targeting inflation. Instead of targeting a 2% inflation rate, the Fed will now target a 2% average inflation rate over time. Since inflation has been under-target over the past few years, the Fed will now allow inflation to be over-target for a period of time before raising rates.

Economic data was generally positive, but the improvement seemed to be slowing. The ISM Manufacturing Index increased, while consumer confidence was positive but showed some softness, and the improvement in the U.S. labor market slowed.

The general U.S. fixed income market was lower by 0.8% as interest rates were higher across the yield curve. The 10-year U.S. Treasury yield was higher by 18 basis points during the month and ended at 0.70% by month-end. High Yield returns were up 1.0% as credit spreads narrowed.

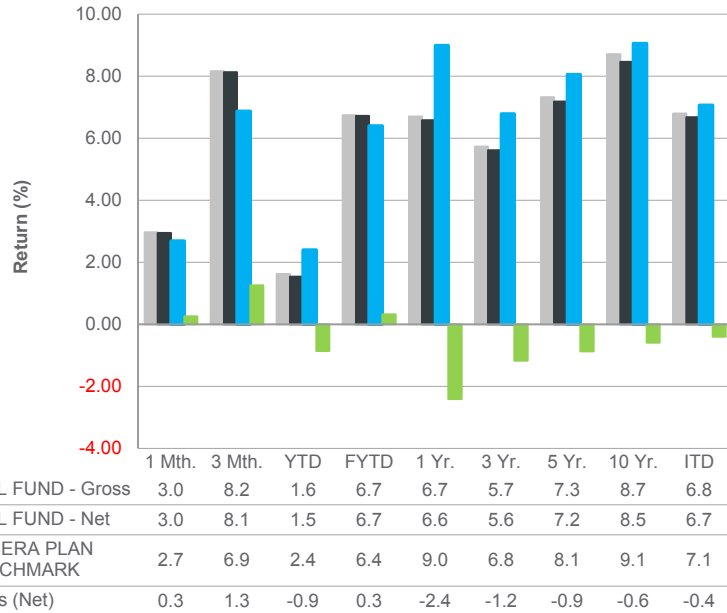
Attachments

Northern Trust Monthly Preliminary Performance Report
Verus Capital Market Update

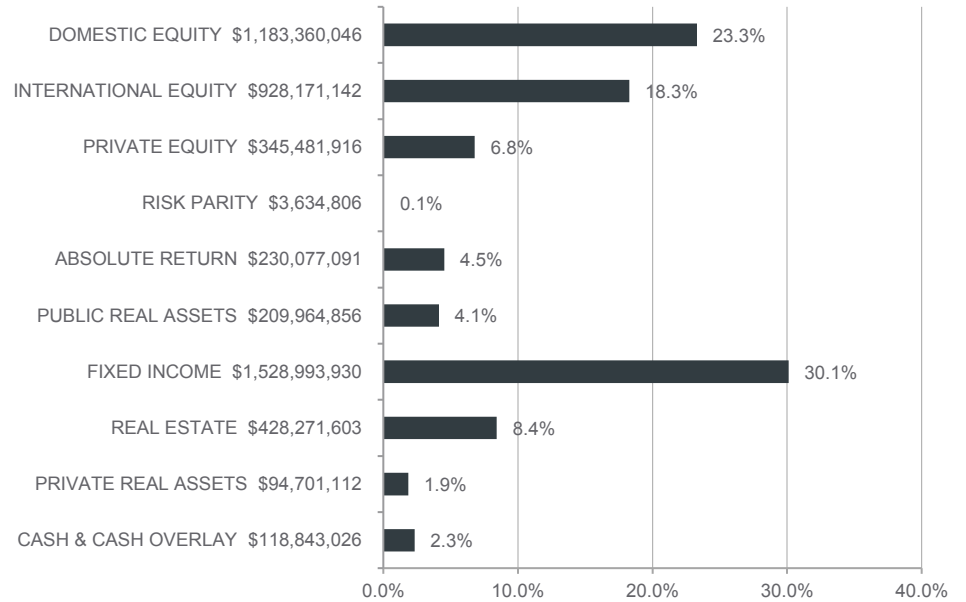
San Mateo County Composite Return Summary August 31, 2020



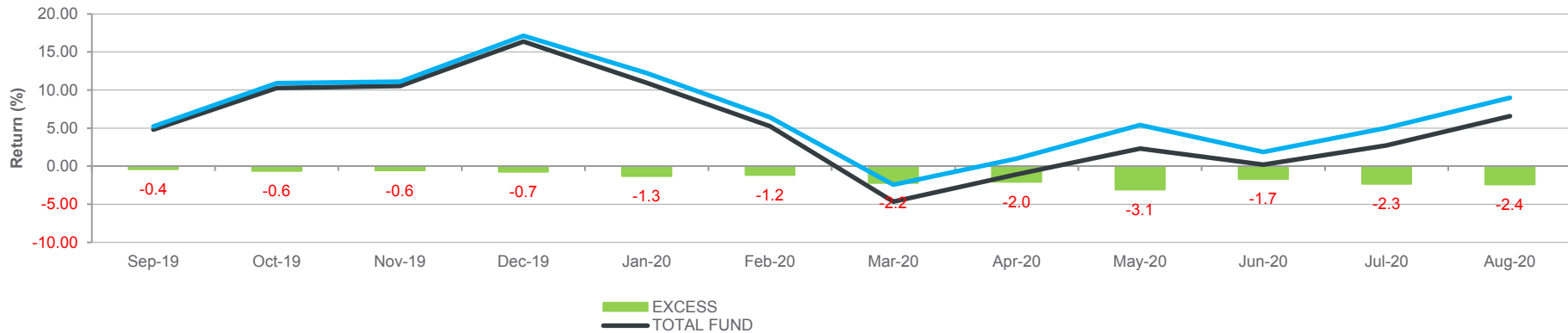
Total Fund Performance



Asset Allocation

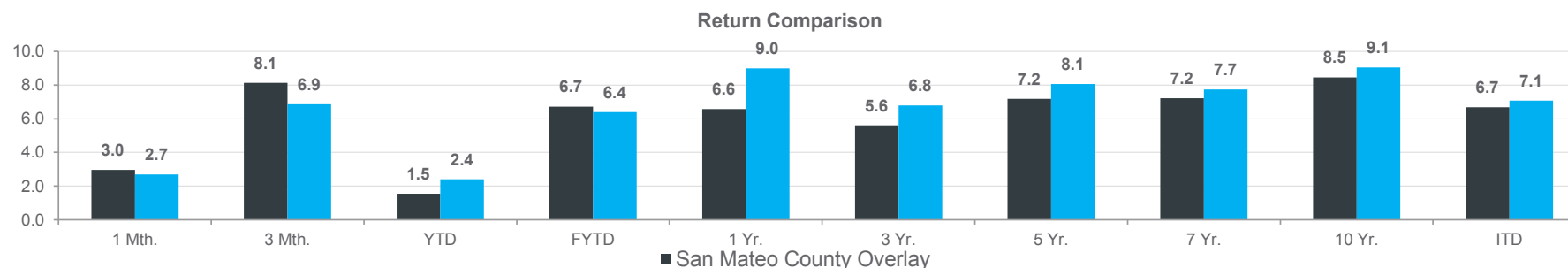


Rolling Month End Annual Returns



San Mateo County Composite Return Summary

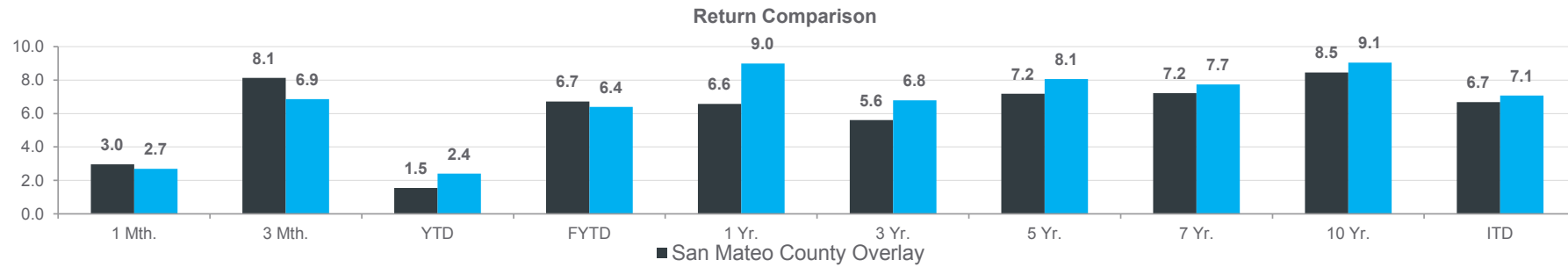
August 31, 2020



Composite Returns (Net of Manager Fees)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
San Mateo County Overlay	5,076,834,742	3.0	8.1	1.5	6.7	6.6	5.6	7.2	7.2	8.5	6.7
Samcera Total Plan Benchmark		2.7	6.9	2.4	6.4	9.0	6.8	8.1	7.7	9.1	7.1
Excess		0.3	1.3	-0.9	0.3	-2.4	-1.2	-0.9	-0.5	-0.6	-0.4
San Mateo Ex-Clifton Overlay	5,065,289,825	3.0	8.1	1.5	6.7	6.5	5.5	7.1	7.1	8.4	6.6
Samcera Total Plan Benchmark		2.7	6.9	2.4	6.4	9.0	6.8	8.1	7.7	9.1	7.1
Excess		0.3	1.2	-0.9	0.3	-2.5	-1.3	-1.0	-0.6	-0.7	-0.5
Total Equity	2,111,531,187	5.3	13.1	2.1	10.0	12.9	8.0	9.8	9.3	10.8	7.8
Samcera Total Equity Benchmark		5.8	13.9	3.6	10.6	14.9	8.7	10.9	10.5	11.8	8.5
Excess		-0.5	-0.9	-1.4	-0.6	-2.1	-0.7	-1.1	-1.2	-1.0	-0.6
Fixed Income	1,528,993,930	0.5	3.4	4.3	2.1	5.2	4.5	5.0	4.7	4.9	5.6
Samcera Fixed Income Benchmark		-0.4	2.7	5.4	2.0	6.1	5.1	4.9	4.4	3.9	5.2
Excess		0.9	0.7	-1.0	0.1	-0.8	-0.6	0.1	0.3	1.0	0.4
Risk Parity	3,634,806	-0.0	-0.0	-8.5	-0.0	-6.5	2.8	5.6	5.6	--	5.4
Samcera Risk Parity Benchmark		3.9	10.4	6.1	8.3	12.7	7.7	9.0	8.9	--	8.7
Excess		-4.0	-10.4	-14.6	-8.3	-19.2	-4.9	-3.4	-3.3	--	-3.3

San Mateo County Composite Return Summary

August 31, 2020



Composite Returns (Net of Manager Fees)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Alternatives	575,559,007	3.9	16.4	12.4	15.8	10.5	8.3	7.6	7.3	-2.1	-0.8
Samcera Alternatives Benchmark		2.9	2.8	4.7	9.9	10.5	9.1	9.3	8.4	9.8	7.8
Excess		1.0	13.6	7.6	5.9	-0.0	-0.7	-1.7	-1.0	-11.9	-8.6
Inflation Hedge	732,937,571	1.3	0.9	-9.5	2.6	-6.6	-0.5	--	--	--	3.3
SamCERA Inflation Hedge Index		1.1	1.5	-4.8	3.0	-0.8	2.7	--	--	--	4.6
Excess		0.3	-0.6	-4.7	-0.3	-5.8	-3.2	--	--	--	-1.4
Cash	118,843,026	0.0	0.2	0.6	0.2	0.9	1.0	0.8	0.7	0.7	1.9
Samcera Cash Benchmark		0.0	0.0	0.6	0.0	1.3	1.7	1.2	0.9	0.6	1.8
Excess		0.0	0.2	-0.0	0.1	-0.3	-0.7	-0.3	-0.1	0.1	0.0

San Mateo County Composite Return Summary

August 31, 2020



Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Total Equity	2,111,531,187	5.3	13.1	2.1	10.0	12.9	8.0	9.8	9.3	10.8	7.8
Samcera Total Equity Benchmark		5.8	13.9	3.6	10.6	14.9	8.7	10.9	10.5	11.8	8.5
Excess		-0.5	-0.9	-1.4	-0.6	-2.1	-0.7	-1.1	-1.2	-1.0	-0.6
Domestic Equity	1,183,360,046	5.8	13.1	4.7	11.3	14.8	11.6	12.3	11.8	13.8	8.9
Samcera Dom. Equity Benchmark		7.2	15.9	9.4	13.3	21.4	13.9	13.8	13.1	14.9	9.5
Excess		-1.4	-2.8	-4.7	-2.0	-6.6	-2.4	-1.5	-1.3	-1.1	-0.6
Large Cap Equity	1,117,337,118	6.0	13.2	6.4	11.7	16.4	12.7	13.4	13.0	14.4	9.7
Russell 1000		7.3	16.1	10.4	13.6	22.5	14.6	14.3	13.7	15.2	10.2
Excess		-1.3	-2.9	-4.0	-2.0	-6.1	-1.9	-0.9	-0.7	-0.8	-0.5
Blackrock Russell 1000	577,689,298	7.3	16.3	10.6	13.6	22.7	14.6	--	--	--	15.1
Russell 1000		7.3	16.1	10.4	13.6	22.5	14.6	--	--	--	15.0
Excess		-0.0	0.1	0.2	-0.0	0.2	0.0	--	--	--	0.1
DE Shaw Commingled Fund	172,669,247	8.0	16.1	7.7	13.9	19.4	12.4	13.9	--	--	12.1
Russell 1000		7.3	16.1	10.4	13.6	22.5	14.6	14.3	--	--	12.0
Excess		0.7	0.0	-2.8	0.2	-3.1	-2.2	-0.5	--	--	0.1
Acadian US MGD V-SL	181,305,758	4.1	7.2	-2.5	8.2	4.4	--	--	--	--	13.8
Russell 1000		7.3	16.1	10.4	13.6	22.5	--	--	--	--	25.4
Excess		-3.3	-8.9	-12.9	-5.4	-18.1	--	--	--	--	-11.6
Panagora Defuseq -SL	185,672,815	2.1	7.4	-1.9	7.3	2.9	--	--	--	--	16.4
Russell 1000		7.3	16.1	10.4	13.6	22.5	--	--	--	--	25.4
Excess		-5.2	-8.8	-12.4	-6.3	-19.6	--	--	--	--	-9.0
Domestic Equity Overlay	11,371,425	-3.7	9.0	--	2.1	--	--	--	--	--	19.1
ICE BofAML US 3-Month Treasury Bill		0.0	0.0	--	0.0	--	--	--	--	--	0.0
Excess		-3.7	9.0	--	2.1	--	--	--	--	--	19.0
Small Cap Equity	77,394,353	2.9	10.5	-15.9	6.8	-4.5	-0.9	2.5	3.5	8.7	5.3
Russell 2000		5.6	12.4	-5.5	8.6	6.0	5.0	7.7	7.9	11.5	7.4
Excess		-2.7	-1.9	-10.3	-1.7	-10.5	-5.9	-5.2	-4.4	-2.8	-2.1

San Mateo County Composite Return Summary

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Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
QMA US Small Cap	77,394,353	2.9	10.5	-15.9	6.8	-4.5	-0.9	--	--	--	3.3
Russell 2000		5.6	12.4	-5.5	8.6	6.0	5.0	--	--	--	7.4
Excess		-2.7	-1.9	-10.3	-1.7	-10.5	-5.9	--	--	--	-4.1
International Equity	928,171,142	4.7	13.1	-0.9	8.2	10.5	3.8	6.6	5.5	5.7	5.4
SamCERA Custom Hedge Intl		4.2	11.5	-3.2	7.3	7.4	2.5	5.8	4.7	5.4	4.9
Excess		0.5	1.5	2.3	0.9	3.1	1.2	0.7	0.8	0.3	0.5
Baillie Gifford	330,772,939	6.8	19.3	14.6	13.6	30.2	10.6	11.8	9.4	--	9.7
MSCI ACWI ex USA Growth		4.1	16.8	8.5	11.2	20.4	8.7	9.9	8.0	--	--
Excess		2.7	2.4	6.2	2.4	9.8	1.9	1.9	1.4	--	--
Blackrock MSCI ACWI ex US IMI	318,990,560	4.6	--	--	9.2	--	--	--	--	--	5.6
MS AC WidxUS IMI Nt		4.6	--	--	9.3	--	--	--	--	--	6.0
Excess		0.0	--	--	-0.1	--	--	--	--	--	-0.4
Mondrian Investment Partners	280,342,933	3.9	11.8	-13.1	7.4	-0.3	-0.9	2.6	2.9	4.1	4.4
MSCI ACWI xUSA Value		4.5	11.1	-13.7	6.8	-2.6	-2.5	2.5	1.9	3.4	4.1
Excess		-0.6	0.7	0.6	0.6	2.3	1.6	0.2	1.0	0.7	0.3
EV Parametric EM	0	--	--	--	--	--	--	--	--	--	--
MSCI Emerging Markets GD		--	--	--	--	--	--	--	--	--	--
Excess		--	--	--	--	--	--	--	--	--	--
Currency Hedge Futures	329,691,086	1.3	6.2	--	5.1	--	--	--	--	--	6.5
ICE BofAML US 3-Month Treasury Bill		0.0	0.0	--	0.0	--	--	--	--	--	0.0
Excess		1.3	6.2	--	5.1	--	--	--	--	--	6.5
Currency Hedge Futures Offsets	329,691,086	0.0	0.0	--	0.0	--	--	--	--	--	0.0
ICE BofAML US 3-Month Treasury Bill		0.0	0.0	--	0.0	--	--	--	--	--	0.0
Excess		-0.0	-0.0	--	-0.0	--	--	--	--	--	-0.0
International Equity Overlay	1,935,290	4.8	24.7	--	15.7	--	--	--	--	--	29.8
ICE BofAML US 3-Month Treasury Bill		0.0	0.0	--	0.0	--	--	--	--	--	0.0
Excess		4.8	24.6	--	15.6	--	--	--	--	--	29.8

San Mateo County Composite Return Summary

August 31, 2020



Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Fixed Income	1,528,993,930	0.5	3.4	4.3	2.1	5.2	4.5	5.0	4.7	4.9	5.6
Samcera Fixed Income Benchmark		-0.4	2.7	5.4	2.0	6.1	5.1	4.9	4.4	3.9	5.2
Excess		0.9	0.7	-1.0	0.1	-0.8	-0.6	0.1	0.3	1.0	0.4
Core Fixed Income	1,033,150,507	-0.3	2.5	6.2	1.3	7.2	4.7	4.7	4.6	4.4	5.4
BBG Barclays US Aggregate		-0.8	1.3	6.9	0.7	6.5	5.1	4.3	4.1	3.7	5.1
Excess		0.5	1.2	-0.6	0.6	0.7	-0.4	0.3	0.5	0.8	0.3
FIAM Core Bond	268,243,658	-0.4	3.2	8.5	1.5	8.6	5.9	5.2	4.9	4.5	5.1
BBG Barclays US Aggregate		-0.8	1.3	6.9	0.7	6.5	5.1	4.3	4.1	3.7	4.6
Excess		0.4	1.9	1.7	0.9	2.2	0.8	0.9	0.7	0.8	0.5
Western Total Return	182,481,664	0.5	5.0	2.7	2.8	7.8	3.8	4.8	--	--	4.7
BBG Barclays US Aggregate		-0.8	1.3	6.9	0.7	6.5	5.1	4.3	--	--	4.2
Excess		1.3	3.7	-4.1	2.1	1.3	-1.3	0.5	--	--	0.4
Blackrock Inter Gov	140,420,590	-0.2	0.3	6.1	0.2	5.7	4.0	--	--	--	3.9
BBG Barclays US Aggregate		-0.8	1.3	6.9	0.7	6.5	5.1	--	--	--	5.2
Excess		0.6	-1.0	-0.8	-0.5	-0.8	-1.1	--	--	--	-1.4
DoubleLine	229,696,711	-0.6	2.6	--	1.1	--	--	--	--	--	4.8
BBG Barclays US Aggregate		-0.8	1.3	--	0.7	--	--	--	--	--	3.0
Excess		0.2	1.3	--	0.5	--	--	--	--	--	1.8
NISA Core Bond	204,336,384	-0.7	1.5	--	0.8	--	--	--	--	--	2.3
BBG Barclays US Aggregate		-0.8	1.3	--	0.7	--	--	--	--	--	1.8
Excess		0.1	0.2	--	0.1	--	--	--	--	--	0.6
Core Fixed Income Overlay	7,971,500	-1.1	0.5	--	-0.5	--	--	--	--	--	0.1
ICE BofAML US 3-Month Treasury Bill		0.0	0.0	--	0.0	--	--	--	--	--	0.0
Excess		-1.1	0.4	--	-0.6	--	--	--	--	--	0.0
Opportunistic Credit	495,843,423	2.4	5.2	0.6	3.9	1.3	3.9	5.9	5.9	7.7	8.2
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	5.6	6.4	6.0	6.7	7.3
Excess		1.8	-0.4	-3.4	-1.0	-5.3	-1.8	-0.5	-0.1	1.0	0.9

San Mateo County Composite Return Summary

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Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Pimco Private Income	39,520,112	7.2	7.2	2.6	7.2	5.1	--	--	--	--	4.0
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	--	--	--	--	7.9
Excess		6.7	1.7	-1.4	2.3	-1.5	--	--	--	--	-3.9
AG CREDIT SOL FU LP	11,585,243	6.6	6.6	13.3	6.6	--	--	--	--	--	13.3
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	--	--	--	--	--	4.0
Excess		6.0	1.0	9.3	1.7	--	--	--	--	--	9.3
AG CSF ANX DISLOC FD	17,978,102	5.9	6.0	--	5.9	--	--	--	--	--	6.0
BB Barc BA Intermediate HY Ind		0.6	5.6	--	4.9	--	--	--	--	--	15.6
Excess		5.3	0.4	--	1.0	--	--	--	--	--	-9.6
AG Opportunistic Whole Loan	2,457,194	0.0	-24.2	-22.3	0.0	-19.5	6.6	8.0	--	--	6.1
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	5.6	6.4	--	--	5.4
Excess		-0.6	-29.8	-26.3	-4.9	-26.1	1.0	1.6	--	--	0.7
Angelo Gordon	588,203	59.4	59.4	36.7	59.4	39.8	31.3	22.5	19.4	--	18.5
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	5.6	6.4	6.0	--	5.7
Excess		58.8	53.9	32.7	54.5	33.1	25.6	16.2	13.5	--	12.8
Blackrock Direct Lending Feede	3,495,374	0.0	-0.5	-7.5	0.0	-7.5	--	--	--	--	-6.0
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	--	--	--	--	8.8
Excess		-0.6	-6.1	-11.4	-4.9	-14.1	--	--	--	--	-14.8
Beach Point Select Fund	76,976,038	5.5	8.1	2.6	5.5	5.2	5.6	7.1	--	--	7.3
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	5.6	6.4	--	--	5.7
Excess		4.9	2.6	-1.4	0.6	-1.5	-0.0	0.7	--	--	1.6
Brigade Cap Mngmt	89,583,677	2.7	10.1	-1.1	6.3	-1.7	1.5	4.6	3.8	5.5	5.5
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	5.6	6.4	6.0	6.7	6.7
Excess		2.1	4.6	-5.1	1.3	-8.3	-4.1	-1.7	-2.2	-1.2	-1.2
White Oak Yield Spec	32,727,234	2.7	2.7	4.1	2.7	5.5	6.4	--	--	--	--
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	5.6	--	--	--	6.0
Excess		2.1	-2.9	0.1	-2.3	-1.1	0.7	--	--	--	--

San Mateo County Composite Return Summary

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Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
PIMCO Div. Income Fund	129,517,894	0.5	5.0	2.6	3.5	4.1	4.9	--	--	--	5.1
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	5.6	--	--	--	5.5
Excess		-0.1	-0.5	-1.4	-1.5	-2.5	-0.7	--	--	--	-0.5
TCP Direct Lending VIII	33,317,990	0.0	1.5	0.4	0.0	2.5	4.8	--	--	--	--
BB Barc BA Intermediate HY Ind		0.6	5.6	4.0	4.9	6.6	5.6	--	--	--	6.5
Excess		-0.6	-4.1	-3.6	-4.9	-4.1	-0.9	--	--	--	--
Franklin Templeton	58,096,363	-1.1	-3.2	-8.4	-0.8	-11.7	-2.4	0.8	1.0	--	2.3
BB Barclays Multiverse Index		-0.1	4.1	5.8	3.2	5.4	3.9	4.2	2.9	--	2.8
Excess		-1.0	-7.3	-14.1	-3.9	-17.1	-6.3	-3.5	-2.0	--	-0.5
Risk Parity	3,634,806	-0.0	-0.0	-8.5	-0.0	-6.5	2.8	5.6	5.6	--	5.4
Samcera Risk Parity Benchmark		3.9	10.4	6.1	8.3	12.7	7.7	9.0	8.9	--	8.7
Excess		-4.0	-10.4	-14.6	-8.3	-19.2	-4.9	-3.4	-3.3	--	-3.3
AQR Global Risk III	0	--	--	--	--	--	--	--	--	--	--
Samcera Risk Parity Benchmark		--	--	--	--	--	--	--	--	--	--
Excess		--	--	--	--	--	--	--	--	--	--
Panagora	3,634,806	0.0	0.0	-5.2	0.0	-5.5	3.4	6.3	--	--	5.3
Samcera Risk Parity Benchmark		3.9	10.4	6.1	8.3	12.7	7.7	9.0	--	--	7.7
Excess		-3.9	-10.4	-11.4	-8.3	-18.2	-4.4	-2.7	--	--	-2.4
Alternatives	575,559,007	3.9	16.4	12.4	15.8	10.5	8.3	7.6	7.3	-2.1	-0.8
Samcera Alternatives Benchmark		2.9	2.8	4.7	9.9	10.5	9.1	9.3	8.4	9.8	7.8
Excess		1.0	13.6	7.6	5.9	-0.0	-0.7	-1.7	-1.0	-11.9	-8.6
Private Equity	345,481,916	5.5	27.9	33.1	26.5	31.0	23.6	18.6	18.8	--	-10.9
Samcera PE Benchmark		5.5	3.6	4.9	19.5	14.5	11.3	13.6	14.0	--	15.2
Excess		-0.0	24.3	28.2	7.0	16.5	12.2	5.0	4.8	--	-26.1
Absolute Return	230,077,091	1.6	2.9	-9.6	3.0	-11.1	-7.4	-2.8	0.6	--	0.8
Samcera LIBOR + 4%		0.3	1.0	3.3	0.7	5.3	5.8	5.3	5.0	--	4.8
Excess		1.3	1.8	-12.8	2.3	-16.4	-13.2	-8.1	-4.4	--	-4.0

San Mateo County Composite Return Summary

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Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
AQR Delta XN	5,045,643	0.2	-0.3	-26.8	0.2	-29.7	-17.1	-8.9	-3.9	--	-2.6
Samcera LIBOR + 4%		0.3	1.0	3.3	0.7	5.3	5.8	5.3	5.0	--	4.8
Excess		-0.1	-1.3	-30.1	-0.5	-35.0	-22.9	-14.2	-8.9	--	-7.4
Aberdeen Std GARS	78,774,138	1.5	5.6	4.8	4.4	6.1	3.1	--	--	--	1.8
Samcera LIBOR + 4%		0.3	1.0	3.3	0.7	5.3	5.8	--	--	--	5.3
Excess		1.1	4.6	1.5	3.7	0.8	-2.7	--	--	--	-3.5
Graham Global Investment	76,819,172	6.0	6.9	--	6.0	--	--	--	--	--	2.4
Samcera LIBOR +4%		0.3	1.0	--	0.7	--	--	--	--	--	2.8
Excess		5.7	5.9	--	5.3	--	--	--	--	--	-0.3
PIMCO MAARS Fund L.P.	69,438,138	-2.6	-3.5	--	-1.2	--	--	--	--	--	0.7
Samcera LIBOR +4%		0.3	1.0	--	0.7	--	--	--	--	--	1.8
Excess		-3.0	-4.5	--	-1.9	--	--	--	--	--	-1.1
Inflation Hedge	732,937,571	1.3	0.9	-9.5	2.6	-6.6	-0.5	--	--	--	3.3
SamCERA Inflation Hedge Index		1.1	1.5	-4.8	3.0	-0.8	2.7	--	--	--	4.6
Excess		0.3	-0.6	-4.7	-0.3	-5.8	-3.2	--	--	--	-1.4
Real Estate	428,271,603	0.0	-3.0	0.4	0.2	2.4	5.6	--	--	--	6.8
Samcera NCREIF ODCE EW (gross)		0.0	-1.3	-0.4	0.0	2.6	6.0	--	--	--	6.4
Excess		0.0	-1.7	0.7	0.2	-0.1	-0.4	--	--	--	0.4
Invesco Core Real Estate	263,266,152	0.0	-4.5	-0.9	0.8	1.0	5.2	6.8	8.7	10.6	7.3
Samcera NCREIF ODCE EW (gross)		0.0	-1.3	-0.4	0.0	2.6	6.0	7.6	9.3	10.9	7.3
Excess		0.0	-3.3	-0.5	0.8	-1.6	-0.8	-0.8	-0.5	-0.3	-0.0
Invesco US Val IV	14,581,505	0.0	-4.5	0.6	-4.5	5.7	9.9	--	--	--	10.6
Samcera NCREIF ODCE EW (gross)		0.0	-1.3	-0.4	0.0	2.6	6.0	--	--	--	7.2
Excess		0.0	-3.3	1.0	-4.5	3.1	3.9	--	--	--	3.4
PGIM Real Estate US Debt Fund	85,089,899	0.0	0.9	3.4	0.0	5.1	4.9	--	--	--	4.7
Samcera NCREIF ODCE EW (gross)		0.0	-1.3	-0.4	0.0	2.6	6.0	--	--	--	5.7
Excess		0.0	2.2	3.8	0.0	2.5	-1.1	--	--	--	-1.0

San Mateo County Composite Return Summary

August 31, 2020

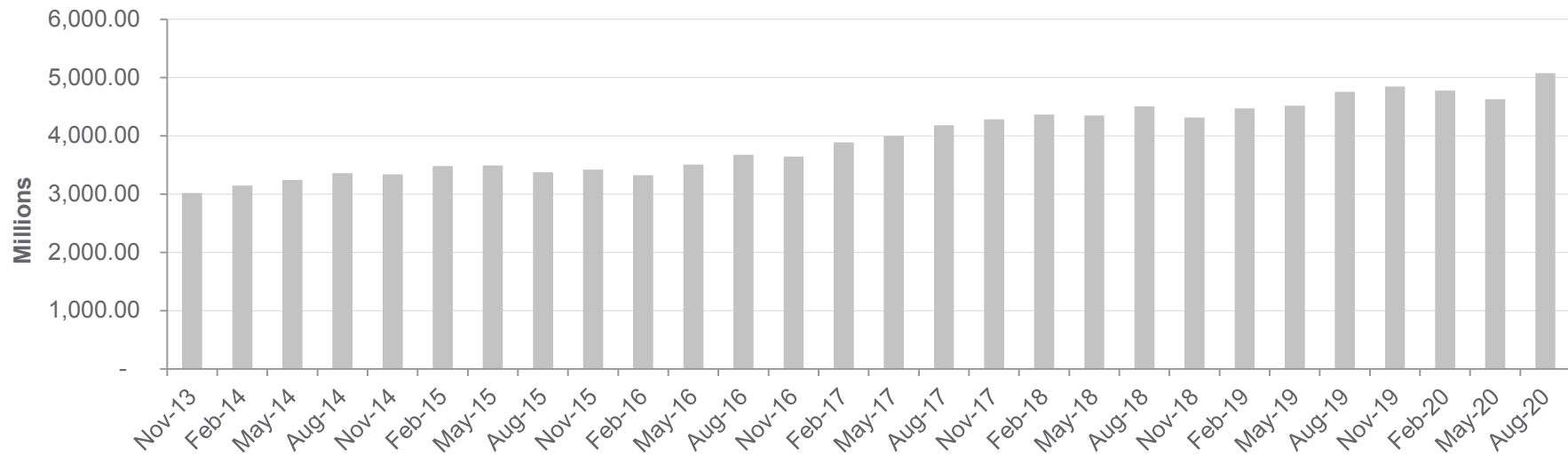


Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Invesco US VAL V	14,928,799	0.0	-3.8	1.6	-3.8	7.8	--	--	--	--	1.9
Samcera NCREIF ODCE EW (gross)		0.0	-1.3	-0.4	0.0	2.6	--	--	--	--	--
Excess		0.0	-2.6	2.0	-3.8	5.3	--	--	--	--	--
Harrison Street Core Property	50,405,248	0.0	-0.1	0.8	-0.3	--	--	--	--	--	0.8
Samcera NCREIF ODCE EW (gross)		0.0	-1.3	-0.4	0.0	--	--	--	--	--	-0.4
Excess		0.0	1.2	1.2	-0.3	--	--	--	--	--	1.2
Public Real Assets	209,964,856	2.8	8.3	-22.3	7.1	-17.4	-6.5	--	--	--	--
SamCera Liquid Real Asset Inde		2.9	8.4	-11.7	7.2	-4.8	-1.0	--	--	--	3.9
Excess		-0.1	-0.1	-10.5	-0.1	-12.6	-5.5	--	--	--	--
SSGA CST REAL ASSET NL	209,964,856	2.8	8.3	-12.4	7.1	-5.6	-1.5	--	--	--	--
SamCera Liquid Real Asset Inde		2.9	8.4	-11.7	7.2	-4.8	-1.0	--	--	--	2.3
Excess		-0.1	-0.1	-0.6	-0.1	-0.8	-0.6	--	--	--	--
Private Real Assets	94,701,112	4.4	4.9	-0.4	4.9	-1.7	-3.7	--	--	--	6.4
SamCERA Private Real Asset Idx		2.2	-3.1	-6.1	7.4	-3.6	1.2	--	--	--	4.3
Excess		2.2	7.9	5.7	-2.5	1.8	-4.9	--	--	--	2.1
Cash Overlay	11,544,918	0.0	0.1	--	0.1	--	--	--	--	--	0.2
ICE BofAML US 3-Month Treasury Bill		0.0	0.0	--	0.0	--	--	--	--	--	0.0
Excess		0.0	0.1	--	0.1	--	--	--	--	--	0.1
General Account	41,927,309	0.0	0.1	0.6	0.0	1.2	1.8	1.3	1.0	0.8	2.0
Transition Account	5,028	--	--	--	--	--	--	--	--	--	--
County Treasury Pool	38,903,069	0.0	0.2	1.0	0.2	1.7	1.8	1.4	1.2	1.1	2.6
Currency Hedge Cash Overlay	26,462,702	0.0	0.1	--	0.0	--	--	--	--	--	0.1
San Mateo County Overlay	5,076,834,742	3.0	8.1	1.5	6.7	6.6	5.6	7.2	7.2	8.5	6.7
Samcera Total Plan Benchmark		2.7	6.9	2.4	6.4	9.0	6.8	8.1	7.7	9.1	7.1
Excess		0.3	1.3	-0.9	0.3	-2.4	-1.2	-0.9	-0.5	-0.6	-0.4

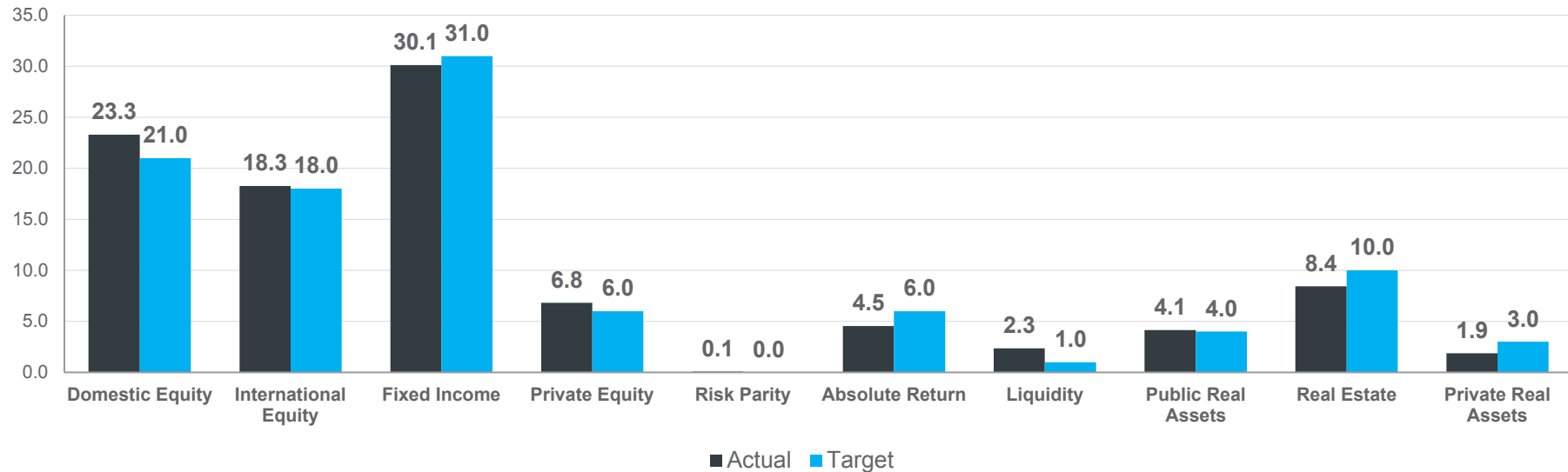
Record of Asset Growth

	Three Months	One Year
TOTAL FUND		
Beginning Market Value	4,626,596,645	4,753,326,950
Contributions	404,826,133	550,528,594
Withdrawals	-337,267,874	-538,352,664
Income Received	16,061,307	60,756,346
Gain/Loss	367,582,194	252,515,010
Ending Market Value	5,076,834,742	5,076,834,742

Net Asset Values Over Time (\$000)

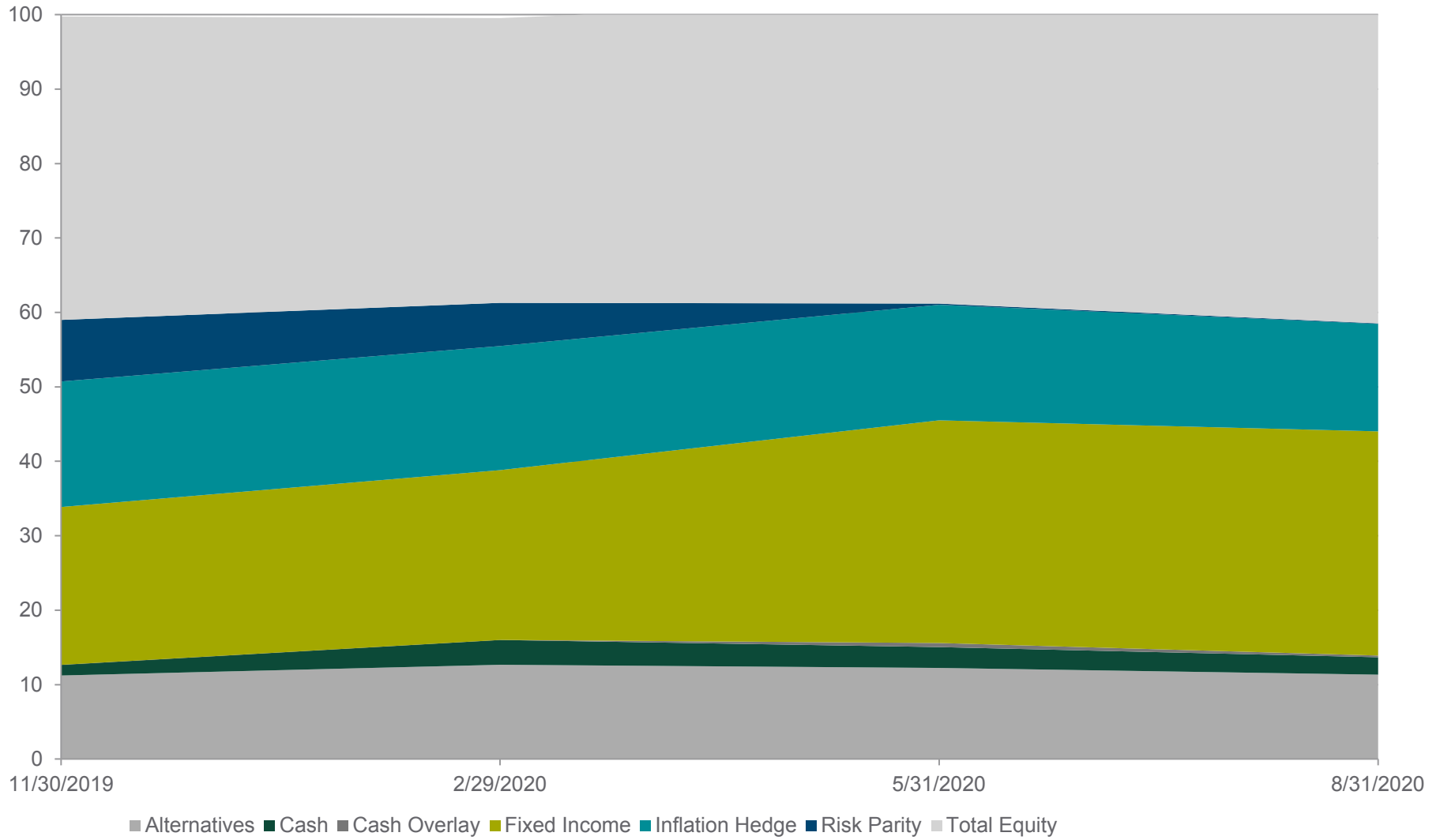


Actual vs Target Weights

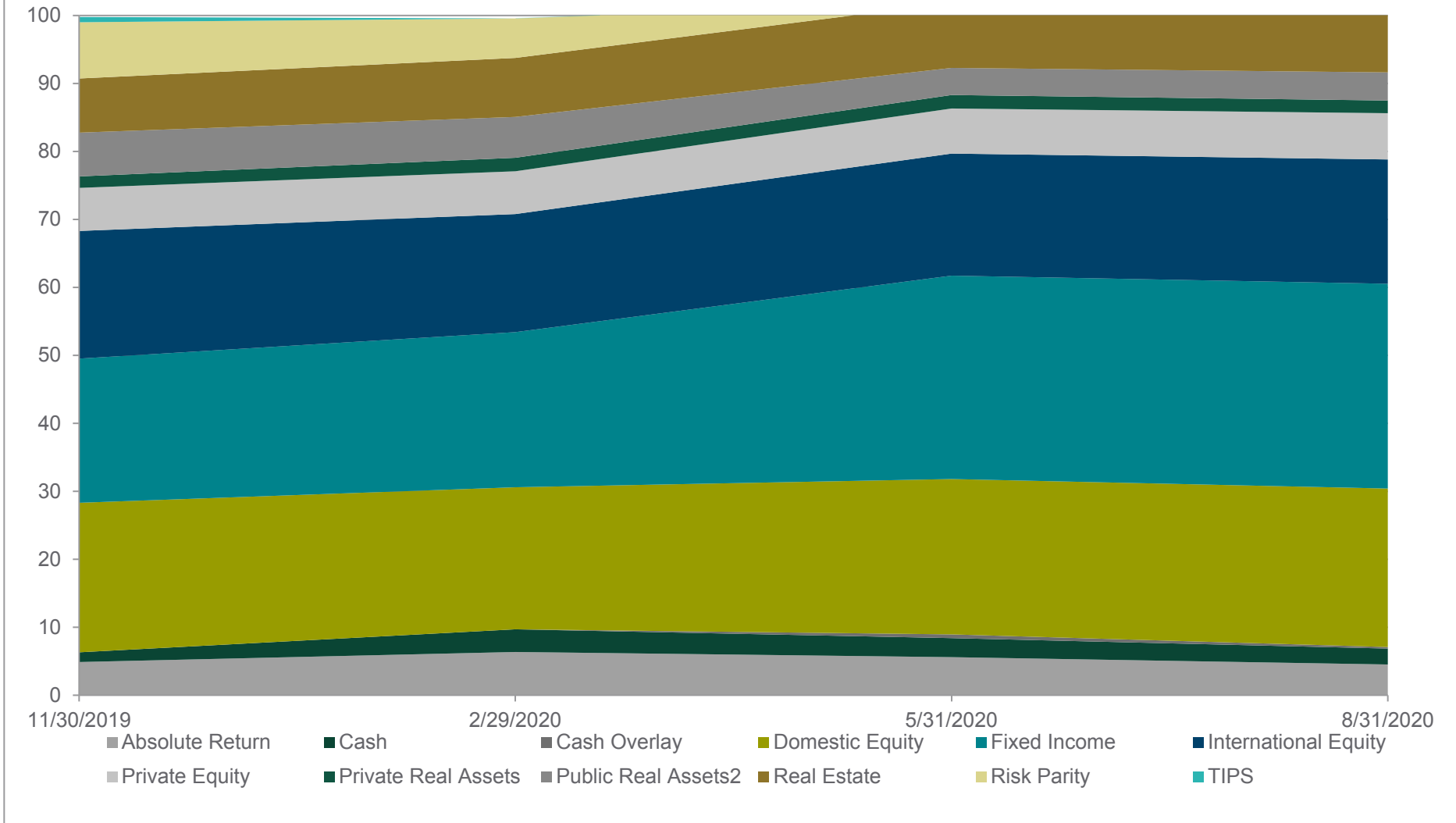


	Min	Actual	Target	Deviation	Max
Domestic Equity	19.0	23.3	21.0	2.3	23.0
International Equity	16.0	18.3	18.0	0.3	20.0
Fixed Income	29.0	30.1	31.0	-0.9	33.0
Private Equity	4.0	6.8	6.0	0.8	8.0
Risk Parity	0.0	0.1	0.0	0.1	0.0
Absolute Return	4.0	4.5	6.0	-1.5	8.0
Liquidity	0.0	2.3	1.0	1.3	2.0
Public Real Assets	2.0	4.1	4.0	0.1	6.0
Real Estate	8.0	8.4	10.0	-1.6	12.0
Private Real Assets	1.0	1.9	3.0	-1.1	5.0

Asset Allocation over Time



Sub-Asset Class Allocation Over Time



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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

AUGUST 2020
Capital Markets Update

Market commentary

U.S. ECONOMICS

- According to the Mortgage Bankers Association's National Delinquency Survey the delinquency rate for mortgage loans on one-to-four-unit residential properties rose to its highest level in nine years. The delinquency rate jumped from 4.4% in the first quarter to 8.2% in the second quarter.
- The University of Michigan's Consumer Sentiment indicator came in at 74.1 in August, up 1.6 points from the July reading. The index reading was +0.4 points above the April to July average. Increases in the index are likely to lead to stronger levels of consumer spending.
- Non-farm payrolls grew by about 1.4 million in August, less than in the previous month when about 1.7 million jobs were added. If on average 1.6 million jobs are added per month it will take just under a year to recover the 22 million jobs lost in March and April.

U.S. EQUITIES

- The S&P 500 Index finished the month of August up +7.2% and has more than recovered from the pandemic-driven sell-off that began in late February. The index saw a -33.9% decline from its February peak to March lows. The index closed the month up +56.5% from the March lows.
- The S&P 500 Index finished the month with a trailing price-to-earnings ratio of 27.3, well above the five-year average price-to-earnings of 20.3. Stock prices today are much higher relative to earnings than they have been on average the last five years.
- Analysts have increased earnings estimates for Q3 2020 by +2.6% since June 30th, indicating analysts are trending in a more optimistic direction around the outlook for corporate earnings in Q3.

U.S. FIXED INCOME

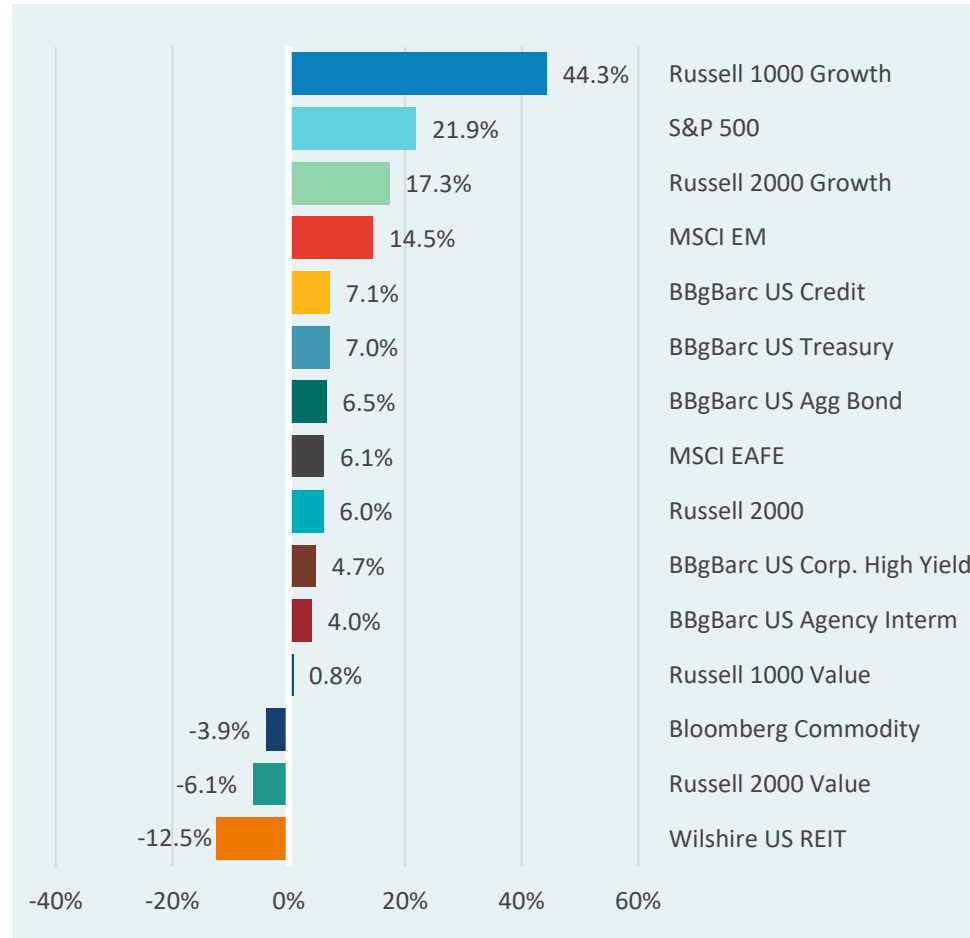
- Federal Reserve Chair Powell unveiled the FOMC's new approach for setting monetary policy. The Fed will now allow inflation to run above its target level of 2% for some time after periods of low prices, raising the probability that rates will remain low for years.
- The U.S. government now holds \$26.6 trillion in debt and has added \$3 trillion during the pandemic. Congress was not able to agree on another stimulus bill before the summer recess. Debate persists around the size and scope of the next support package.
- The Federal Open Market Committee's July meeting minutes indicated a pessimistic outlook. Members of the committee agreed that the pandemic will weigh heavily on economic activity, employment, and inflation in the near-to-medium term, underscoring the need for continued easy policy from the Fed.

INTERNATIONAL MARKETS

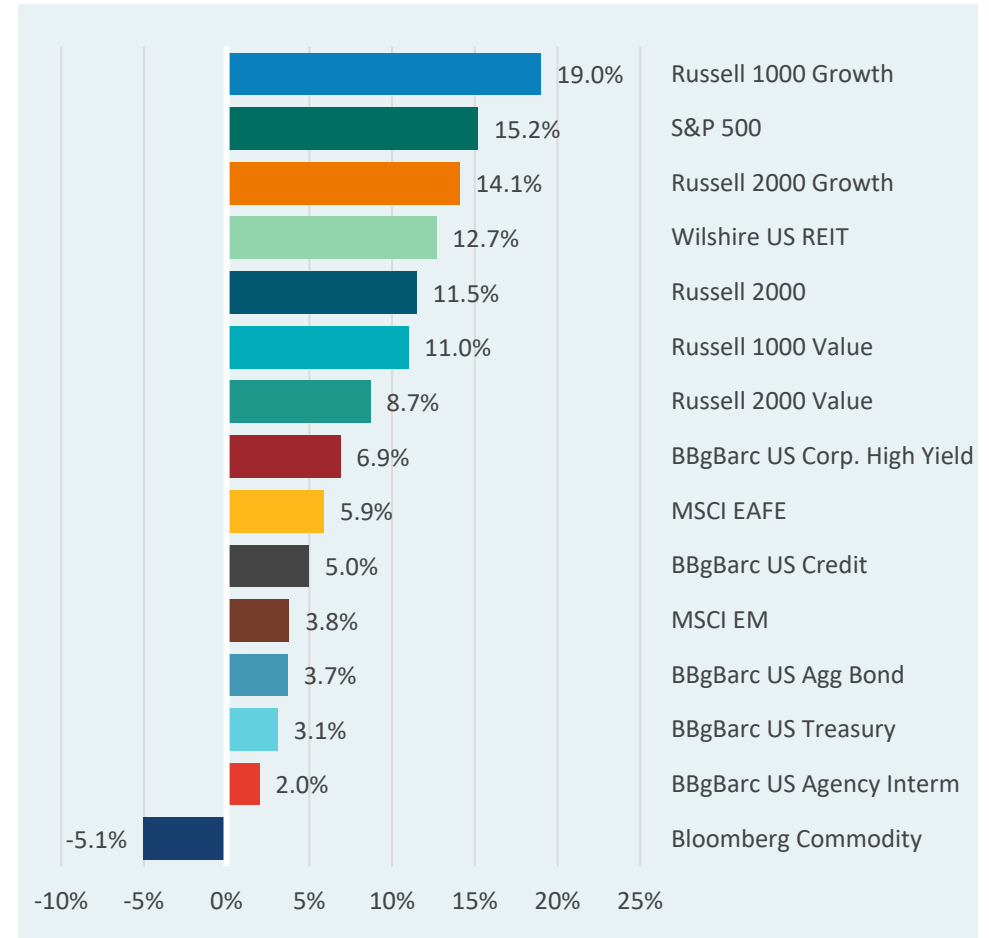
- Chinese and U.S. officials are ironing out standards on Chinese state-owned enterprises being audited by U.S. regulators. The China Securities Regulatory Commission sent a proposal that would allow U.S. regulators to inspect Chinese companies listed on U.S. exchanges, albeit with some redactions.
- The Eurozone Manufacturing PMI fell from 51.8 in July to 51.7 in August and the Services PMI fell from 54.7 to 50.1, both missing expectations. In the U.K., the Manufacturing PMI rose from 53.3 to 55.3 in August, while the Services PMI grew from 56.5 to 60.1.
- Germany earmarked €10 billion (\$11.8 billion) to extend a subsidy program through 2021 that aims to keep millions of people from losing their jobs.

Major asset class returns

ONE YEAR ENDING AUGUST



TEN YEARS ENDING AUGUST



*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 8/31/20

Source: Morningstar, as of 8/31/20

U.S. large cap equities

- The S&P 500 Index gained +7.2% over the month, and closed August 31st just a few points off the all-time-high level of 3508. The losses incurred between the February 19th peak and the March 23rd low have been completely recovered.
- The breadth of the rebound in the stock market remains a concern for some analysts. The rebound in the S&P 500 was focused to the five largest weighted companies in the index; these tech stocks make up roughly 20% of the index. The S&P Equal Weighted Index was still -6.0% below its peak pre-pandemic.
- A steady flow of progress on COVID-19 vaccines and a shift in focus away from U.S.-Chinese tensions has likely bolstered risk assets. Nine of the eleven major sectors contributed positively to returns. The Information Technology sector (+12.0%) pushed the index higher, and the Consumer Discretionary sector (+9.5%) made the second largest contribution to the advance of the overall index.
- The CBOE VIX Index of implied volatility on the S&P 500 Index ticked higher in August. Between July 31st and August 31st the index rose from 24.5 to 26.4.

S&P 500 PRICE INDEX



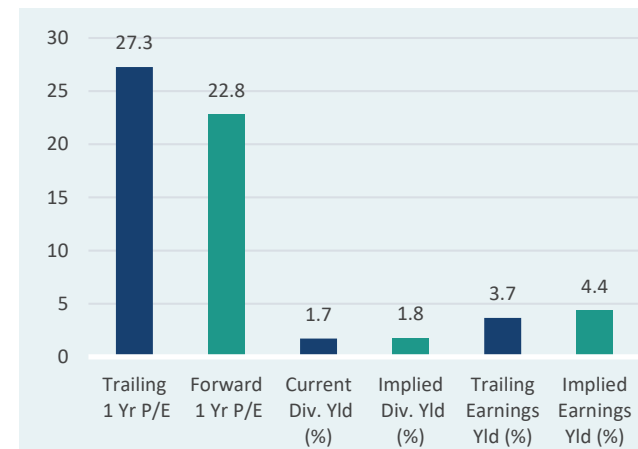
Source: Bloomberg, as of 8/31/20

IMPLIED VOLATILITY (VIX INDEX)



Source: CBOE, as of 8/31/20

S&P 500 VALUATION SNAPSHOT

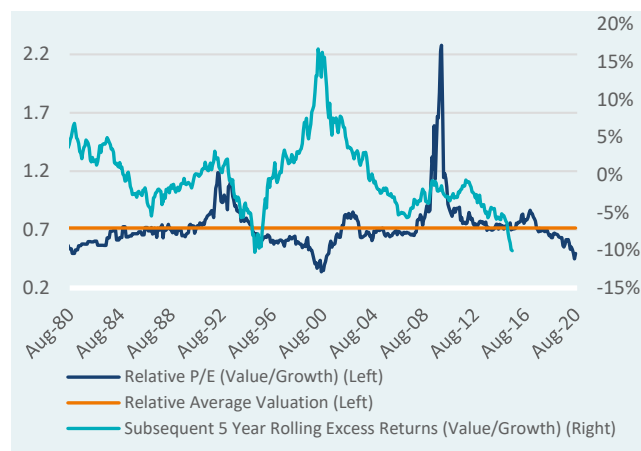


Source: Bloomberg, as of 8/31/20

Domestic equity size and style

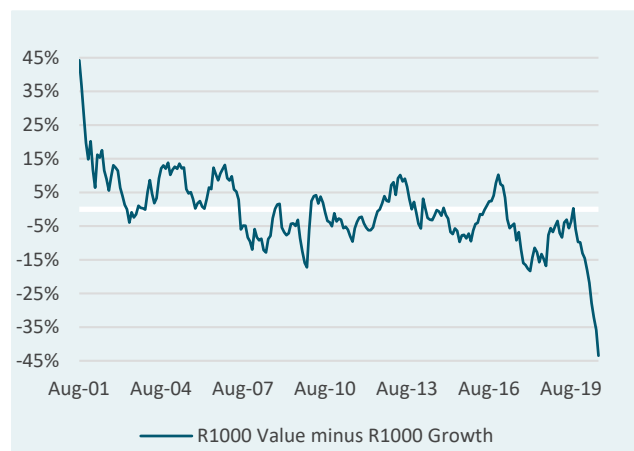
- Growth stocks continued to outperform value stocks. The Russell 3000 Growth Index (+10.1%) handily outpaced the Russell 3000 Value Index (+4.2%). The Information and technology sectors propelled the growth index forward while value-oriented sectors such as utilities declined during the month.
- Economic-data-sensitive cyclical sectors, such as energy, outperformed the less-sensitive defensive sectors again this month. The MSCI USA Cyclical - Defensives Total Return Spread Index returned +7.2%.
- Large-caps (Russell 1000 Index +7.3%) outperformed small-cap equities (Russell 2000 Index +5.6%) during the month. Large-cap stock outperformance over small-cap stocks was perhaps buoyed by several tech company stock splits that may have broadened access for retail investors.
- Momentum factor investing—a strategy of buying stocks that have performed well and selling underperformers—continued to outpace the broader market. The S&P 500 Momentum Index outperformed the S&P 500 Index by +1.0% in August.

VALUE VS. GROWTH RELATIVE VALUATIONS



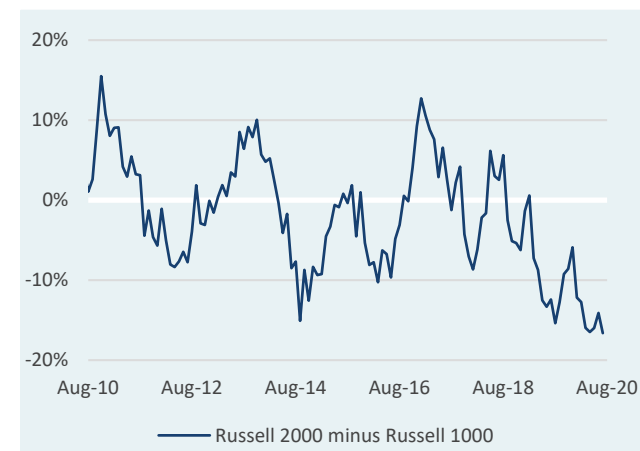
Source: Russell, Bloomberg, as of 8/31/20

VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, Bloomberg, as of 8/31/20

SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE

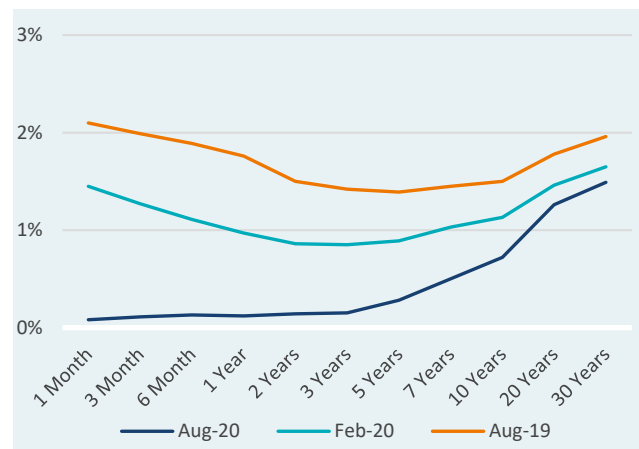


Source: FTSE, Bloomberg, as of 8/31/20

Fixed income

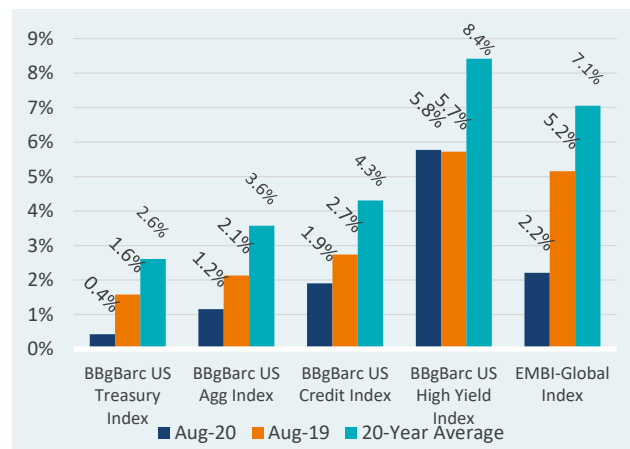
- Within the U.S. fixed income market, Treasury Inflation-Protected Securities (BBgBarc US TIPS +1.1%) were the top-performing assets as the Fed Chair hinted at letting inflation run above its 2% target for some time. High yield fixed income (BBgBarc US Corp. High Yield +1.0%) also posted solid performance.
- The ten-year breakeven inflation rate, increased in August to 1.8%, a post-pandemic high. Nominal yields rose more than enough to offset the rise in breakevens, leading to a small increase in real yields. Ten-year real yields increased from -1.08% to -1.03%.
- The euro (+1.1%), the pound (+2.0%), and a basket of emerging market currencies (Credit Suisse EMCI TR +0.7%) all gained on the dollar. The Bloomberg Dollar Spot Index continued to slide; the index was down -1.5% in August.
- Global credit outperformed most U.S. fixed income indices. Hard-currency denominated emerging market debt (JPM EMBI Global Diversified Index) returned +0.5% and outperformed local-currency denominated emerging market debt (J.P. Morgan GBI-EM -0.3%).

U.S. TREASURY YIELD CURVE



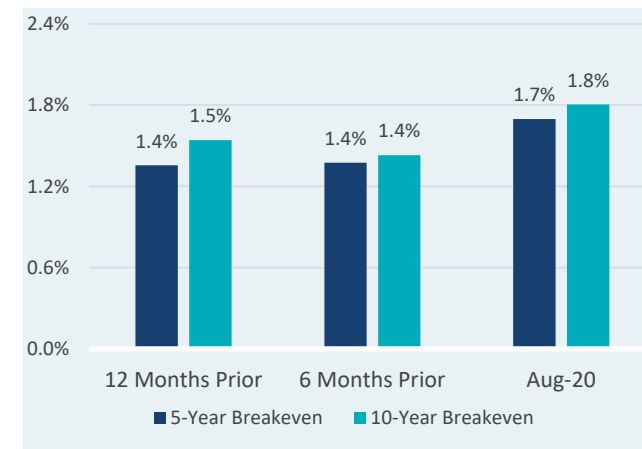
Source: Bloomberg, as of 8/31/20

NOMINAL YIELDS



Source: Morningstar, as of 8/31/20

BREAKEVEN INFLATION RATES

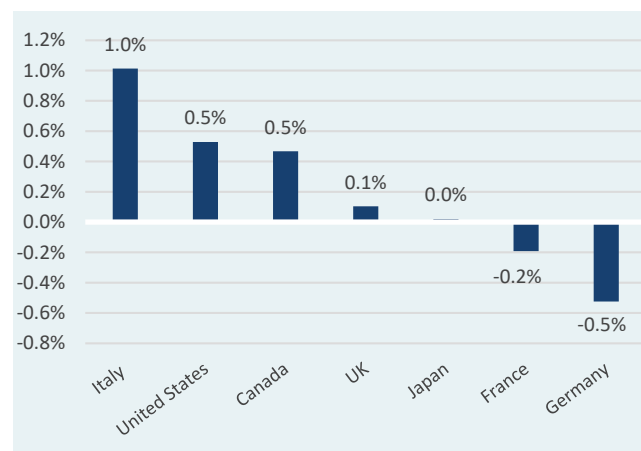


Source: Bloomberg, as of 8/31/20

Global markets

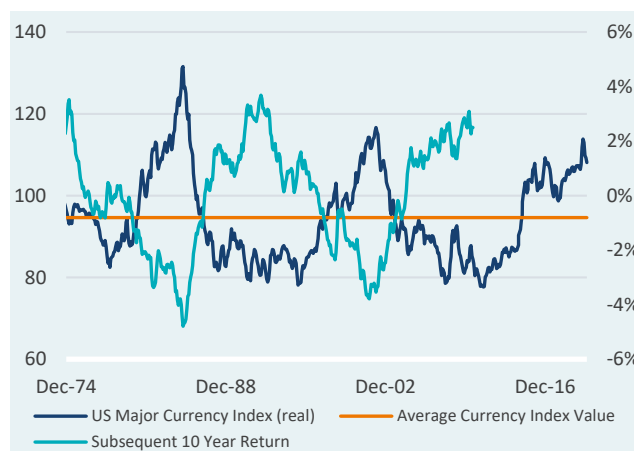
- The pound rallied another +2.0% against the U.S. dollar in August, resulting in currency tailwinds for unhedged U.S. investors in U.K. equities. The MSCI United Kingdom Index returned +3.5% while the index hedged to U.S. dollars, returned +1.5%.
- International developed equities (MSCI EAFE +5.1%) outperformed emerging market equities (MSCI EM +2.2%) as weakness in Latin America (-6.2%) weighed on the index. Within the MSCI EAFE Index, Japanese companies (MSCI Japan +7.6%) outperformed European companies (MSCI Euro +4.5%) in U.S. dollar terms.
- China is poised to purchase a record amount of soybeans from the U.S. in Q4 to attempt to meet the target value implied in the phase one trade deal. China's purchase of agricultural goods until July were just 27% of the target, though talks between U.S. and Chinese officials remain relatively conciliatory.
- Italy, France and Spain decided to not impose new lockdown measures even as the daily cases grew as a result of the reopening of intra-European travel. News that 38 COVID-19 vaccines are in clinical trails on humans, and at least 92 preclinical vaccines are in animal trials has likely been supportive for equities.

GLOBAL SOVEREIGN 10-YEAR YIELDS



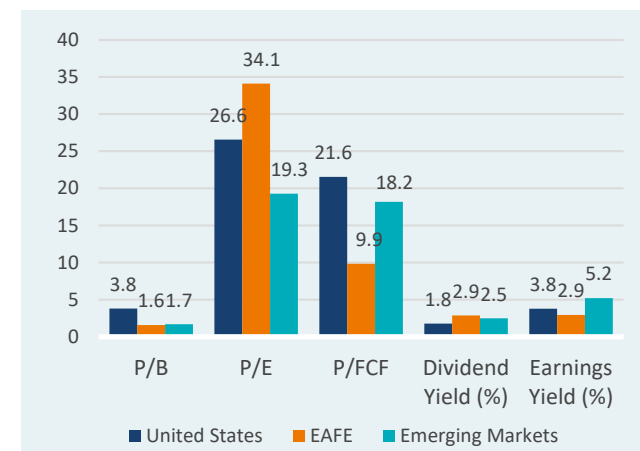
Source: Bloomberg, as of 8/31/20

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 8/31/20

MSCI VALUATION METRICS (3-MONTH AVG)



Source: Bloomberg, as of 8/31/20

Commodities

- The Bloomberg Commodity Index rose for the fourth consecutive month in August, returning +6.8%. All the major sub-indexes within the Bloomberg Commodity Index advanced over the month, but the energy, industrial metals and grains sectors were the top contributors to top-line performance.
- Energy (+13.1%) helped the overall index higher. In August, Natural gas returned +25.2% and oil gained +3.9%. The rally in natural gas was driven in part by fears that tropical storms in the Gulf of Mexico may develop into hurricanes which might threaten U.S. oil refining capacity.

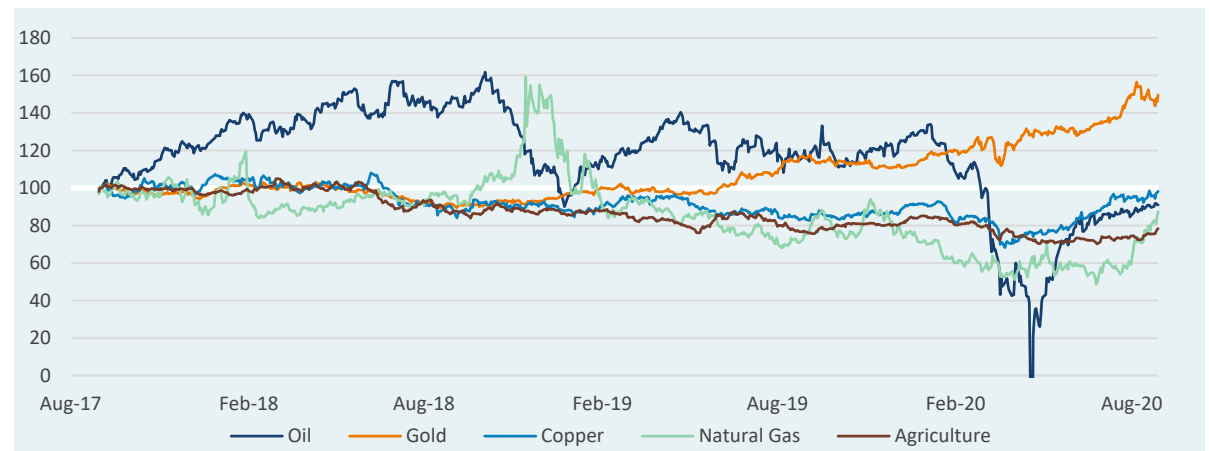
- Industrial Metals (+6.9%) continued to post strong performance in August, and both zinc (+24.1%) and nickel (+21.9%) delivered positive double-digit returns. Copper, the most highly-weighted industrial metal (7%) in the Bloomberg Commodity Index, returned +2.7% in August.
- Grains returned +6.3% in the month of August. Front-month corn and soybeans futures contracts due for delivery in September advanced +9.3% and +6.4% respectively. The expectation for substantial Chinese purchases through year-end, as well as some idiosyncratic supply-side concerns have supported performance.

INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	6.8	15.4	(9.0)	(3.9)	(3.1)	(3.1)	(5.1)
Bloomberg Agriculture	5.5	10.1	(7.2)	3.5	(6.2)	(5.2)	(4.7)
Bloomberg Energy	13.1	18.0	(38.0)	(33.7)	(12.0)	(14.1)	(13.8)
Bloomberg Grains	6.3	5.8	(8.1)	0.1	(6.1)	(7.4)	(5.4)
Bloomberg Industrial Metals	6.9	22.2	4.8	5.0	(1.3)	4.8	(2.5)
Bloomberg Livestock	0.4	(3.0)	(30.4)	(25.1)	(11.7)	(9.8)	(5.9)
Bloomberg Petroleum	3.4	16.5	(46.6)	(38.7)	(10.8)	(12.6)	(10.3)
Bloomberg Precious Metals	3.6	19.3	32.8	31.7	13.5	11.1	3.7
Bloomberg Softs	3.4	20.1	(5.3)	12.5	(7.9)	(3.1)	(6.4)

Source: Morningstar, as of 8/31/20

COMMODITY PERFORMANCE



Source: Bloomberg, as of 8/31/20

Appendix

Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	30.5	20.7	19.0
Large Cap Equity	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	10.4	14.3	15.2
US Bonds	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	6.9	10.5	14.1
Small Cap Growth	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	6.2	8.7	11.5
60/40 Global Portfolio	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	5.8	8.0	11.0
Hedge Funds of Funds	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.4	5.5	7.7	9.7
Emerging Markets Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.0	0.4	7.5	8.7
Cash	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	0.4	6.8	7.2
Real Estate	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	-0.3	4.7	5.9
International Equity	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	-4.6	4.4	3.8
Small Cap Equity	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	-5.5	4.3	3.7
Commodities	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	-9.0	3.3	3.1
Large Cap Value	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	-9.3	1.1	0.6
Small Cap Value	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-17.7	-3.1	-5.1

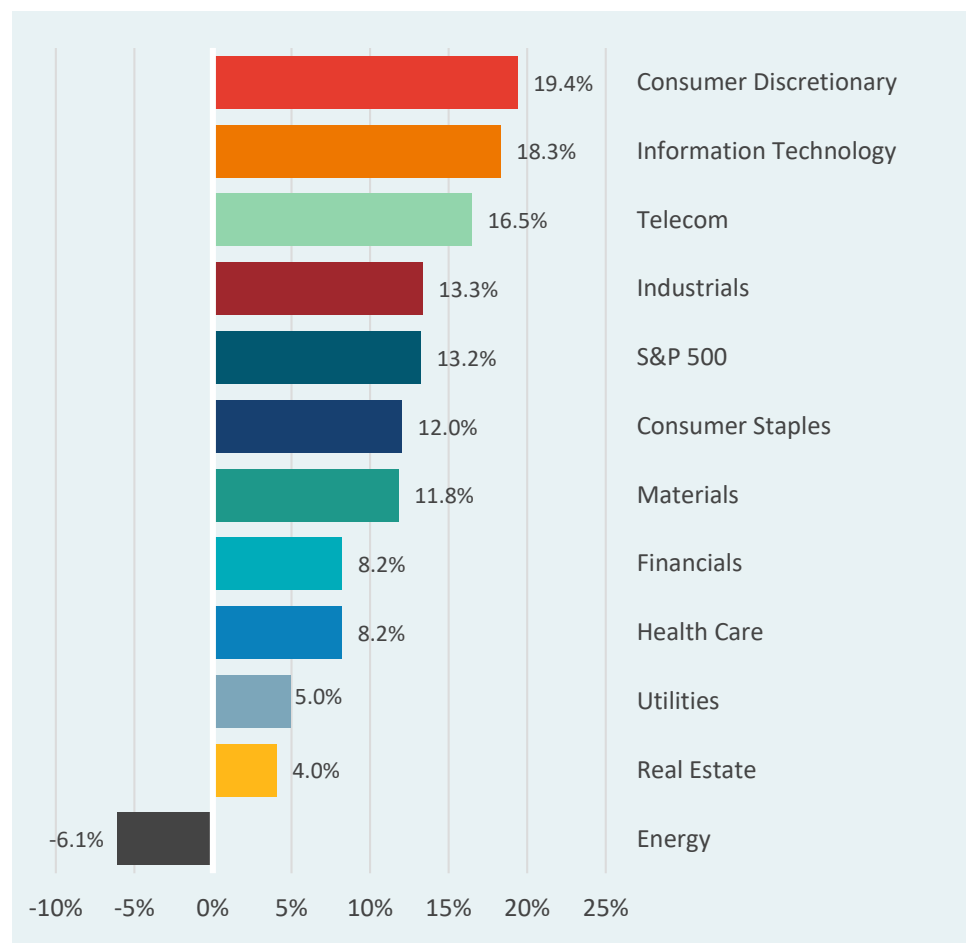
BEST
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WORST

- Large Cap Equity
- Small Cap Growth
- Commodities
- Large Cap Value
- International Equity
- Real Estate
- Small Cap Value
- Emerging Markets Equity
- Hedge Funds of Funds
- 60% MSCI ACWI/40% BBgBarc Global Bond
- Cash

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 6/30/20.

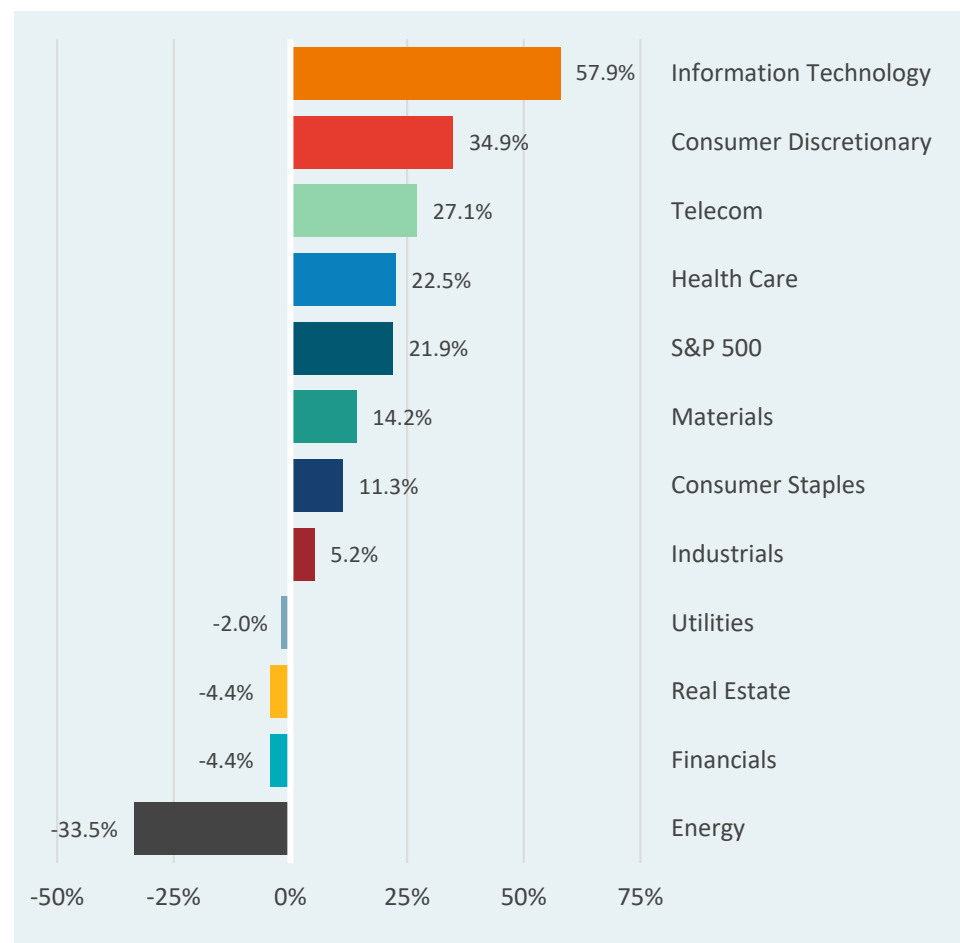
S&P 500 sector returns

QTD



Source: Morningstar, as of 8/31/20

ONE YEAR ENDING AUGUST



Source: Morningstar, as of 8/31/20

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	7.2	13.2	9.7	21.9	14.5	14.5	15.2
S&P 500 Equal Weighted	4.5	9.5	(2.3)	8.4	8.4	10.1	13.4
DJ Industrial Average	7.9	10.6	1.3	10.3	11.6	14.2	13.8
Russell Top 200	8.6	15.0	14.4	27.7	16.7	16.0	15.9
Russell 1000	7.3	13.6	10.4	22.5	14.6	14.3	15.2
Russell 2000	5.6	8.6	(5.5)	6.0	5.0	7.7	11.5
Russell 3000	7.2	13.3	9.4	21.4	13.9	13.9	14.9
Russell Mid Cap	3.5	9.6	(0.4)	8.7	8.8	9.8	13.1
Style Index							
Russell 1000 Growth	10.3	18.8	30.5	44.3	24.2	20.7	19.0
Russell 1000 Value	4.1	8.3	(9.3)	0.8	4.5	7.5	11.0
Russell 2000 Growth	5.9	9.5	6.2	17.3	10.9	10.5	14.1
Russell 2000 Value	5.4	7.6	(17.7)	(6.1)	(1.4)	4.4	8.7

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	6.1	11.7	4.7	16.5	9.0	10.2	9.9
MSCI ACWI ex US	4.3	8.9	(3.1)	8.3	2.6	5.8	5.3
MSCI EAFE	5.1	7.6	(4.6)	6.1	2.3	4.7	5.9
MSCI EM	2.2	11.3	0.4	14.5	2.8	8.7	3.8
MSCI EAFE Small Cap	7.5	11.1	(3.5)	10.7	2.6	6.8	8.6
Style Index							
MSCI EAFE Growth	4.5	9.1	5.3	15.5	8.0	8.5	8.2
MSCI EAFE Value	5.9	6.1	(14.4)	(3.2)	(3.4)	0.8	3.5
Regional Index							
MSCI UK	3.5	5.0	(19.4)	(7.7)	(2.9)	(0.3)	3.4
MSCI Japan	7.6	5.9	(1.6)	10.2	4.3	5.8	6.6
MSCI Euro	4.5	8.4	(5.4)	4.9	0.5	4.1	5.2
MSCI EM Asia	3.2	13.2	9.2	25.3	6.1	11.2	6.7
MSCI EM Latin American	(6.2)	4.1	(32.6)	(23.6)	(9.8)	1.5	(4.3)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	1.1	3.4	9.6	9.0	5.7	4.6	3.7
BBgBarc US Treasury Bills	0.0	0.0	0.7	1.3	1.7	1.2	0.7
BBgBarc US Agg Bond	(0.8)	0.7	6.9	6.5	5.1	4.3	3.7
Duration							
BBgBarc US Treasury 1-3 Yr	(0.0)	0.1	3.1	3.5	2.6	1.9	1.3
BBgBarc US Treasury Long	(4.3)	(0.3)	20.9	13.0	10.9	8.5	7.0
BBgBarc US Treasury	(1.1)	0.0	8.8	7.0	5.2	3.9	3.1
Issuer							
BBgBarc US MBS	0.0	0.2	3.7	4.5	3.6	3.1	3.0
BBgBarc US Corp. High Yield	1.0	5.7	1.7	4.7	4.9	6.5	6.9
BBgBarc US Agency Interim	(0.0)	0.2	3.9	4.0	3.1	2.4	2.0
BBgBarc US Credit	(1.3)	1.8	6.7	7.1	6.2	5.9	5.0

OTHER

Index							
Bloomberg Commodity	6.8	12.9	(9.0)	(3.9)	(3.1)	(3.1)	(5.1)
Wilshire US REIT	0.4	4.8	(13.8)	(12.5)	1.6	5.7	12.7
CS Leveraged Loans	1.5	3.4	(1.5)	0.6	3.1	4.6	5.0
Alerian MLP	0.5	(40.2)	(42.5)	(17.8)	(12.7)	(10.1)	(2.0)
Regional Index							
JPM EMBI Global Div	0.5	4.2	1.4	2.7	4.1	6.3	5.8
JPM GBI-EM Global Div	(0.3)	2.7	(4.4)	1.5	0.7	4.6	1.3
Hedge Funds							
HFRI Composite	2.7	2.0	5.5	3.5	4.1	4.0	4.1
HFRI FOF Composite	2.1	2.8	5.5	3.1	2.8	3.3	3.1
Currency (Spot)							
Euro	1.1	7.5	6.5	8.6	0.2	1.3	(0.6)
Pound	2.0	8.3	1.1	9.9	1.3	(2.7)	(1.4)
Yen	(0.3)	1.6	2.5	0.1	1.3	2.7	(2.3)

Source: Morningstar, as of 8/31/20

Detailed private market returns

Comparison to public market index returns

Private Equity Pooled IRRs	1 Year	3 Year	5 Year	10 Year
Global Private Equity FoFs & Secondary Funds	4.9	10.8	9.3	11.6
Global Private Equity Direct Funds *	3.6	12.2	11.4	13.5
U.S. Private Equity Direct Funds *	4.7	12.7	11.5	14.7
Europe Private Equity Direct Funds *	3.6	14.9	14.8	12.1
Asia Private Equity Direct Funds *	2.3	9.7	9.5	12.0

Public Index Time-weighted Returns				
MSCI World	(10.4)	1.9	3.2	6.6
S&P 500	(7.0)	5.1	6.7	10.5
MSCI Europe	(15.5)	(2.3)	(1.3)	2.5
MSCI AC Asia Pacific	(12.1)	0.1	1.1	3.4

Private Real Estate Pooled IRRs	1 Year	3 Year	5 Year	10 Year
U.S. All Private Real Estate	0.1	6.7	8.6	12.6

Public Index Time-weighted Returns				
FTSE NAREIT Equity REIT	(21.3)	(3.1)	(0.3)	7.4

Private Credit Pooled IRRs	1 Year	3 Year	5 Year	10 Year
U.S. All Private Debt **	(5.9)	4.0	5.5	9.4

Public Index Time-weighted Returns				
S&P / LSTA U.S. Leveraged Loan 100 Index	(5.1)	0.5	1.6	3.2

Private Real Assets Pooled IRRs	1 Year	3 Year	5 Year	10 Year
Global Nature Resources ***	(28.3)	(8.7)	(5.2)	(0.1)
Global Infrastructure	2.4	8.7	10.6	9.3

Public Index Time-weighted Returns				
S&P Global Natural Resources	(30.0)	(6.4)	(2.7)	(2.2)
S&P Global Infrastructure	(21.1)	(3.2)	(0.4)	4.2

Source: Pooled IRRs are from Thompson Reuters C/A and Time-weighted Returns are from Investment Metrics, as of March 31st, 2020. All returns in U.S. dollars.

* Includes Buyout, Growth Equity and Venture Capital.

** Includes Control-Oriented Distressed, Credit Opportunities, Senior Debt and Subordinated Capital.

*** Includes Private Equity Energy, Timber and Upstream Energy & Royalties.

Notices & disclosures

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SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 6.2

TO: Board of Retirement

FROM: Doris Ng, Investment Analyst 

SUBJECT: Report on Fixed Income Manager Annual Reviews

Recommendation

Accept the reports on the annual reviews of SamCERA's two core bond managers and one opportunistic credit manager.

Background

On August 11th, SamCERA staff and consultant held annual review meetings via teleconference for our opportunistic credit manager, Franklin Templeton, and two core bond managers, FIAM and Western Asset Management.

Each meeting lasted approximately 1.5 hours, and consisted of a firm/organizational update, investment process review, performance review and attribution, and current positioning/market outlook.

Discussion

The Franklin Templeton Global Multi-Sector Plus bond strategy, which is a global unconstrained bond mandate managed in an opportunistic fashion using a top-down fundamental framework, was reviewed first. In July 2020, the firm finalized its acquisition of Legg Mason, which is the parent company of Western Asset Management. The firm also noted a personnel change in its research team as well as several internal promotions.

Western Asset Management's Total Return Unconstrained (TRU) strategy, which is an unconstrained core product with broad latitude in duration (-3 to +8 years) and asset allocation, was reviewed next.

Lastly, FIAM's Broad Market Duration product, which focuses on U.S. Treasuries, agencies, investment grade corporate bonds, mortgage-backed and asset-backed securities, was reviewed. The firm noted one of its co-Chief Investment Officer of Bonds was promoted in July 2020 and a replacement will be found in coming months.

There were no significant concerns identified during the portfolio reviews. Attached you will find meeting notes from Verus summarizing the findings from these annual reviews.

Attachments

- A. Franklin Templeton Annual Review Meeting Notes
- B. Western Asset Management Annual Review Meeting Notes
- C. FIAM Core Bond Annual Review Meeting Notes

Date of meeting: 8/11/20

Location: Zoom meeting

Manager Representative(s)

Bill Deakyne (Client Relations),
Richard Herbert (Institutional PM Global Macro)

Verus Representative(s)

Joseph Abdou

Account Assets

\$58 million (6/30/20)

Client Representative(s)

Mike Coultrip (CIO), Doris Ng (Analyst)

Product Description

Franklin Templeton (FT) manages the Global Multisector Plus global bond mandate in an unconstrained fashion using a top-down fundamental framework. FT believes that in the short-term and on a country-by-country basis there are often inefficiencies in global bond and currency markets; however, over the longer term, the market will ultimately price to fundamentals. Thus, FT focuses on fundamental research to identify long-term opportunities and uses short-term market inefficiencies to build positions in such investments. Through its research, FT seeks to identify specific interest rates, currencies and credit exposures that reflect the most attractive investment opportunities, independent of the benchmark. The contribution of the different sources of alpha can vary according to various market environments. However, in aggregate, the risk allocated to each of these areas has typically ranged from 20% to 60% of the risk budget. The Global Multisector Plus approach allows for meaningful amounts of emerging markets and active currency management. The portfolio must maintain at least 50% investment grade exposure.

The format of SamCERA's investment in this strategy was changed from a separate account to a commingled vehicle in June 2014. As a result of SamCERA's fixed income manager structure review in 2017, SamCERA moved FT to the Opportunistic category and redeemed \$70 million from FT to reduce tracking error in the fixed income composite.

Meeting Notes

Organization

As of June 30, 2020, Franklin Templeton managed \$622 billion, of which approximately \$250 billion was in fixed income mandates. The Global Macro team, led by Michael Hasenstab, managed \$23 billion in the Global Multisector Plus style employed in the SamCERA portfolio at 6/30/20.

In 2020, Franklin Templeton finalized its acquisition of Legg Mason and its affiliates. In May 2020, Franklin Templeton announced its acquisition of AdvosorEngine. In November 2019, the company announced the appointment of Jennifer Johnson as President and CEO replacing Gregory Johnson, who will continue his role as the Chairman of the Company's board of directors.

Investment Team

Franklin Templeton's Global Macro team consists of 21 investment professionals, including 5 Ph.D.'s who comprise the senior investment management and research team. The Global Macro team is represented by a diverse set of professionals from 13 different countries who speak 15 different languages. The team utilizes additional inputs from

FT's broader Fixed Income Group consisting of a team of more than 150 global fixed income investment professionals located in offices around the world.

Schlomi Kramer Ph.D. left the team in December and was replaced by Jens Waechter Ph.D. Hyung Shin Ph.D. was promoted to the Deputy Director of Research role previously held by Calvin Ho Ph.D. after he was promoted to the Director of Research.

The Global Macro group is structured into regional/country and sector research teams, quantitative analysts and separate and segregated risk analysts. Christine Zhu, Director of Portfolio Construction, is co-portfolio manager for Global Multisector Plus and plays an important role in separate account management. One of the newer analysts to the team, Vivian Guo left to pursue her MBA and is expected to rejoin the team after completing the program.

Investment Strategy

Franklin Templeton (FT) manages the global bond mandate in an unconstrained fashion using a top-down, fundamental framework. As stated above, FT focuses on fundamental research to identify long-term opportunities, using short-term market inefficiencies to build positions. Macroeconomic conditions in the G-3 economies are analyzed first, primarily with respect to how current and projected growth and inflation dynamics are expected to influence monetary policy. This analysis is then extended out to the rest of the industries countries (G-13) as well as emerging markets, which results in broad targets for duration, currencies and the developed/emerging market mix. Credit, while not currently a meaningful part of the portfolio, is part of the investable universe as well.

The investment process integrates inputs from multiple sources within the Global Macro team and the broader FT fixed income team. Global Macro research teams meet weekly and gather local market intelligence from fixed income colleagues from around the globe as part of their due diligence. Analysts pitch their ideas to the portfolio managers, and lead portfolio manager Michael Hasenstab must sign off on them before they are purchased. The risk team assesses the impact any trade will have on the risk of the portfolio. The portfolio is not managed to be similar to the benchmark, and there is little focus on tracking error. But the team is attentive to other multiple risks, such as political and liquidity risk. Franklin models the VaR of the portfolio as well as conditional VaR, which considers tail risks.

The investment philosophy focuses on getting the country selection decision right as the primary driver of portfolio performance. On average and over longer periods of time, risk allocation should be approximately equal across interest rate, currency and credit alpha sources. However, currency decisions continue to dominate the current portfolio's risk allocation accounting for 519 bps out of the 579 bps of underperformance YTD.

Performance & Positioning

The SamCERA portfolio has underperformed the Bloomberg Barclays Multiverse Index YTD 2020 as of 6/30/20 (-5.7% vs 2.5%) and the year ended 6/30/20 (-7.6% vs 3.8%). In August 2019, they misjudged the Argentinian election. As a result those bonds took a 50% hit. They are still holding these bonds, and YTD they have been up slightly. They learned they can't blindly trust election polls anymore from this experience. What hurt more was Covid and the Fed's shift. They expected the Fed to increase rates and had a short duration which was working in Q4 2019, but really hurt in Q1 2020.

Templeton is also short the Australian Dollar a hedge to the commodity exposure in EM currencies. The underweight position in the USD continued to hurt performance as everyone was seeking out the USD as a safe haven currency.

Date of meeting:
8/11/2020

Location: Zoom
Meeting

Manager Representative(s)

Mark Lindbloom (Portfolio Manager)
Frances Coombes (Client Service)

Verus Representative(s)

Joseph Abdou

Account Assets

\$168 million (6/30/20)

Client Representative(s)

Mike Coultrip (CIO), Doris Ng
(Analyst)

Product Description

Western Asset's Total Return Unconstrained (TRU) strategy seeks to provide bond-like risk and return over the long term within a benchmark agnostic framework. This allows for asset allocation based purely on fundamental, long term value. The investment approach is active with very broad latitude on duration (-3 to +8 years) and on asset allocation across all of the eligible sectors in an unconstrained bond mandate without having to adhere to the benchmark construction. The portfolio must have at least 50% of its holdings in investment-grade securities. This strategy can be appropriate in all market environments, but may be particularly attractive in rising rate environment, as the flexibility offered by this strategy allows for defensive positioning and opportunistic deployment of capital when value opportunities arise. It also allows the portfolio managers to emphasize (or deemphasize) either credit or rates when one or the other appears to offer greater (or lesser) value.

Western Asset uses a team approach to portfolio management with duration, term structure, and sector allocation decisions developed by U.S. Broad Strategy Committee. The TRU bond portfolio managers are members of this committee which meets weekly to formulate the firm's macroeconomic outlook and broad investment strategies in terms of the strength of the economy, direction of interest rates and shape of the yield curve. This top down viewpoint is then applied in constructing the TRU portfolio.

Meeting Notes

Organization

The Firm's total AUM was \$468 billion as of June 30, 2020. Franklin Templeton announced its acquisition of Legg Mason and its affiliates (including Western Asset.) The transaction closed on July 31, 2020. Western Asset is going to be a wholly-owned subsidiary of Franklin Templeton, while maintaining its organizational autonomy and investment independence.

Investment Team

There have been no leadership or investment team changes to the strategy since the last SamCERA review. Western TRU is led by Mark Lindbloom and S. Kenneth Leech, each with 40 years of experience. Mark Lindbloom leads the U.S. Broad Strategy team of five senior portfolio managers, and subsets of the senior PMs have been assigned to specific products to promote better client communication. All in, Western Asset has 131 investment professionals in

seven offices who contribute to the investment outlook and process.

Investment Strategy

The investment philosophy of Western Asset is long-term fundamental value investing, using multiple diversified strategies. Western Asset combines a top-down macroeconomic view with bottom-up fundamental research and relative value analysis. Portfolio management is directed by the Unconstrained Asset Allocation Committee which sets macro and sector investment themes. The Committee meets weekly to establish a U.S. investment outlook over a 3-6 month time horizon, which provides guidance to the portfolio managers.

Western Asset believes it can identify and capitalize on markets and securities that are priced below fundamental fair value. The firm does this through disciplined and rigorous analysis, comparing prices to the fundamental fair values estimated by its macroeconomic and credit research teams around the globe. The TRU portfolio emphasizes the team's highest conviction ideas. The greater the difference between the firm's view of fair value and market pricing, the bigger the potential value opportunity. The greater the degree of confidence in its view of fundamentals, the greater the emphasis of the strategies in the portfolio.

Western Asset seeks diversified sources of returns. Western Asset's objective is to meet or exceed its investors' performance objectives within their tolerances for risk with TRU investing opportunistically in larger, more liquid sectors of the fixed income market. The firm seeks to diversify investments and add value across interest rate duration, yield curve, sector allocation, security selection, country and currency strategies.

Performance & Positioning

For the year ended June 30, 2020, the portfolio returned 3.5% vs. 8.7% for the Bloomberg Barclays U.S. Aggregate Index and 1.5% for 3-month LIBOR. Duration for the portfolio is around 3.3%. They were negative duration too early in late February/early March and focused were focused on long-term investment grade securities in March. That strategy hurt in Q1 but has benefited the portfolio since.

Western Asset was impressed with the fiscal and monetary response to Covid-19. They expect the Fed to keep rates on the short end of the curve low for the foreseeable future, but they likely won't go negative. Western TRU has been adding to their positions in the long end of the curve. They are currently thinking of selling some long duration corporates and rotating into sectors that haven't recovered yet.

Date of meeting: 8/11/2020

Location: Zoom meeting

Manager Representative(s)

Beau Coash (Institutional PM)

Verus Representative(s)

Joseph Abdou

Account Assets

\$254 million (6/30/20)

Client Representative(s)

Mike Coultrip (CIO), Doris Ng (Analyst)

Product Description

Fidelity's Broad Market Duration (BMD) investment strategy seeks to achieve absolute and risk-adjusted returns in excess of the Bloomberg Barclays U.S. Aggregate Index, focusing its investments in U.S. Treasuries, agencies, investment grade corporate bonds, mortgage-backed, and asset-backed securities. The BMD commingled pool can also hold small, opportunistic positions in out-of-benchmark securities, such as inflation-linked bonds. The investable universe includes all U.S. dollar denominated, investment grade debt securities. The BMD investment approach emphasizes issuer and sector valuation and individual security selection. Through the integration of fundamental and quantitative research and trading, the BMD strategy is implemented in a team environment. Risk management technology is utilized to explicitly quantify benchmark exposures on a daily basis, and Fidelity uses the same analytical framework to assess both index and portfolio risk. Tracking error should range between 1.00 - 1.50% per annum over the benchmark, and stringent portfolio construction risk control rules are strictly adhered to.

Meeting Notes

Organization

Since Fidelity's last review, Nancy Prior is stepping down as the President, Fixed Income. Effective July 1, 2020 Jamie Pagliocco will replace Nancy. Jamie was formerly the co-Chief Investment Officer of bonds. Jamie's replacement will be announced in the coming months.

Investment Team

There were no investment team changes specific to BMD in the past year. Ford O'Neil, Jeff Moore, Celso Munoz and Michael Plage are the portfolio managers responsible for the Broad Market Duration strategy. Fidelity has a compensation structure within the team that allows analysts to maintain careers as analysts if they choose not to become portfolio managers. In this way, FIAM analysts can develop insights and differentiated viewpoints on industry credits.

Investment Strategy

Fidelity' Broad Market Duration uses bottom-up issuer and sector selections as its primary sources of alpha. Because Fidelity recognizes that macroeconomic forces have often overwhelmed underlying fundamentals for extended period of time, the BMD team incorporates inputs from both global macro and quantitative analyst teams to guide decisions. Risk management is also a priority and is integrated into the framework in managing this strategy.

Credit analysts cover approximately 2–3 industries across 30–50 names, resulting in a high degree of specialization and focus. Analysts provide their own credit rating for each issuer they cover as well as a numerically ranked (1-strong buy, 6-strong sell) relative value rank for each issuer and sector they cover. This quantitative ranking is incorporated into the portfolio management and risk monitoring systems. Analysts also provide qualitative assessments to portfolio managers. In meetings with the portfolio manager and traders, analysts propose their security recommendations, discuss industry trends, and provide updates on company-specific situations. Outputs from these meetings can include formal ratings changes to both fundamental outlooks and relative value.

While the investment process is rooted in a bottom-up, fundamental approach, FIAM incorporates macroeconomic variables that can influence credit, liquidity and valuation perspectives into their bottom-up process. These global macro perspectives serve a twofold function: (1) they facilitate the risk management process and (2) they represent potential sources of alpha.

Performance & Positioning

As of June 30, 2020, the SamCERA BMD account's trailing 12-month net return outperformed the Bloomberg Barclays U.S. Aggregate benchmark (9.9% versus 8.7% for the Bloomberg Barclays U.S. Aggregate Index). Going back to March liquidity was in the higher grade issues, high yield didn't loosen up until April.


FIAM didn't add risk in January, February, and March. However, when the Fed stepped in, they took large allocations at 4-5x the spreads of January. Since then they have been trimming these positions and taking down the long corporate exposure. FIAM also mentioned in this environment they are hesitant to put on more risk as there are not a lot of opportunities in the market.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 6.3

TO: Board of Retirement

FROM: Doris Ng, Investment Analyst 

SUBJECT: Report on Opportunistic Credit Manager Annual Reviews

Recommendation

Accept the reports on the annual reviews of SamCERA's opportunistic credit and private credit managers.

Background

On September 3rd, we held annual review meetings with our private credit managers, White Oak and Blackrock, as well as our opportunistic credit manager, Brigade Capital Management.

Each meeting lasted approximately 1.5 hours, and consisted of a firm/organizational update, investment process review, performance review and attribution, and current positioning/market outlook.

Discussion

White Oak's Yield Spectrum Fund was reviewed first. The White Oak Yield Spectrum Fund is a private investment fund that invests primarily in senior-secured corporate credit and debt instruments, including term loans, asset-based loans, and equipment financing to small and middle-market companies. The firm noted the retirement of its former Chief Lending Officer in November 2019 and also his replacement, who was hired as Head of Asset Management in May 2020.

Next, Blackrock's Direct Lending Fund VIII and Fund IX were reviewed. Both Blackrock Direct Lending Funds are private investment funds that invest in privately originated, performing senior secured debt in middle-market companies, with a value-oriented approach.

Lastly, Brigade Capital Management's Opportunistic Credit product, which is a fundamental, bottom-up strategy focused on high yield corporate bonds and bank loans with tactical allocations to structured securities, convertibles and other sectors of the bond markets, was reviewed. The firm noted the departures of two partners in 2019 and 2020, and also the recent hire of a new CEO.

There were no significant concerns identified during the portfolio reviews. Attached you will find meeting notes from Verus summarizing the findings from these annual reviews.

Attachments


- A. White Oak Annual Review Meeting Notes (Confidential)
- B. Blackrock Annual Review Meeting Notes (Confidential)
- C. Brigade Annual Review Meeting Notes (Confidential)

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 6.4

TO: Board of Retirement

FROM: Michael Coultrip, Chief Investment Officer 

SUBJECT: Education – Presentation on Cash Flow Analysis

Recommendation

Participate in the presentation on SamCERA's plan maturity - cash flow analysis

Background

During the past few annual Board retreats, SamCERA has discussed plan maturity issues to prepare for when SamCERA is cash flow negative. In April 2019, Jeff McClean covered a number of plan maturity topics, including how a plan becomes mature, funding policy considerations, risks associated with mature plans, and SamCERA portfolio observations, which included a number of potential options to offset negative cash flow risks.

Discussion

Today Jeff McLean from Verus will dive deeper into ways SamCERA can manage its cash flow needs by potentially establishing a liquidity buffer.

Attachment

Verus Presentation on Maturing Pension Plans – Part 2



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



SEPTEMBER 2020

Maturing Defined Benefits Plans – Part 2

SamCERA

Introduction

Review - Why does maturity matter?

- Plan maturity has important implications on the risk profile of the plan
- More mature plans are more severely affected by adverse events
 - Asset drawdowns
 - Underperforming the assumed rate of return
 - Assumption changes (mortality, discount rate, etc.)
- Contributions are based on the active workforce
 - Plans that are predominantly active have a greater ability to correct shortfalls

Review – Where SamCERA stands

- SamCERA Support Ratio (ratio of inactive to active participants) is slightly above median compared to other SACRS plans
- SamCERA Asset Leverage Ratio (ratio of assets to payroll) has grown and is now above median compared to other SACRS plans. Plans with large Asset Leverage Ratios are more likely to have difficulty recovering from an investment loss and receive a greater benefit from an investment gain
- SamCERA Actuarial Liability Leverage Ratio (ratio of actuarial liability to payroll) is moderate compared to other SACRS plans. Plans with large Actuarial Liability Leverage Ratios are more sensitive to assumption changes and demographic changes
- In 2023, employer contributions decrease due to the payoff of the unfunded liability, resulting in an increase in negative cash flow

Recap of last year's maturation presentation

- SamCERA is a mature plan and it has changed over time
- Mature plans are sensitive to adverse returns
- Financial health of the sponsor establishes risk limits; San Mateo County is in good financial health
- Risk is best viewed as volatility and must be understood in normal markets and stressed markets
- Portfolio construction can help mitigate volatility (or benefit from it)
- Policy should guide the institution's approach to these concepts
- How can SamCERA reach full optimal funded status given that its cash outflows will increase?

SamCERA has been forward-looking in addressing plan maturity.

Additional positive cash flow sources exist in the SamCERA portfolio.

SamCERA will continue to add cash flow generating assets.

Objectives for today's presentation

- SamCERA is a mature plan which can achieve fully funded status (100%) in the near term based on projections
 - Mature plans are sensitive to adverse returns
 - SamCERA's cash outflows will increase after 2023 when normal cost drops

Given this scenario:

- How does SamCERA address its future cash flow needs?
- Should SamCERA add a liquid bucket to its Plan and, if so, what should this liquidity buffer look like?
- Cash flow matching options in a low yield environment

SamCERA has been forward-looking in addressing plan maturity longer-term dynamics.

What Next?

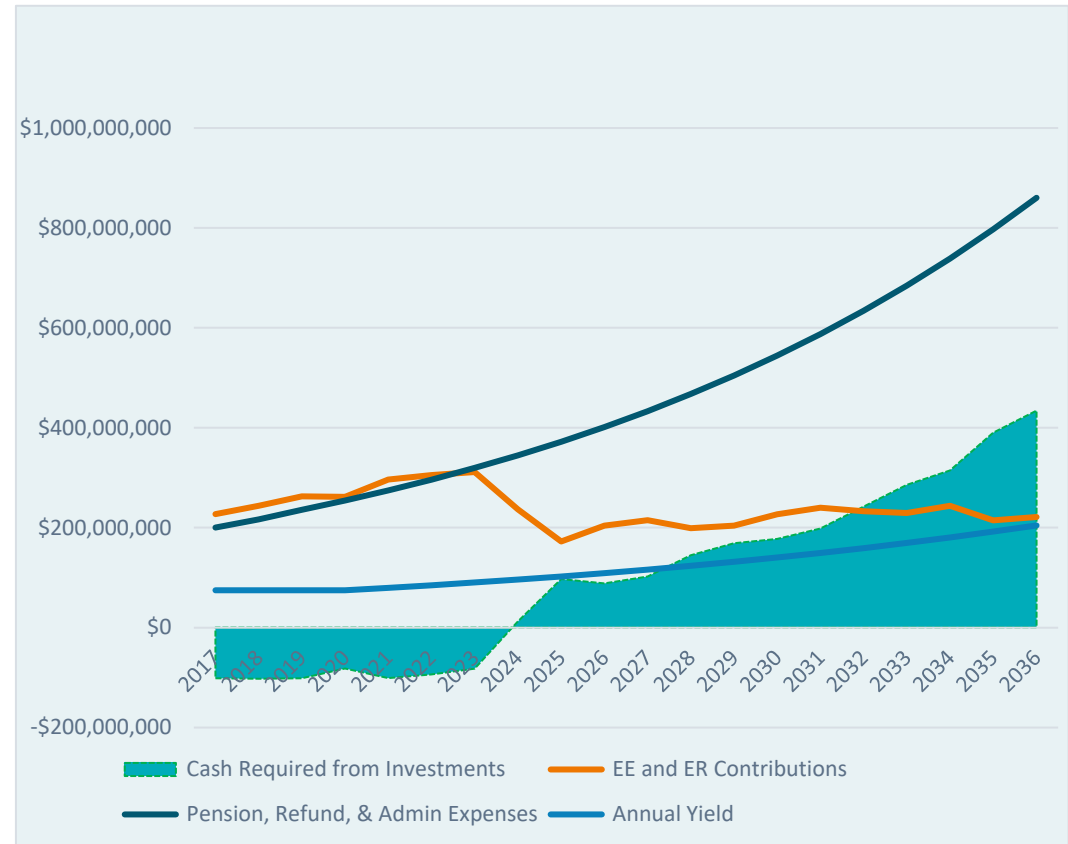
Cash Flows & Portfolio Yield

Portfolio Yield

	Percent of portfolio with available yield	Estimated Yield
Equities	8.2%	1.0%
Fixed Income	14.2%	1.0%
Private Credit	2.3%	5.0%
Real Estate	7.5%	3.2%
Total	32.2%	1.6%

- Portfolio yields are available from separate accounts in Equities and Fixed Income, and can be used to offset negative cash flows
- Real Estate and Private Credit, while a smaller allocation, have higher yields among asset classes

Projected Cash Flows



Matching Strategy

How many years of cash flows should SamCERA put aside?

Year	Next 3-year cash flows	Percentage of MV	Next 5-year cash flows	Percentage of MV	Annual opportunity cost for 3-year cash holding (4%)*	Annual opportunity cost for 5-year cash holding (4%)*
2023	197,524,688	3.5%	444,588,065	7.9%	0.14%	0.32%
2024	287,659,126	4.8%	601,403,976	10.0%	0.19%	0.40%
2025	335,399,331	5.2%	681,627,710	10.7%	0.21%	0.43%
2026	415,917,046	6.1%	791,531,997	11.6%	0.24%	0.46%
2027	491,119,559	6.8%	931,408,294	12.8%	0.27%	0.51%
2028	544,468,621	7.0%	1,072,217,641	13.9%	0.28%	0.56%
2029	617,663,444	7.5%	1,217,719,747	14.8%	0.30%	0.59%
2030	725,989,262	8.3%	1,430,528,038	16.3%	0.33%	0.65%
2031	842,104,797	9.0%	1,666,743,458	17.9%	0.36%	0.71%

If SamCERA sets aside 3 or 5-years of cash flows to match outflow needs, this will reduce assets in the rest of the portfolio which have higher expected returns than short term bonds.

There is a larger opportunity cost of cash flow matching for 5-years.

*4% assumption approximates portfolio's expected return minus the expected return of short-term fixed income (1.9%)

Matching Strategy

Risk of having to replenish cash flow matching account in down markets

One of the things we want to avoid is the need to replenish the cash flow matching account when markets are down since we would need to sell growth assets at an unfavorable time.

Analysis - Let's look at the risk of a negative calendar year return for a 60/40 portfolio since 1976 (using 536 monthly time periods):

Annually – 8 negative years

3-year – 3 negative periods

5-year – zero negative periods

Taking 3-years worth of liquidity out of the portfolio and putting it in a higher yielding short duration portfolio will allow a buffer where the Plan won't have to liquidate growth assets in a bad market environment.*

There are only a few instances of 3-year negative returns over a 40-year time period.

3-year cash flow matching mutes, but does not completely eliminate, the risk of having to replenish the cash pool in down markets.

*3-years worth of cash flow matching is being used to as a possible solution for SamCERA. Other (greater or lesser) time periods can be used as an ultimate cash flow matching strategy for the Plan.

Managing Cash Flows

Assumptions in Cash Flow Analysis

- Verus discussed possible cash matching and asset allocation alternatives with Staff to determine an optimal approach to use in our analysis
- Verus and SamCERA Staff agreed that partnering with an investment manager to assist in the analysis would provide additional insights
 - Liability matching expertise
 - Risk profile/credit quality inputs
 - Scenario analysis/stress testing of cash matched portfolios
- Staff preferred to partner with a provider already in the SamCERA portfolio that has the in-house capabilities to run the analysis requested
 - PIMCO was selected

Objective

Mandate Objective

Meet plan liabilities over the next 3-years, with a high degree of certainty, low risk of loss and a highly liquid investment portfolio

Important Evaluation Metrics

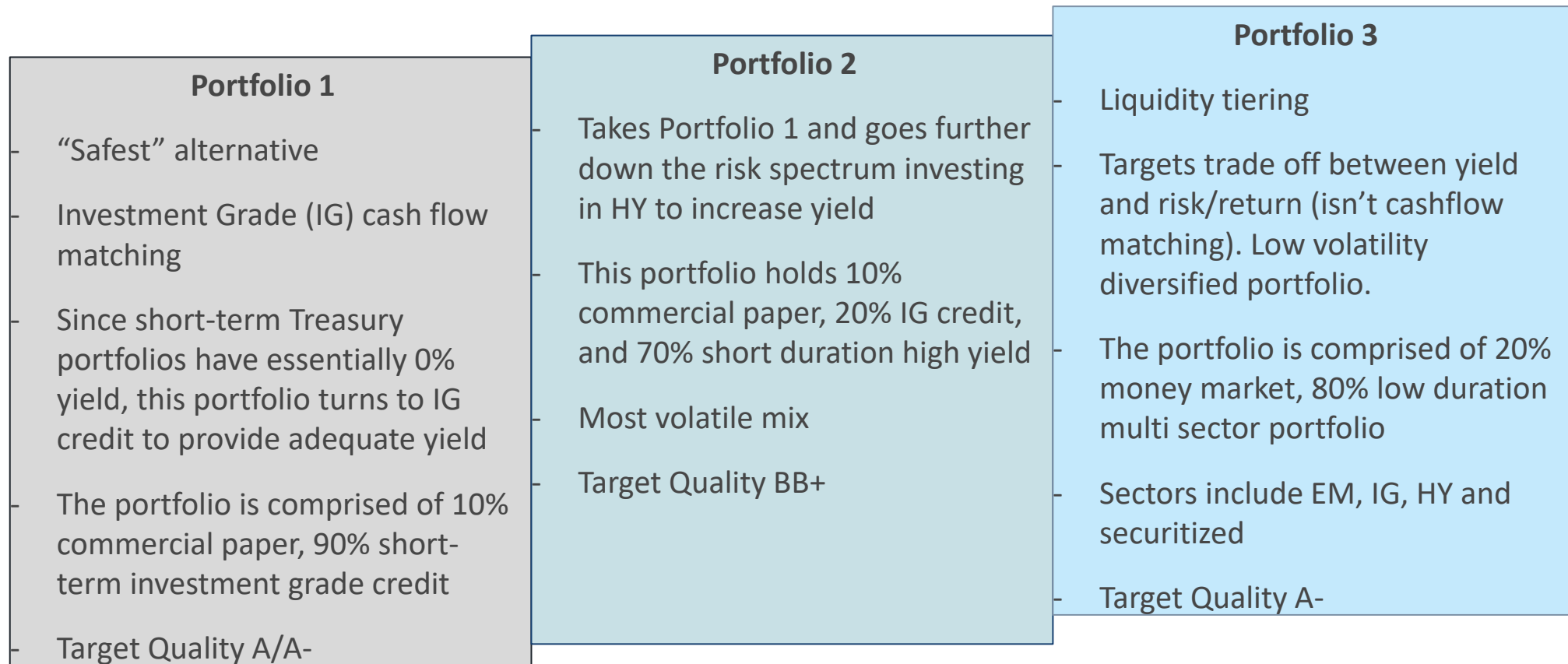
Objective	Evaluation Criteria / Metrics
Minimize volatility and loss potential	Average Rating, mark-to-market volatility, tail-risk, default probabilities
Minimize cash drag	Portfolio carry, median 3-year outcome
Liability matched	Multi-period analysis, pre-funding required
Flexible to meet changing liability profile	Ease of adjusting mandate, transaction costs, implementation speed

As of 31 July 2020. SOURCE: PIMCO, SamCERA.

Past performance is not a guarantee or reliable indicator of future results.

Portfolio Alternatives

Verus worked with PIMCO, one of SamCERA's existing managers, and coordinated with Staff in determining the following 3 possible cash flow matching alternatives.



There are many implementation options for a cash flow matching strategy that can be customized to client needs.

Portfolio Approaches – Pros and Cons

These options reflect different risk profiles, opportunity sets and approaches to liquidity management

1

Investment Grade Cash Flow Matched Portfolio

Pros

- Very low likelihood of default
- Ample issuance and better liquidity
- Meaningful improvement over treasuries

Cons

- Low yields and return potential relative to other credit sectors

2

Hybrid IG and HY Cash Flow Matched Portfolio

Pros

- More attractive returns than IG
- Maintain ability to cash flow match

Cons

- More meaningful default probability, especially in left-tail
- Liquidity as well as issuance can be less dependable

3

Liquidity Tiering

Pros

- On mark-to-market basis, best tradeoff between yield/return and risk and more diversified portfolio
- Ability to be fully invested more quickly
- Easier management of flows

Cons

- Exposed to market volatility due to lack of cash flow matching

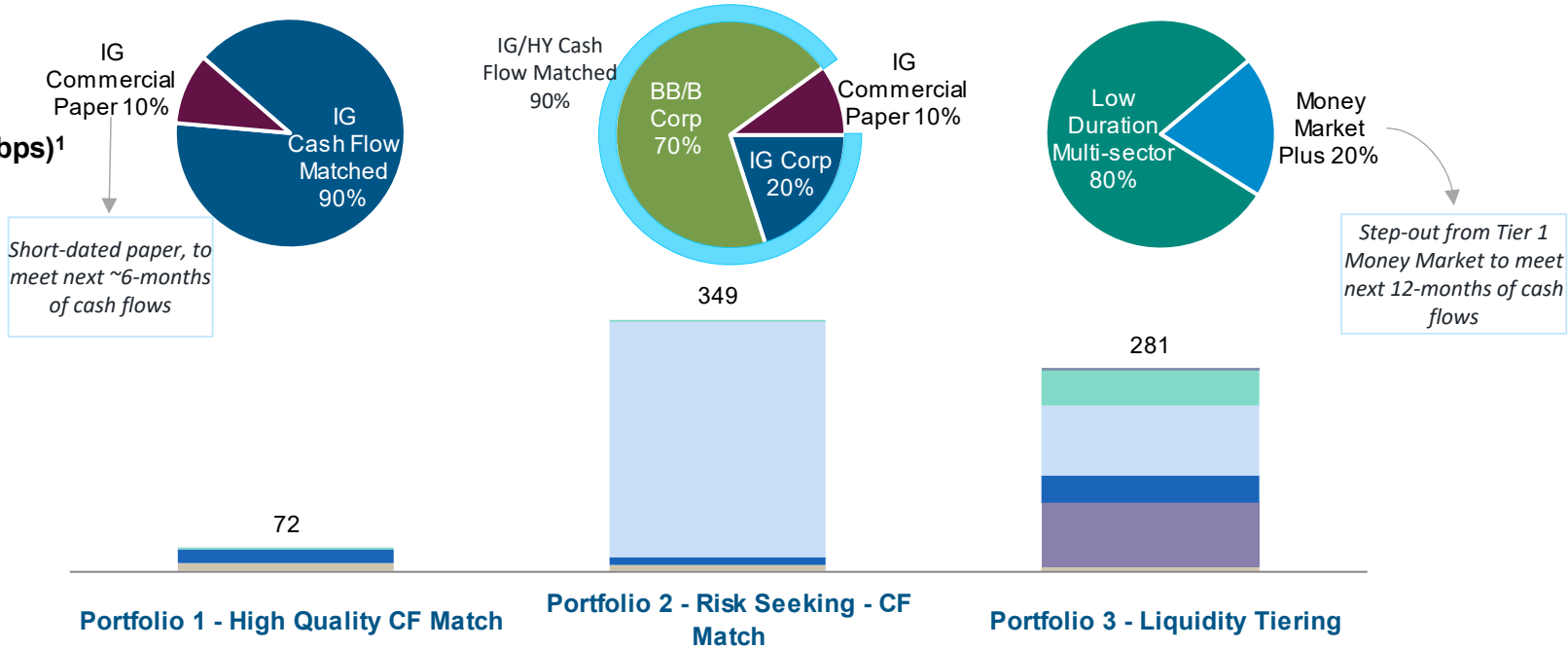
As of 31 July 2020. SOURCE: PIMCO, SamCERA.

PIMCO

Portfolio Characteristics

Contribution to Estimated Volatility (bps)¹

- Other Factors³
- EM Spread
- Corp HY Spread
- Corp IG Spread
- Securitized Spread
- Slope/Convexity
- Equity Industry/Style



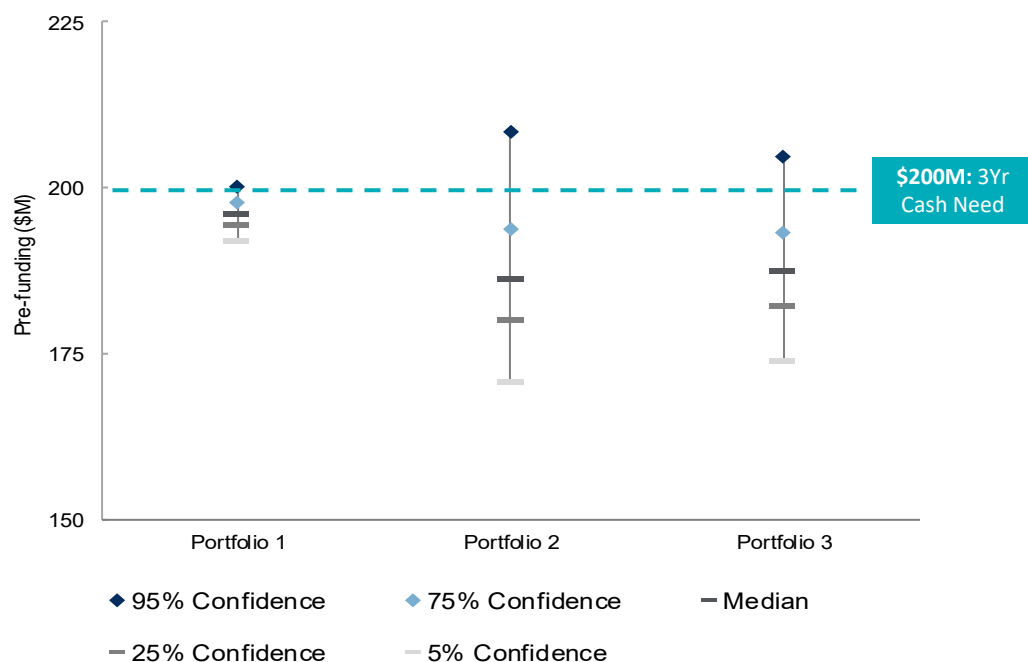
	Portfolio 1 - High Quality CF Match	Portfolio 2 - Risk Seeking - CF Match	Portfolio 3 - Liquidity Tiering
Total Carry	0.76%	3.40%	2.52%
Default Adj. Carry	0.67%	2.33%	2.14%
Mark-to-market Volatility¹	0.7%	3.5%	2.8%
Sharpe Ratio²	0.80	0.64	0.73
Equity Beta vs. S&P500	0.01	0.19	0.14
Duration	1.76	1.70	2.26
Average Quality	A/A-	BB+	A-
Worst 12-Mo. Loss¹	0.9%	7.5%	5.6%

As of 31 July 2020. SOURCE: PIMCO, SamCERA.

Portfolios are constructed to meet obligations over a 3-year horizon with a high degree of certainty. Past performance is not a guarantee or reliable indicator of future results.

Portfolio Funding Requirements

Pre-funding Required to Match 3-Year Liabilities¹ At various confidence levels (mark-to-market)



Prefunding Analysis: Mark-to-market¹

	Portfolio 1	Portfolio 2	Portfolio 3
Pre-Funding 95% Confidence	\$200.3	\$208.3	\$204.6
Pre-funding Benefit 75th Percentile	\$2.2	\$6.3	\$6.7
Pre-funding Benefit 50th Percentile	\$3.7	\$13.7	\$12.3
Pre-funding Benefit 25th Percentile	\$5.3	\$19.9	\$17.6
Downside Risk 99th Percentile	-\$2.2	-\$22.3	-\$17.0

Cash Flow Matching Analysis

	Portfolio 1	Portfolio 2	Portfolio 3
MTM Pre-Funding 95% Confidence	\$200.3	\$208.3	\$204.6
95th Percentile Prob. of Default²	0.50%	5.00%	-
95th Percentile Def. Adjust Carry	0.45%	0.23%	-
Pre-Funding 95% Confidence	\$199.1	\$199.5	\$204.6
Cash Flow Match Benefit	\$1.2	\$8.8	-

As of 31 July 2020. SOURCE: PIMCO, SamCERA.

¹ 3-Year Liability analysis utilizes PIMCO's bootstrap methodology to string together 3 12-month periods which are interdependent from one another and are based on the risk factor profiles of the indices and accounts included in the analysis.

² To calculate the 95th percentile probability of default, PIMCO utilizes the historical distribution of default rates over 3-year periods since 1970 from Moody's. They assume Portfolio 1 and 2 each have 200 CUSIPS with uncorrelated default risk.

Portfolio Alternatives

- We see Option 1 as the safest portfolio, but it will also require the most capital at the 50th percentile.
- Portfolio 1 and Portfolio 2 are cash flow match so yields tightening/widening wont matter. The only risk to consider is default risk.
- The Plan can invest at either 95% confidence of paying the cash flows. Any excess cash flows can be carried forward.
- Portfolio 2 has the largest variance of returns due to its allocation to short term high yield.
- Portfolio 3 has a smaller variance of returns (from portfolio 2) due to the diversification benefits of having a tiered, multi-sector approach. However, it is not explicitly cash matched.
- At 50th percentile, expected portfolio pre-fundings are \$196.3M, \$186.3M, and \$187,7 for the portfolios, respectively. Indicating a gain in the latter two portfolios of between 4-5% relative to portfolio 1.

Scenario Analysis

Scenarios Considered

Current 7/31 Yield Levels

- Treasury yields near all-time lows
- Fed Funds rate at 0%
- Spreads near or modestly below long-term medians, but not at tightest levels

	Portfolio 1	Portfolio 2	Portfolio 3
7/31 - Current Total Carry	0.76%	3.40%	2.52%
Default Adj. Carry	0.67%	2.33%	2.14%

Pre-COVID 12/31/19 Yield Levels

- Treasury yields above current levels (10-Year Carry 188 vs. 61 bps today)
- Fed Funds rate at 1.5%
- Spreads at tighter levels than today (IG at 43 vs. 59, HY at 338 vs. 487)

	Portfolio 1	Portfolio 2	Portfolio 3
Pre-COVID Total Carry	2.01%	3.56%	3.07%
Default Adj. Carry	1.91%	2.50%	2.69%

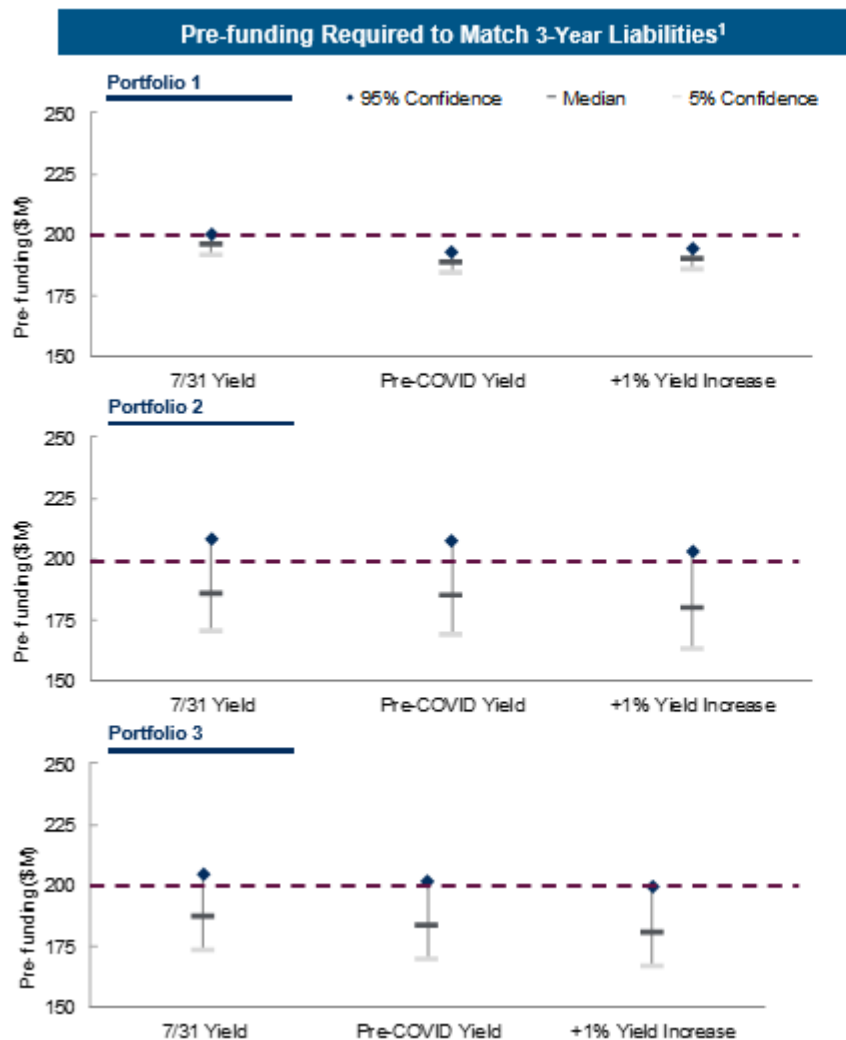
Increased Treasury Yields 7/31 Yield Levels + 100 bps

- Implies treasury yields move upwards by 100 bps from current levels in parallel fashion
- Keeps spreads at today's valuations which are near long-term medians

	Portfolio 1	Portfolio 2	Portfolio 3
Today + 1% Total Carry	1.76%	4.40%	3.52%
Default Adj. Carry	1.67%	3.33%	3.14%

As of 31 July 2020. SOURCE: PIMCO

Scenario Funding Requirements



7/31 Yield Comparison

	Portfolio 1	Portfolio 2	Portfolio 3
Pre-Funding 95% Confidence	\$200.3	\$208.3	\$204.6
Pre-funding Benefit 50th Percentile	\$3.7	\$13.7	\$12.3
Downside Risk 99th Percentile	-\$2.2	-\$22.3	-\$17.0

Pre-COVID Yield Comparison

	Portfolio 1	Portfolio 2	Portfolio 3
Pre-Funding 95% Confidence	\$193.1	\$207.5	\$201.7
Pre-funding Benefit 50th Percentile	\$11.1	\$14.7	\$15.6
Downside Risk 99th Percentile	\$4.8	-\$21.6	-\$14.4

Current Yield + 1% Comparison

	Portfolio 1	Portfolio 2	Portfolio 3
Pre-Funding 95% Confidence	\$194.6	\$203.2	\$199.3
Pre-funding Benefit 50th Percentile	\$9.6	\$19.8	\$18.5
Downside Risk 99th Percentile	\$3.4	-\$17.8	-\$12.1

As of 31 July 2020. SOURCE: PIMCO, SamCERA, Moody's. Hypothetical example for illustrative purposes only

¹ 3-Year Liability analysis utilizes PIMCO's bootstrap to string together 3 12-month periods which are interdependent and are based on the risk factor profiles of the indices and accounts included in the analysis.

Scenario Analysis Summary

- Pre-funding at the 50th percentile level is less in portfolio 2 and portfolio 3, but the difference between the two is negligible
- The pre-COVID yields are slightly less than current yields in portfolio's 2 and 3, but the impact is magnified for portfolio 1 which invests in IG credit
- There is little difference between current yields/pre-Covid yields or Current Yields +1% (\$6-7 million at most)

Summary of median pre-funding needed by portfolios

	Portfolio 1	Portfolio 2	Portfolio 3
Current Yields	\$196.3	\$186.3	\$187.7
Pre-Covid	\$188.9	\$185.3	\$184.4
Current Yields +1%	\$190.4	\$180.2	\$181.5

Asset Allocation

Possible Allocations

What allocations are needed to maintain the current return assumption?

	Approved Allocation	2025	2030
US Large	11.0	11.0	11.0
Low Vol	8.0	8.0	8.0
US Small	2.0	2.0	2.0
International Developed	7.0	7.0	7.0
Intl Developed Hedged	7.0	7.0	7.0
Emerging Markets	4.0	4.0	4.0
High Yield Corp. Credit	7.0	7.0	7.0
Private Equity	6.0	6.0	6.0
Private Credit	3.0	3.0	3.0
Total Growth	55.0	55.0	55.0
Core Fixed Income	21.0	17.0	6.0
Absolute Return	6.0	6.0	6.0
Total Diversifying	27.0	23.0	12.0
Commodities*	3.0	3.0	3.0
Core Real Estate	10.0	10.0	10.0
Infrastructure*	3.0	3.0	3.0
TIPS	1.0	1.0	1.0
Total Real Return	17.0	17.0	17.0
Liquidity	1.0	5.0	16.0
Cash Flow Matching	1.0	5.0	16.0
Total Allocation	100	100	100

	Approved Allocation	2025	2030
Mean Variance Analysis			
Forecast 10 Year Return	5.8	5.7	5.7
Standard Deviation	9.2	9.2	9.2
Return/Std. Deviation	0.6	0.6	0.6
1st percentile ret. 1 year	-13.4	-13.5	-13.6
Sharpe Ratio	0.46	0.46	0.45

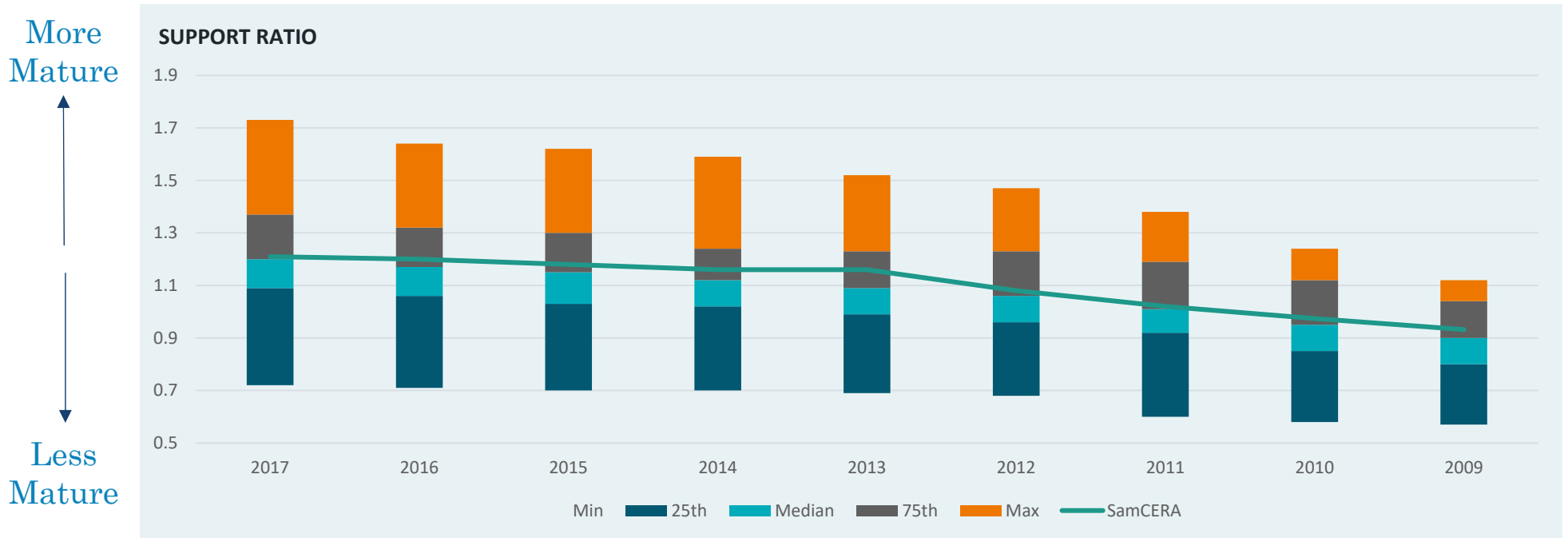
Conclusions from Analysis

- Given the scenario analysis and options presented, SamCERA is looking at approximately \$200 million to match upcoming 3-year cash flows
- Given the current low yield environment it is likely that the assets that will have to be set aside will be less when it comes to implementation.
- Until we move forward with the program, we should explore ways to build greater yield in the portfolio through implementation. In the meantime, Verus will work with staff and the Board on potential ways to mitigate the impact of large negative cash flows. This can be done through asset allocation, investment vehicles, and investing in higher yielding products such as private credit or infrastructure.
- In 2021-2022, our recommendation would be to implement a cash matching program following a review of the 2022 yield environment and asset allocation
- There are many ways to implement cash flow matching. Giving the manager leeway on where to invest can result in better outcomes (i.e., lower prefunding amounts and higher returns), albeit with greater credit risk and volatility.

Appendix

How do we measure maturity?

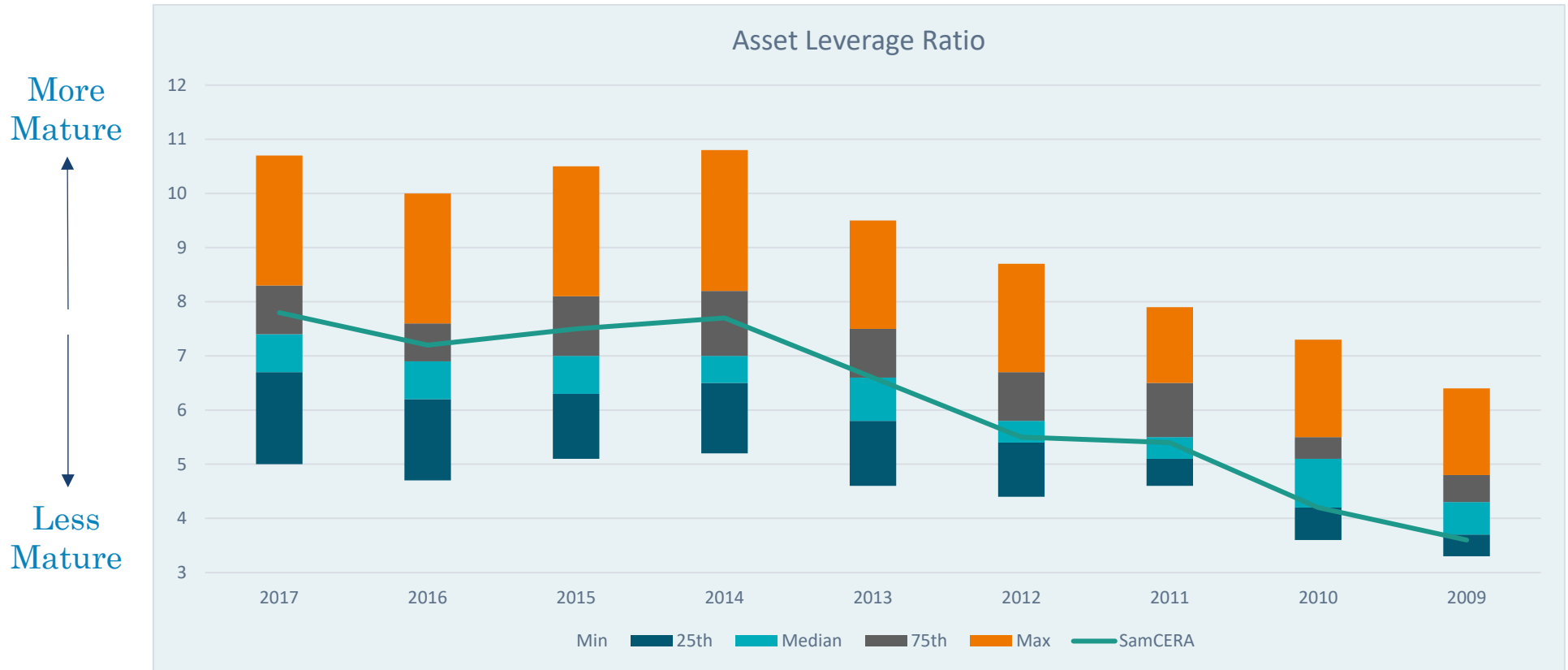
Ratio of inactive participants to active participants



SamCERA Support Ratio is slightly above median compared to other SACRS plans

How do we measure maturity?

Ratio of assets to payroll



SamCERA Asset Leverage Ratio has grown and is now above median compared to other SACRS plans

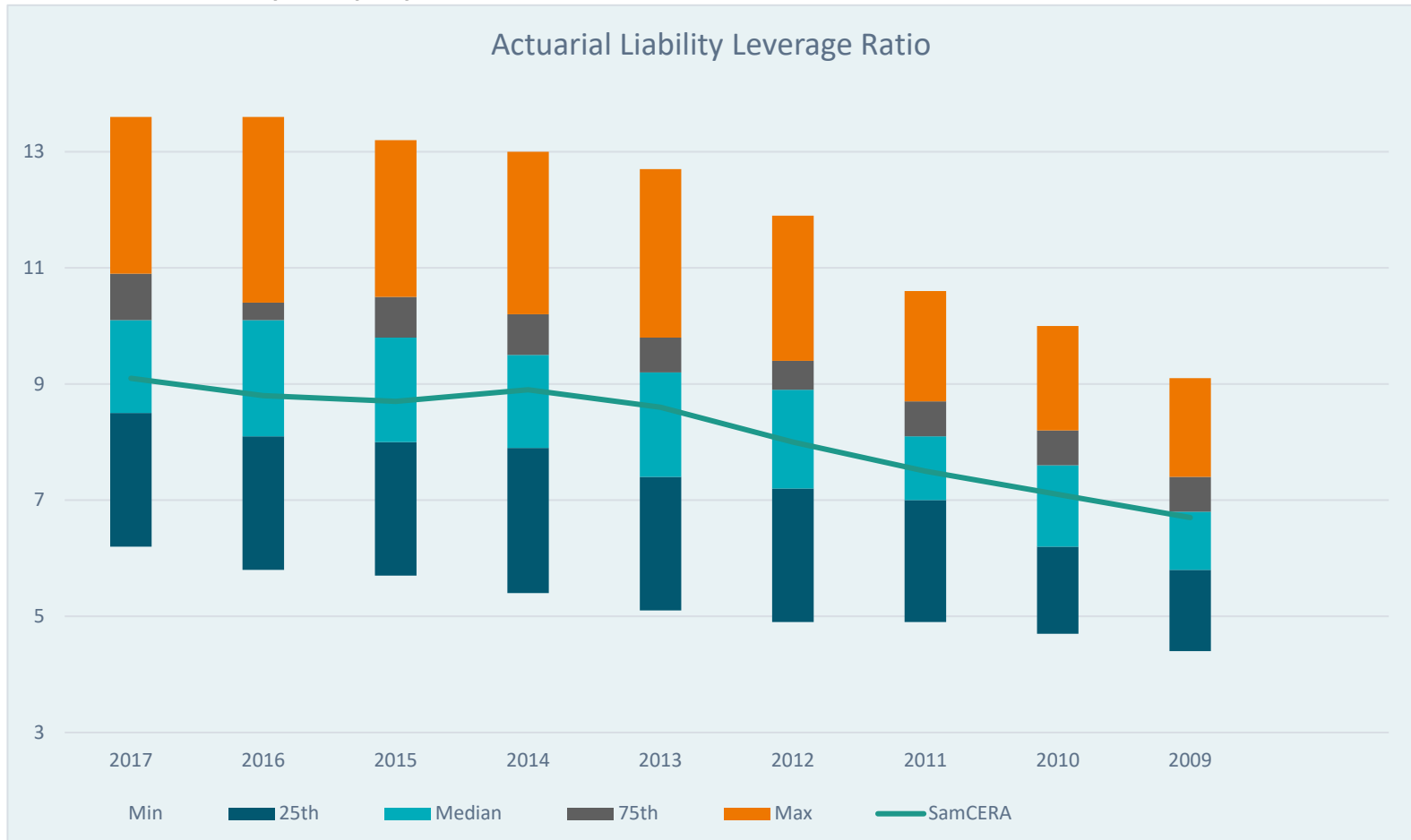
How do we measure maturity?

Ratio of actuarial liability to payroll

More Mature



Less Mature



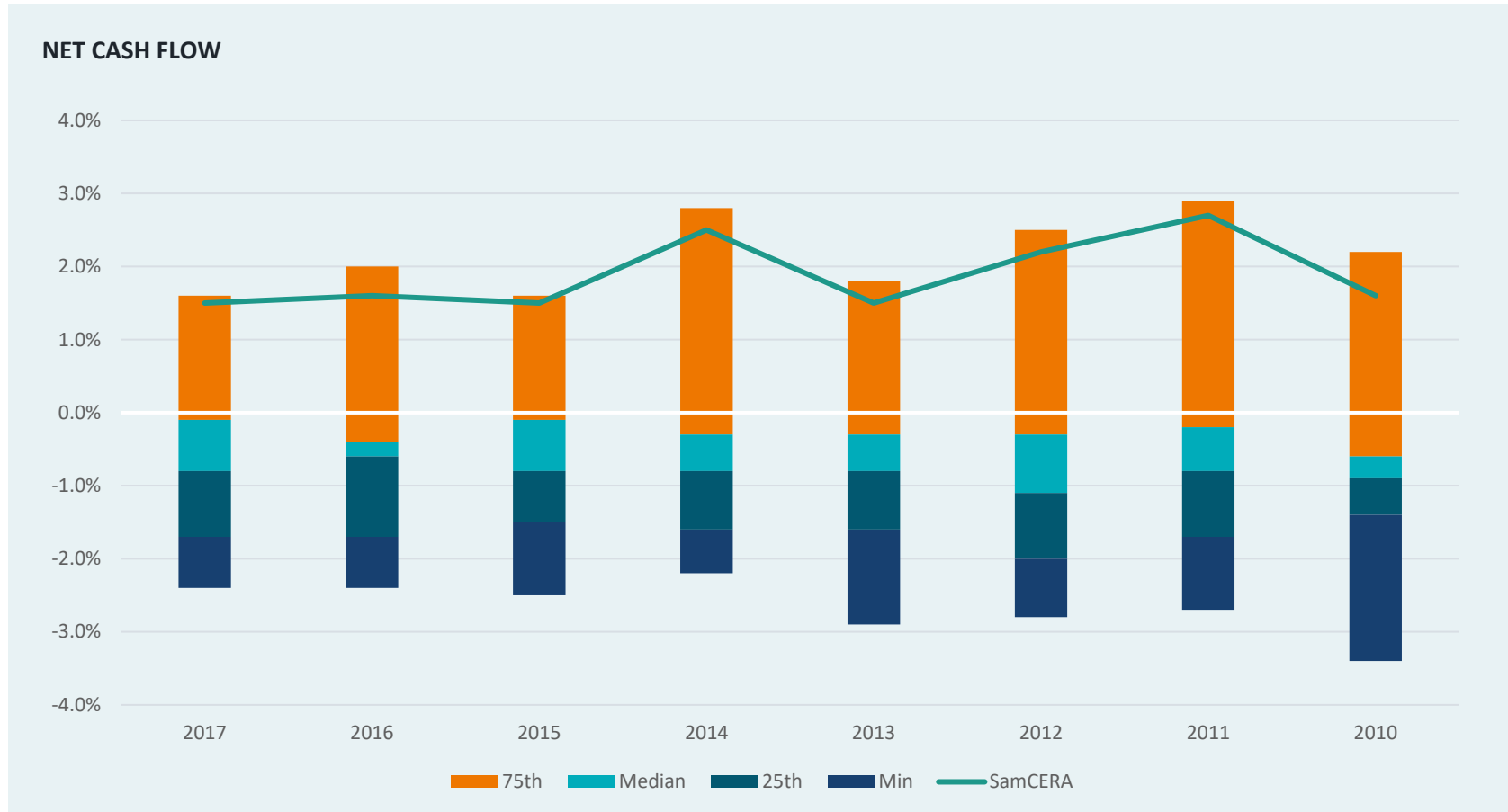
SamCERA Actuarial Liability Leverage Ratio is moderate compared to other SACRS plans

How do we measure maturity?

Net cash flow as a percentage of assets

Less
Mature

More
Mature



SamCERA's Net Cash Flow is high compared to other SACRS plans, but turning negative next year

Methodology

CORE INPUTS

- We use a fundamental building block approach based on several inputs, including historical data and academic research to create asset class return forecasts.
- For most asset classes, we use the long-term historical volatility after adjusting for autocorrelation.
- Correlations between asset classes are calculated based on the last 10 years. For illiquid assets, such as private equity and private real estate, we use BarraOne correlation estimates.

Asset	Return Methodology	Volatility Methodology*
Inflation	25% weight to the University of Michigan Survey 5-10 year ahead inflation expectation and the Survey of Professional Forecasters (Fed Survey), and the remaining 50% to the market's expectation for inflation as observed through the 10-year TIPS breakeven rate	-
Cash	Real yield estimate + inflation forecast	Long-term volatility
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast	Long-term volatility
International Bonds	Current yield	Long-term volatility
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate	Long-term volatility
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate	Long-term volatility
Private Credit	Bank loan forecast + 1.75% private credit premium**	Long-term volatility
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change	Long-term volatility
Intl Developed Equity	Current yield + real earnings growth (historical average) + inflation on earnings (intl. inflation forecast) + expected P/E change	Long-term volatility
Private Equity	US large cap domestic equity forecast * 1.85 beta adjustment	1.2 * Long-term volatility of U.S. small cap
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)	Long-term volatility
Hedge Funds	Return coming from traditional betas + 15-year historical idiosyncratic return	Long-term volatility
Core Real Estate	Cap rate + real income growth – capex + inflation forecast	65% of REIT volatility
REITs	Core real estate	Long-term volatility
Value-Add Real Estate	Core real estate + 2%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Opportunistic Real Estate	Core real estate + 4%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)	Long-term volatility
Risk Parity	Expected Sharpe Ratio * target volatility + cash rate	Target volatility

*Long-term historical volatility data is adjusted for autocorrelation (see Appendix)

**The private credit premium is generated by illiquidity, issuer size, and lack of credit rating

10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
Equities								
U.S. Large	S&P 500	5.5%	6.6%	15.4%	0.23	0.31	1.01	1.02
U.S. Small	Russell 2000	5.7%	7.7%	21.1%	0.18	0.28	0.62	0.67
International Developed	MSCI EAFE	7.0%	8.4%	17.5%	0.29	0.37	0.30	0.37
International Small	MSCI EAFE Small Cap	7.2%	9.3%	21.8%	0.24	0.34	0.46	0.52
Emerging Markets	MSCI EM	7.6%	10.4%	25.6%	0.22	0.33	0.17	0.25
Global Equity	MSCI ACWI	6.4%	7.7%	16.8%	0.27	0.34	0.59	0.63
Private Equity*	Cambridge Private Equity	8.5%	11.3%	25.3%	0.26	0.37	-	-
Fixed Income								
Cash	30 Day T-Bills	1.9%	1.9%	1.2%	-	-	-	-
U.S. TIPS	BBgBarc U.S. TIPS 5-10	2.1%	2.2%	5.4%	0.04	0.06	0.65	0.66
U.S. Treasury	BBgBarc Treasury 7-10 Year	1.7%	1.9%	6.7%	-0.03	0.00	0.68	0.69
Global Sovereign ex U.S.	BBgBarc Global Treasury ex U.S.	0.1%	0.6%	9.7%	-0.19	-0.13	0.10	0.14
Global Aggregate	BBgBarc Global Aggregate	1.2%	1.4%	6.2%	-0.11	-0.08	0.39	0.37
Core Fixed Income	BBgBarc U.S. Aggregate Bond	2.2%	2.4%	6.3%	0.05	0.08	1.08	1.09
Core Plus Fixed Income	BBgBarc U.S. Corporate IG	2.7%	3.0%	8.3%	0.10	0.14	1.21	1.22
Short-Term Gov't/Credit	BBgBarc U.S. Gov't/Credit 1-3 Year	1.7%	1.8%	3.6%	-0.06	-0.03	1.16	1.17
Short-Term Credit	BBgBarc Credit 1-3 Year	1.9%	2.0%	3.6%	0.01	0.03	1.76	1.78
Long-Term Credit	BBgBarc Long U.S. Corporate	3.0%	3.4%	9.4%	0.12	0.16	0.93	0.94
High Yield Corp. Credit	BBgBarc U.S. Corporate High Yield	3.3%	4.0%	11.3%	0.12	0.18	1.25	1.26
Bank Loans	S&P/LSTA Leveraged Loan	5.3%	5.8%	10.0%	0.34	0.39	1.47	1.50
Global Credit	BBgBarc Global Credit	1.4%	1.6%	7.4%	-0.07	-0.03	0.77	0.78
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	5.0%	5.7%	12.4%	0.25	0.31	1.03	1.03
Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	5.7%	6.4%	12.0%	0.32	0.37	0.17	0.22
Private Credit	Bank Loans + 175bps	7.0%	7.5%	10.0%	0.51	0.56	-	-
Other								
Commodities	Bloomberg Commodity	3.8%	4.9%	15.4%	0.12	0.20	-0.36	-0.29
Hedge Funds*	HFRI Fund Weighted Composite	4.0%	4.3%	7.7%	0.27	0.31	0.55	0.56
Real Estate Debt	BBgBarc CMBS IG	4.0%	4.3%	7.6%	0.27	0.31	1.55	1.58
Core Real Estate	NCREIF Property	6.6%	7.3%	12.4%	0.38	0.44	1.84	1.89
Value-Add Real Estate	NCREIF Property + 200bps	8.6%	10.0%	17.7%	0.38	0.46	-	-
Opportunistic Real Estate	NCREIF Property + 400bps	10.6%	12.9%	23.0%	0.38	0.48	-	-
REITs	Wilshire REIT	6.6%	8.2%	19.1%	0.25	0.33	0.80	0.83
Global Infrastructure	S&P Global Infrastructure	7.2%	8.6%	17.8%	0.30	0.38	0.52	0.56
Risk Parity	Risk Parity	6.9%	7.4%	10.0%	0.50	0.55	-	-
Currency Beta	MSCI Currency Factor Index	1.8%	1.8%	3.6%	-0.04	-0.02	0.19	0.21
Inflation		1.9%	-	-	-	-	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.


*Return expectations differ depending on method of implementation

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 7.1

TO: Board of Retirement

FROM: Scott Hood, Chief Executive Officer 

SUBJECT: Authorization for the Chief Executive Officer to Execute Documentation for Investments as Required

Recommendation

Approve a new Resolution Authorization for the Chief Executive Officer to Execute Documentation for Investments as Required.

Background

After the Board has decided to invest SamCERA funds with external managers, or to increase, decrease or otherwise change the amount of such investments, there is certain documentation that must be executed and there are certain actions to be taken regarding day-to-day operations of the investments. In 2012, the Board delegated to the Chief Executive Officer (CEO) the authority to execute such documentation and to respond to the ongoing demands of the investment.

Discussion

In this same CEO authorization, the CEO can make investment decisions, for Alternative Investments of \$25 million or less, in consultation with the Board Chair or if the Chair is not available, the Vice Chair, and one member of the Investment Committee, the Investment Consultant, staff and legal counsel, if such decision must be made prior to the date of the next regularly scheduled Board meeting and as long as such decision is in the best interest of the investment fund and consistent with applicable Board policy. These investment decisions can include purchasing, selling, or other investment related decisions. All significant actions of the Chief Executive Officer taken using this process are reported to the Board at a subsequent regularly scheduled meeting.

The policy has been implemented smoothly since 2012; however, as the size of the Fund and the respective amounts invested in Alternative Investment has increased, staff recommends increasing the dollar-limit authority to Alternative Investments up to \$35 million. The remainder of the authorization is unchanged.

Attachment

Resolution Authorization for the Chief Executive Officer to Execute Documentation for Investments as Required

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

Board of Retirement

**AUTHORIZATION FOR THE CHIEF EXECUTIVE OFFICER TO EXECUTE
DOCUMENTATION FOR INVESTMENTS AS REQUIRED**

RESOLUTION - ____

WHEREAS, Article XVI, §17 of the Constitution of the State of California vests the Board with *"plenary authority and fiduciary responsibility for the investment of moneys and the administration of the system"*; and

WHEREAS, Government Code §31595 vests in the Board *" . . . exclusive control of the investment of the employees retirement fund."*; and

WHEREAS, Government Code §31596.1 (d) authorizes the Board to retain investment managers *" . . . in connection with administration of the Board's investment program . . . "*; and

WHEREAS, the Board's Investment Consultant and Chief Investment Officer bring investment opportunities and investment decisions to the Board for its determination; and

WHEREAS, after the Board has made a determination to invest SamCERA funds with external managers, or to increase, decrease or otherwise change the amount of such investments, there is certain documentation that must be executed on behalf of the Board in order to effectuate the Board's decisions and to respond to the demands of the day-to-day operations of the investment; and

WHEREAS, the Board has determined that it is in the best interest of the fund that the Chief Executive Officer have the authority to execute any and all documentation with the external manager on behalf of the Board in order to effectuate the Board's investment decisions and to respond to the demands of the day-to-day operations of the investment; and

WHEREAS, the Board has determined that in regards to certain Alternative Investments opportunities that, due to the timing of such investments, that the Chief Executive Officer have the authority to make the investment decision as long as such decision is consistent with the Board policy; and

RESOLVED that the Board hereby authorizes the Chief Executive Officer, in consultation with staff and legal counsel, to execute any and all documentation with SamCERA's external investment managers, on behalf of the Board, in order to effectuate the Board's investment decisions and to respond to the demands of the day-to-day operations of the investments. Be it further

RESOLVED that the Board hereby authorizes the Chief Executive Officer, in consultation with the Board's Investment Consultant, staff and legal counsel, to make investment decisions for those Alternative Investments of \$35 million or less if such decision must be made prior to the date of the next regularly scheduled Board meeting and as long as such decision is in the best interest of the investment fund and consistent with applicable Board policy. Be it further

RESOLVED that all significant actions of the Chief Executive Officer authorized by this resolution shall be reported to the Board at a subsequent regularly scheduled meeting. Be it further


RESOLVED that this resolution shall supersede provisions contained in resolutions previously adopted by the Board that are inconsistent with the provisions set forth in this resolution.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

September 29, 2020

Agenda Item 7.2

TO: Board of Retirement

FROM: Scott Hood, Chief Executive Officer 

SUBJECT: Policy for Procurement and Contracting for Certain Goods and Services

Recommendation

Adopt a resolution amending the Board's "Policy for Procurement and Contracting for Certain Goods and Services."

Background

The "Policy for Procurement and Contracting for Certain Goods and Services" ("Policy") sets forth which contracts must be approved by the Board and which are delegated to the Chief Executive Officer (CEO). Under the current Policy, the Board retains the authority to select and direct the CEO to execute agreements for the following services: actuarial, investment related services, legal, custodial, auditing and any other service provider providing and advisory or consulting services for the Board. The Board further retains the authority to execute all leases. The CEO's authority regarding signing documents needed for investment decisions already made by the Board and the handling of certain alternative investments is set forth in the "Authorization for the Chief Executive Officer to Execute Documentation for Investments as Required."

Discussion

For contracts that the Board has not retained authority, under the current Policy the CEO may enter into agreements for \$100,000 and below. All contracts for services, regardless of the type of service, which are for \$100,000 or above, the CEO must have Board approval to execute the contract. The \$100,000 limit mirrored the authority granted to County Department heads and was reflective of state law. That limit was recently increased to \$200,000 and the proposed amended Policy increases the CEO's authority to \$200,000 for these types of contracts.

Attachment

Resolution Amending the Board's "Policy for Procurement and Contracting for Certain Goods and Services."

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

RESOLUTION __-__

RESOLUTION AMENDING THE "POLICY FOR PROCUREMENT AND CONTRACTING FOR CERTAIN GOODS AND SERVICES."

WHEREAS, pursuant to Government Code section 31520, the management of the retirement system is vested in the Board of Retirement ("Board"); and

WHEREAS, the Board has a fiduciary obligation to the fund to conserve assets and protect the integrity of the fund, for the benefit of the members and beneficiaries of SamCERA; and

WHEREAS, this Board adopted a "Policy for Procurement and Contracting for Certain Goods and Services" ("Policy") so the procurement of goods and services be undertaken in an efficient, diligent, transparent and fair manner; and to delegate authority to the Chief Executive Officer ("CEO"), or designee, to select vendors and enter into certain contracts without approval by the Board, as long as the expenditures are included in the applicable budget or budgets; and

WHEREAS, for contracts that the Board has not retained authority, the Policy provides that the CEO may enter into and terminate agreements for \$100,000 and below, this Board finds that it is in the best interest of SamCERA that the Policy be amended to increase that authorization to \$200,000; and

WHEREAS, this Board has read and desires to adopt the attached amended "Policy for Procurement and Contracting for Certain Goods and Services"; therefore, be it

RESOLVED that the Board of Retirement hereby approves the attached amended "Policy for Procurement and Contracting for Certain Goods and Services."

Regularly passed and adopted, by the San Mateo County Employees' Retirement Association, Board of Retirement, on September 29, 2020.

Ayes, Trustees:

Noes, Trustees:

Absent, Trustees:

Abstain, Trustees:

*Katheryn O'Malley, Board Secretary
SamCERA*

BOARD OF RETIREMENT

POLICY FOR PROCUREMENT AND CONTRACTING FOR CERTAIN GOODS AND SERVICES

I. POLICY OF THE BOARD OF RETIREMENT

The management of the retirement system is vested with the Board of Retirement (“Board”) pursuant to Government Code Section 31520. Consistent with the Board’s fiduciary duty to conserve retirement fund assets, to protect the integrity of the fund for the benefit of the members and beneficiaries, and to minimize the costs of administering the system, it is the policy of the Board that the procurement of goods and services be made in the best interest of SamCERA and be undertaken in an efficient, diligent, transparent, economical, fair manner.

II. DELEGATION OF AUTHORITY TO THE CHIEF EXECUTIVE OFFICER

- A. **Delegated Authority.** The Chief Executive Officer or designee (hereinafter CEO) may bind SamCERA for the purchase of goods or services or terminate such relationship based upon the provisions of this policy, except in emergencies and as may be otherwise authorized by the Board. In cases of emergencies, the CEO is authorized to act on behalf of SamCERA subject to later ratification by the Board.

- B. **Retained Authority.** The Board retains the authority to select and direct the CEO to execute agreements for the following services: actuarial, investment and investment consulting, legal, custodial, auditing and any other service provider providing an advisory or consulting service for the Board. The CEO’s authority regarding investment services is set forth by a separate resolution entitled “Authorization for the Chief Executive Officer to Execute Documentation for Investments as Required.” The Board further retains the authority to execute all leases.

III. CONTRACTS FOR SERVICES

- A. **Contracts \$200,000 and Below.** For contracts for the provision of services that the Board has not retained authority as set forth in Section II B, the CEO may enter into agreements for \$200,000 and below. If the agreement is amended and the amended

total is more than \$200,000, the CEO must have Board approval to execute the amendment.

- B. **Contracts Above \$200,000.** All contracts for services, regardless of the type of service, which are for \$200,000 or above, the CEO must have Board approval to execute the contract.

IV. PURCHASE CONTRACTS

The CEO has authority to purchase goods, supplies, equipment and other items needed by SamCERA. If it is in the best interest of SamCERA, and if authorized by the County, the CEO may utilize the County's Procurement Division and process.

V. BUDGET APPROVAL

All expenditures for contracts entered into by the CEO pursuant to the authority delegated by this policy must be included in the applicable budget or budgets. All budgets must be approved by the Board.

VI. PROCEDURES FOR PROCURING GOODS AND SERVICES

CEO will use selection procedures that will enable the consideration of a broad range of potential suppliers of good and services in the selection process, which will meet budgetary, staffing, time and other relevant constraints.

The selection of goods and services shall be efficient, diligent, transparent, economical, fair manner and made in the best interest of SamCERA. Selection procedures need not be used if there is only a "sole source provider" and no other qualified provider.

Amended September 29, 2020