County of Los Angeles
CHIEF EXECUTIVE OFFICE
OPERATIONS CLUSTER

FESIA A. DAVENPORT
Chief Executive Officer

DATE:	February 23, 2022
TIME:	2:00 p.m. – 4:00 p.m.
LOCATION:	**TELECONFERENCE CALL-IN NUMBER: 1(323)776-6996** **TELECONFERENCE ID: 605696861#**

To join via phone, dial 1(323)776-6996, then press 605696861#.

YOU CAN ALSO JOIN THIS MEETING BY CLICKING ON THE FOLLOWING LINK:

Click here to join the meeting

THIS MEETING WILL CONTINUE TO BE CONDUCTED VIRTUALLY TO ENSURE THE SAFETY OF MEMBERS OF THE PUBLIC AND EMPLOYEES AS PERMITTED UNDER STATE LAW

AGENDA

Members of the Public may address the Operations Cluster on any agenda item after all Informational Items are presented.
Two (2) minutes are allowed for each item.

1. **Call to order – Kirk Shelton/Anthony Baker**

2. **INFORMATIONAL ITEM(S):**

   A) Board Letter:
   ADJUSTMENTS TO EMPLOYEE RETIREMENT CONTRIBUTION RATES FOR PEPRA DEFINED BENEFITS PLAN
   CEO/BENEFITS/LACERA – Susan Moomjean, Manager CEO;
   Leslie Rooney, Principal Analyst, CEO;
   Ted Granger, Assistant Chief Financial Officer, LACERA; and
   Laura Guglielmo, Assistant Executive Officer, LACERA

CONTINUED ON PAGE 2

B) Board Letter:
ISSUANCE AND SALE OF LOS ANGELES COUNTY REGIONAL FINANCING AUTHORITY LEASE REVENUE REFUNDING BONDS, SERIES 2022 (VERMONT MANCHESTER SOCIAL SERVICES REFUNDING PROJECT)
TTC – Keith Knox, Treasurer and Tax Collector;
Elizabeth Buenrostro Ginsberg, Chief Deputy Treasurer and Tax Collector; and Daniel Wiles, Assistant Treasurer and Tax Collector

3. **PRESENTATION/DISCUSSION ITEMS:**

A) INVESTMENTS TO ACCELERATE DIGITAL EQUITY
ISD – Selwyn Hollins, Director

4. **Public Comment**
(2 minutes each speaker)

5. **Adjournment**

FUTURE AGENDA TOPICS

CALENDAR LOOKAHEAD:

BOS/EO/CSO – REPORT ON LIMITING SINGLE USE PLASTICS IN LOS ANGELES COUNTY UNINCORPORATED AREAS (ITEM NO. 8, AGENDA OF OCTOBER 15, 2019)

BOARD LETTER/MEMO
CLUSTER FACT SHEET

☒ Board Letter ☐ Board Memo ☐ Other

CLUSTER AGENDA REVIEW DATE	2/23/2022
BOARD MEETING DATE	3/15/2022
SUPERVISORIAL DISTRICT AFFECTED	☒ All ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th ☐ 5th
DEPARTMENT(S)	Chief Executive Office / LACERA
SUBJECT	New Employer and Employee Retirement Contribution Rates
PROGRAM	N/A
AUTHORIZES DELEGATED AUTHORITY TO DEPT	☐ Yes ☒ No
SOLE SOURCE CONTRACT	☐ Yes ☒ No If Yes, please explain why:
DEADLINES/ TIME CONSTRAINTS	Should go to the Board no later than 05/15/22 for approval, in order to implement new rates by the effective date of July 1, 2022.
COST & FUNDING	Total cost: $ N/A Funding source: N/A TERMS (if applicable): Explanation:
PURPOSE OF REQUEST	Annual approval of new employer and employee retirement contribution rates as a result of the annual actuarial valuation conducted by LACERA's actuary.
BACKGROUND (include internal/external issues that may exist including any related motions)	N/A
EQUITY INDEX OR LENS WAS UTILIZED	☐ Yes ☒ No If Yes, please explain how:
SUPPORTS ONE OF THE NINE BOARD PRIORITIES	☐ Yes ☒ No If Yes, please state which one(s) and explain how:
DEPARTMENTAL CONTACTS	Name, Title, Phone # & Email: • Susan Moomjean, Manager, (213) 893-0040, smoomjean@ceo.lacounty.gov • Leslie Rooney, Principal Analyst, (213) 974-5951, lrooney@ceo.lacounty.gov • Ted Granger, Assistant Chief Financial Officer, (626) 564-6000 x3524, tgranger@lacera.com • Laura Guglielmo, Assistant Executive Officer, (626) 564-6000 x4486, lguglielmo@lacera.com

March 15, 2022

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

Dear Supervisors:

**ADJUSTMENTS TO EMPLOYEE RETIREMENT CONTRIBUTION RATES
FOR PEPRA DEFINED BENEFIT PLANS
ALL DISTRICTS
(3-VOTES)**

SUBJECT

Recommendation to approve adjustments to the employee retirement contribution rates for the Los Angeles County Employees Retirement Association (LACERA) defined benefit plans established pursuant to the Public Employees' Pension Reform Act of 2013 (PEPRA). The recommended changes are effective July 1, 2022, and are applicable only to represented and non-represented employees who are members of General Plan G or Safety Plan C.

IT IS RECOMMENDED THAT THE BOARD:

1. Approve the employee retirement contribution rate changes effective July 1, 2022, for all represented and non-represented employees who are members of General Member Plan G or Safety Member Plan C (Attachment A).

2. Instruct the Auditor-Controller to make the system changes necessary to implement these recommendations.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The County Employees Retirement Law of 1937 requires that an actuarial valuation of the retirement system be conducted at least once every three years. This law further requires that on the basis of such valuation, a recommendation is to be made to the Board of Supervisors (Board) at least 45 days prior to the beginning of the succeeding fiscal year to change employer and/or member contributions rates, as may be necessary, to properly fund the retirement system. Although a triennial review is required by law, the plan actuary (Milliman) conducts an annual review pursuant to LACERA's Board of Investments' Retirement Funding Policy to measure the plan's funding progress and to recommend any contribution rate changes.

The purpose of this recommendation is to set the employee contribution rates only for the defined benefit plans established pursuant to PEPRA - General Member Plan G and Safety Member Plan C. The recommended rates are applicable to and are the same for represented and non-represented members of these plans. Also, the recommended rates are at a level that represents a 50 percent share of the plans' benefit costs based upon the June 30, 2021, LACERA actuarial valuation report prepared by Milliman. This report was subsequently approved by LACERA's Board of Investments on December 8, 2021.

Employee Contribution Rate Change Schedule

The employee contribution rates for PEPRA plans (General Member Plan G and Safety Member Plan C) must be changed annually if indicated by the annual actuarial valuation to ensure that the employee contribution rates are maintained at a level that represents a 50 percent share of the plans' benefit costs.

In contrast, the employee contribution rates for the non-PEPRA plans (General Member Plans A, B, C, and D and Safety Member Plans A and B) are adjusted on a triennial basis, if warranted, by the Investigation of Experience study (experience study) that the plan actuary conducts in conjunction with the annual valuation. The experience study reviews the reasonableness of the economic and non-economic actuarial assumptions used to derive the employee and employer contribution rates. Specifically, it compares the actual experience to what was predicted to happen using these actuarial assumptions. The actuary then determines whether any changes to the underlying assumptions or methodology are warranted to better project the retirement benefit plan's liabilities and asset growth. If changes are made, the non-PEPRA employee contribution rates are adjusted accordingly.

The last adjustment to these non-PEPRA plans was made effective July 1, 2020, based upon the June 30, 2019 valuation. Since there was no experience study conducted in conjunction with the June 30, 2021 valuation, Milliman did not recommend any changes to the employee contribution rates for the non-PEPRA plans at this time. If rate changes are recommended following the next scheduled experience study and valuation period ending June 30, 2022, we will return to the Board with revised employee contribution rates for both non-PEPRA and PEPRA plans, effective July 1, 2023.

General Plan G and Safety Plan C

As described in rate change letters from previous years, PEPRA revised the retirement contribution and benefits formulas and required the County to implement several significant changes with respect to contribution rates. One of the most significant changes mandated by PEPRA was the requirement that all new members of a California public retirement system as of January 1, 2013, must pay at least 50 percent of the normal cost of funding the retirement benefit. Normal cost is defined as the percentage of payroll for each fiscal year that must be contributed to the retirement fund to pay for the promised benefit as determined by the retirement plan actuary. To comply with these funding requirements, two new PEPRA defined benefit plans (General Member Plan G and Safety Member Plan C) were established and the non-contributory General Member Plan E was closed to new members, effective November 27, 2012.

Aside from the 50/50 cost sharing feature, these plans differ from the legacy LACERA defined benefit plans in that the employee contribution rates are the same for all participants regardless of entry age. This flat rate feature has significant advantages over the entry age-based rates including ease of administration and lower probability of calculation errors. Additionally, based upon a LACERA survey of other California public retirement plans, most are using flat rates versus entry age-based rates.

Implementation of Strategic Plan Goals

The retirement benefit and funding changes provided for in these recommendations are directly responsive to the County of Los Angeles' Strategic Plan Goal III.3 of Realizing Tomorrow's Government Today by pursuing operational effectiveness, fiscal responsibility and accountability by ensuring sufficient funding of the County's retirement system and providing a means to more easily administer the subject plans.

FISCAL IMPACT/FINANCING

Since these recommendations are limited to changing the employee portion of the retirement contribution rates for PEPRA defined benefit plans, there is no increase in net County costs.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

On December 21, 2021, the Coalition of County Unions and Service Employees International Union (SEIU) Local 721, were advised of the new employee rates that are effective July 1, 2022, for these PEPRA plans. The recommended rates are detailed in Attachment A.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

None.

Respectfully submitted,

FAD:JMN:MM:TP
SRM:LR:mst

Enclosures

c: Executive Office, Board of Supervisors
County Counsel
Auditor-Controller
Human Resources
Los Angeles County Employees Retirement Association
Coalition of County Unions
SEIU Local 721

Attachment A

EMPLOYEE CONTRIBUTION RATES FOR PEPRA RETIREMENT PLANS EFFECTIVE JULY 1, 2022

Retirement Plan	New Recommended Rate *(same for all entry ages)*	Current Rates Effective 7/1/2021
General Members – Retirement Plan G	**9.08%**	9.10%
Safety Members – Retirement Plan C	**14.33%**	14.42%

March 15, 2022

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

ADOPTION OF NEW RETIREMENT CONTRIBUTION RATES
(ALL DISTRICTS) (3 VOTES)

SUBJECT

Recommendation to adopt revised employer and employee contribution rates as approved by the Los Angeles County Employees Retirement Association (LACERA) Board of Investments in accordance with Government Code Section 31454, to be effective no later than September 29, 2022.

IT IS RECOMMENDED THAT YOUR BOARD:

1. Adopt the revised employer and employee retirement contribution rates approved by the LACERA Board of Investments in accordance with Government Code Section 31454, to be effective no later than September 29, 2022.

2. Instruct the Auditor-Controller to make the system changes necessary to implement this recommendation.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of these recommendations is to set employer and employee contribution rates at a level sufficient to fund retirement system liabilities identified in the June 30, 2021 Actuarial Valuation of Retirement Benefits Report (attached). On December 8, 2021, the LACERA Board of Investments adopted the employer and employee rates as recommended in the 2021 Actuarial Valuation Report prepared by LACERA's consulting actuary, Milliman.

The County Employees Retirement Law of 1937 requires the LACERA Board of Investments to obtain an actuarial valuation of the retirement system at intervals not to exceed three (3) years and, based on such valuation, to recommend to the Board of Supervisors at least forty-five (45) days prior to the beginning of the succeeding fiscal year, such changes in employer and/or employee contribution rates as may be necessary to properly fund the retirement system. LACERA conducts an actuarial valuation on an annual basis. The Board of Supervisors is required to adopt the contribution rates approved by the LACERA Board of Investments in accordance with Government Code Section 31454.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The adoption of the revised employer and employee contribution rates provided in the recommendation is directly responsive to the Strategic Plan Goals of fiscal responsibility.

FISCAL IMPACT/FINANCING

Adoption of these actuarial valuation recommendations will result in an aggregate employer contribution rate of 24.46% which is estimated to increase annual employer retirement contributions by approximately $49 million for the upcoming Fiscal Year 2022-2023. This will result in a total annual employer retirement cost estimate of $2.3 billion for all employers. Note that Los Angeles County (County) provides more than 96% of the employer contributions to LACERA.

Employee contribution rate changes for General Plan G and Safety Plan C, which are not age specific, will decrease by 0.02% of pay (General Plan G) and 0.09% of pay (Safety Plan C), as compared to current employee contribution rates adopted for the fiscal year 2021-2022. For the upcoming fiscal year 2022-2023, new contributions rates for General Plan G and Safety Plan C are included in the table below.

	General Plan G	Safety Plan C
All Ages: Recommended	**9.08%**	**14.33%**
All Ages: Current	9.10%	14.42%
Change: Increase/ (Decrease)	(0.02)%	(0.09)%

The recommended individual employee contribution rates are unchanged for General Plans A, B, C, and D and Safety Plans A and B. General Plan E is non-contributory. These rates are specific to each Plan and the employee's entry age. Average employee contribution rates for all Plans are provided in Exhibit 10, page 32 of the 2021 Actuarial Valuation Report.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

1. LEGAL REQUIREMENT FOR PERIODIC ACTUARIAL VALUATIONS AND ADJUSTMENTS IN CONTRIBUTION RATES

   Provisions contained in Article XVI, Section 17, of the California Constitution and in the County Employees Retirement Law of 1937 (California Government Code, Sections 31450-31899.10) govern LACERA's actuarial practice.

The California Constitution, in Article XVI, Section 17(e), assigns "the sole and exclusive power to provide for actuarial services" to the governing body of the public retirement system. Such power is granted by the Constitution "in order to assure the competency of the assets of the public pension or retirement system."

Section 31453 of the County Employees Retirement Law requires LACERA to obtain an actuarial valuation at least once every three (3) years and, based on such valuation, to recommend to the Board of Supervisors, at least forty-five (45) days prior to the beginning of the succeeding fiscal year, such changes in employer and/or employee contribution rates as may be necessary to properly fund the retirement system. Government Code Section 7504(a) also requires an actuarial valuation be performed at least every three (3) years.

Section 31454 requires the Board of Supervisors to adjust contribution rates in accordance with LACERA's recommendations no later than ninety (90) days following the beginning of the immediately succeeding fiscal year, which means that the adjustments must be made effective on July 1, 2022, or thereafter, but no later than September 29, 2022.

Section 31454.1 exempts the independent assumptions and calculations of LACERA's actuary from "meet and confer" requirements. This same section also recognizes the "meet and confer" responsibility of the Board of Supervisors in implementing the recommendations contained in the actuarial valuation report.

2. ACTUARIAL VALUATION PROCESS

Actuarial valuations are performed to determine the cost of a retirement system. The cost of a defined benefit retirement system, such as the one administered by LACERA, consists of two (2) components - normal cost and unfunded liability. Normal cost is the amount needed to fund the service credit currently being earned by retirement system members (active members) through their present employment with the County. The unfunded liability represents liabilities created by past service, which have not been funded by previously collected contributions.

The cost of a retirement system is determined by several economic and non-economic (demographic) factors, referred to as assumptions, such as the rate of return on assets, the rate of future salary increases, inflation, mortality, disability, and membership terminations. The actuary must make these assumptions and review them at least every three (3) years, concerning the long-range impact of these cost factors in determining the amount of assets required to fund the cost of the retirement system.

There are three (3) primary sources of revenue for underwriting the cost of a retirement system: employee contributions, employer contributions, and investment earnings. As part of the valuation process, the actuary compares the current assets available to pay retirement benefits with the actuarial liabilities (both current and future) for current members. The main purpose of an actuarial valuation is to determine the amount of future employer and employee contributions and expected investment earnings that will be needed to pay all future benefits and achieve full funding of the retirement system.

3. ACTUARIAL REVIEW

To validate the accuracy of the valuations used to calculate contribution rates, the LACERA Board of Investments authorizes an independent actuarial review of the services performed by Milliman. Actuarial reviews are to be performed every three (3) years, in the same cycle as the triennial investigation of experience study, and as such, the next actuarial review will be performed in conjunction with the June 30, 2022 Triennial Experience Study and Actuarial Valuation Report preparation.

4. 2021 ACTUARIAL ASSUMPTION CHANGES

No changes were made to economic and demographic assumptions used to prepare the 2021 Actuarial Valuation Report. The assumption set adopted for the 2019 Actuarial Valuation Report remains unchanged.

5. 2021 VALUATION RESULTS

According to Milliman's 2021 Actuarial Valuation Report, the actuarial value of valuation assets totaled $64.9 billion and the actuarial accrued liability amounted to $81.9 billion. As a result, LACERA's June 30, 2021 funded status was 79.3%, compared to 76.3% as of the prior year, June 30, 2020.

Key factors contributing to this change in funded status is summarized as follows:

- $2 billion actuarial gain on the actuarial value of assets due to recognition of a portion of investment return gains and losses in the current and prior periods under a five-year smoothing process; and

- $139 million decrease in liabilities due to other non-salary related sources, including demographic, mortality, and Consumer Price Index experience different than assumed.

Milliman estimates, had the actual market value of assets been used rather than the actuarial value of assets with the smoothing method applied, the funded status would have been 88.3% with a required aggregate employer contribution rate of 18.57%.

At its February 13, 2013 meeting, the LACERA Board of Investments amended the Retirement Benefit Funding Policy to include the STAR Program Reserve as a valuation asset in the June 30, 2012 and future valuations. If the $614 million STAR Reserve had been excluded from the actuarial value of assets as of June 30, 2021, the funded status would have decreased 0.8% and the employer contribution rate would have increased by 0.49% of payroll.

Retirement system demographics reported in the 2021 Actuarial Valuation Report indicate a 1.0% decrease in the size of the active member population that totaled 99,101 with an overall average age of 46.7 years. The retired population increased by 2.2% to a total of 69,497 with an average age of 73.0 years. The average retirement benefit payment increased by 3.0% to $4,679 per month.

6. IMPACT ON EMPLOYER AND EMPLOYEE CONTRIBUTION RATES

As previously stated, LACERA is funded by both employer and employee contributions.

Employees

Contribution rates of employees participating in the closed (legacy) plan tiers (General Plans A, B, C, and D and Safety Plans A and B) are based on an employee’s age at first membership and designed to fund: (1) a defined annuity at a specified age; and (2) one-half of the cost-of-living adjustment benefit. Employee age-based annuity contribution rates are affected by salary, investment, and mortality assumption changes and will vary according to the employee’s age at first membership.

Employees participating in the open plan tiers (General Plan G and Safety Plan C) contribute using single rates set at one-half the plan's normal cost. The recommended contribution rates for General Plan G and Safety Plan C are included on page 28 of the 2021 Actuarial Valuation Report. Milliman is recommending a decrease to both General Plan G of 0.02% and Safety Plan C of 0.09% to reflect the change in the total normal cost rates as a percentage of pay. Since no new assumptions were adopted for the 2021 Actuarial Valuation Report, Milliman is not recommending changes to the member contributions rates for General Plans A to D and Safety Plans A and B. Employee contribution rates for all Plans at every entry age (with and without the cost-of-living component) can be found in the 2021 Actuarial Valuation Report’s Appendix D which starts on page 108.

Employer

Liabilities not funded through the employee contribution rates are the responsibility of the employer. Changes in any of the economic and demographic assumptions impact both employee and employer contribution rates. The employer is required to contribute the annual cost of benefits allocated to a valuation year not covered by employee contributions. These contributions are known as the employer normal cost contributions. Milliman has recommended new employer normal cost contribution rates for each Plan for the fiscal year beginning July 1, 2022 which result in a decrease in the overall employer normal cost contribution rate from 10.89% of pay to 10.88% of pay.

The employer is also responsible for contributing to cover any shortfall in funding for liabilities accrued in the past. This portion of the employer's contribution rate is known as the unfunded actuarial accrued liability (UAAL) contribution rate. Under the terms of the LACERA Board of Investments' Retirement Benefit Funding Policy, contributions to satisfy an unfunded liability are calculated using a closed twenty (20) year layered amortization period method when LACERA's funded ratio is below 100%. As the funded ratio as of June 30, 2021 is 79.3%, the calculated UAAL contribution rate for all plan tiers is 13.58% beginning July 1, 2022.

<u>Employer Phase-in</u>
The Board of Investments provided direction to the plan actuary to use "direct rate smoothing" to phase-in the actuarial assumption change cost impact on the employer contribution rate, which will ultimately result in a larger unfunded liability than if the rates were not phased in. The three (3) year phase-in approach initially resulted in a lower employer contribution rate for the Fiscal Years beginning 2020 and 2021 until the increase was fully recognized in the July 1, 2022 contribution rates.

Future employer contribution rates over the next 20 years after the phase-in period are projected to be greater than they would have been without the phase-in, due to lower employer contributions received during the phase-in period. The UAAL is estimated to be $303 million higher due to the lower employer contributions received, which results in an increase in the UAAL contribution rate of approximately 0.23% of covered payroll. Applying the 0.23% cost factor to the $9.4 billion estimated County payroll (covered payroll) for fiscal year 2023 results in an approximate additional cost of $21 million for the fiscal period beginning July 1, 2022.

The rate increases due to the new assumptions and amortization method adopted for the 2019 Actuarial Valuation will be fully phased-in with the employer contribution rate effective July 1, 2022. Employee contribution rates are not impacted by the employer's cost phase-in approach.

<u>Employer Cost Increase</u>
Applying the 24.46% employer contribution rate to an actuarially estimated covered payroll, Milliman estimates the annual contributions owed by LACERA employers will increase for Fiscal Year 2022-2023 by approximately $49 million compared to the prior fiscal year. The County provides over 96% of the contributions to LACERA, so the estimated increase in County contributions would be less than, but close to, the $49 million estimate.

IMPACT ON CURRENT SERVICES

None.

CONCLUSION

The County has a statutory obligation to prefund the retirement benefits promised to its employees. LACERA has a statutory obligation to calculate employer and employee contribution rates and communicate the rates to County's Board of Supervisors by May 15, in order to provide the County sufficient time to implement the contribution rates by July 1, 2022 but no later than September 29, 2022 in accordance with Government Code Section 31454.

The employer cost for the retirement system benefits is projected to increase in Fiscal Year 2022-2023 by approximately $49 million. This increase is primarily due to the phase-in of the final portion of 2019 actuarial assumption changes, although that increase is largely offset by the recognition of current year investment gains. The aggregate employer contribution rate, fully phased-in, is 24.46%, a decrease of 0.18% of payroll compared to the employer contribution rate effective in the prior fiscal year, with changes to be effective no later than September 29, 2022. This employer contribution rate results in an annual retirement cost estimate of $2.3 billion for employers participating in LACERA. Assuming the retirement system's actual experience equals its actuarial assumptions for future years, which may not in fact happen, Milliman forecasts on page 3 of the 2021 Valuation Report that the employer's contribution rate would decrease through Fiscal Year 2026-2027 and stabilize at about 17.8% of payroll.

Respectfully submitted,

SANTOS H. KREIMANN
Chief Executive Officer

SHK:tg
ActVal21BOS2022_Final.docx

Attachment: 2021 Actuarial Valuation of Retirement Benefits Report

c: Chief Executive Officer, Los Angeles County
Executive Officer, Board of Supervisors
LACERA Board of Investments (without attachment)
LACERA Board of Retirement (without attachment)

Los Angeles County Employees Retirement Association

Actuarial Valuation of Retirement Benefits

June 30, 2021

Prepared by:

Mark C. Olleman, FSA, EA, MAAA
Consulting Actuary

Nick J. Collier, ASA, EA, MAAA
Consulting Actuary

Craig Glyde, ASA, EA, MAAA
Consulting Actuary

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Issued November 22, 2021

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November 22, 2021

Board of Investments
Los Angeles County Employees Retirement Association
300 North Lake Avenue, Suite 820
Pasadena, CA 91101-4199

Re: **LACERA Actuarial Valuation of Retirement Benefits as of June 30, 2021**

Dear Trustees of the Board:

As requested, we have performed an actuarial valuation of retirement benefits for the Los Angeles County Employees Retirement Association (LACERA) as of June 30, 2021 to be used in determining the contribution rates effective July 1, 2022. The major findings of the valuation are contained in this report. This report reflects the benefit provisions and contribution rates in effect as of June 30, 2021, and LACERA's Retirement Benefit Funding Policy (Funding Policy) that was adopted in December of 2009 and amended as of February 2013. It should be noted that under the amended Funded Policy, the reserve value for STAR benefits is included in the Valuation Assets for 2014 and future valuations; however, the liability for any potential STAR benefits that may be granted in the future is not included in this valuation.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by LACERA's staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for LACERA have been determined on the basis of actuarial assumptions and methods that are individually reasonable (taking into account the experience of LACERA and reasonable expectations); and that, in combination, offer a reasonable estimate of anticipated experience affecting LACERA. Further, in our opinion, each actuarial assumption used is reasonably related to the experience of the Plan and to reasonable expectations, which, in combination, represent a reasonable estimate of anticipated experience for LACERA. The valuation results were developed using models intended for valuations that use standard actuarial techniques.

This valuation report is only an estimate of LACERA's financial condition as of a single date. It can neither predict LACERA's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of benefits, only the timing of contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement, although for informational purposes we have shown valuation results at +/- 0.5% on the investment return assumption at the end of the Executive Summary.

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 Investments has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix A of this report.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts of LACERA. The calculations in the enclosed report have been made on a basis consistent with our understanding of LACERA's funding requirements as stated under their Funding Policy. 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 will provide LACERA financial reporting results relevant to GASB Statements No. 67 and 68 in separate reports.

Milliman's work is prepared solely for the internal business use of LACERA. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work 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) LACERA may provide a copy of Milliman's work, in its entirety, to LACERA's 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 LACERA.

(b) LACERA 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, investment, 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 which are consistent with the principles prescribed by the Actuarial Standards Board and the *Code of Professional Conduct and Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States*, published by the American Academy of Actuaries. 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 members of LACERA 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,

Mark Olleman, FSA, EA, MAAA	Nick Collier, ASA, EA, MAAA
Consulting Actuary	Consulting Actuary

Craig Glyde, ASA, EA, MAAA
Consulting Actuary

Table of Contents

Appendices

1. Summary of Findings

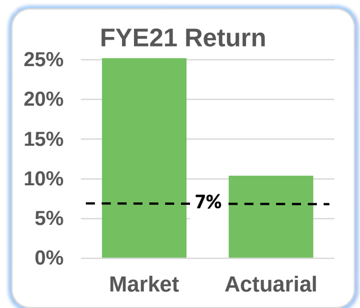
2021 Valuation Results

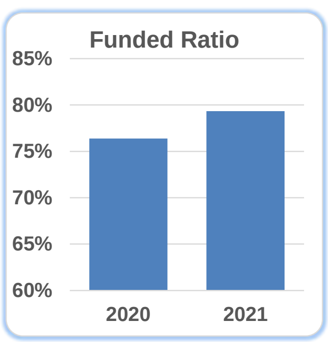
	Fiscal Year Beginning	
	July 1, 2022	July 1, 2021
Employer Contribution Rate with phase-in	24.46% (1)	24.64% (2)
Funded Ratio	79.3%	76.3%

1. *The FYB 2022 employer contribution rate was calculated in the June 30, 2021 valuation.*
2. *The FYB 2021 employer contribution rate was calculated in the June 30, 2020 valuation.*

This report presents the results of the June 30, 2021 actuarial valuation. This valuation determines the member and employer contribution rates payable starting July 1, 2022. Several key points are summarized below:

Investment Returns: For the fiscal year ending in 2021, the fund returned 25.2% on a market-value basis (net of investment expenses). In total, there was an $11.5 billion gain on market assets relative to the assumed rate of return of 7.0%. Under the actuarial asset method, which recognizes investment gains and losses over a five-year period, 20% of this gain ($2.3 billion) is recognized in the current year and the remaining amount ($9.2 billion) will be recognized in the actuarial value of assets evenly over the next four years. Due to this deferred recognition, the return on actuarial assets was 10.4%, equivalent to a gain of $2.0 billion relative to the assumed return of 7.0%.



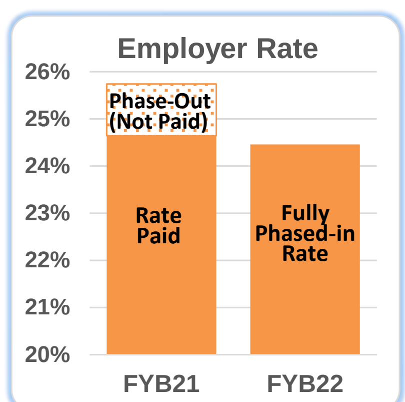


Funding: Due primarily to the recognition of current year investment gains, the Funded Ratio increased from 76.3% to 79.3%. Overall the recognition of current and prior year investment gains and losses caused a 2.5% increase in the Funded Ratio. Contributions to amortize the Unfunded Actuarial Accrued Liability (UAAL) increased the Funded Ratio by an additional 0.7%, while salary increases larger than predicted by the assumptions caused a 0.4% decrease in the Funded Ratio. On a market-value basis, the Funded Ratio increased from 74.0% to 88.3%.

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.

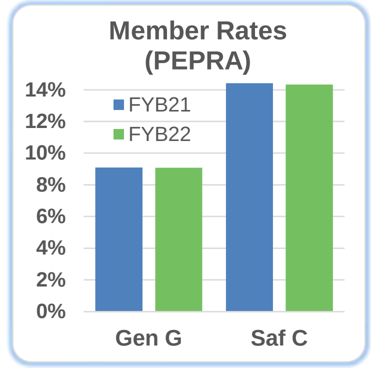
Employer Contribution Rate: At the January 2020 Board of Investments (BOI) meeting, the BOI adopted a three-year phase-in of the increase in the employer contribution rate due to the new assumptions and amortization method effective June 30, 2019. The rate increases are fully phased-in with the employer contributions effective July 1, 2022.

The total calculated employer contribution rate decreased from the prior valuation by 0.18% of payroll, from 24.64% to 24.46%. The decrease in the employer contribution rate due the recognition of current year investment gains is largely offset by the increase this year due to the phase-in of the final portion of the 2019 assumption changes, where the recognition was deferred in the prior valuation. Without the phase-in, the employer contribution rate in FYB 2021 would have been 25.74% of pay instead of the 24.64% that is currently being paid.



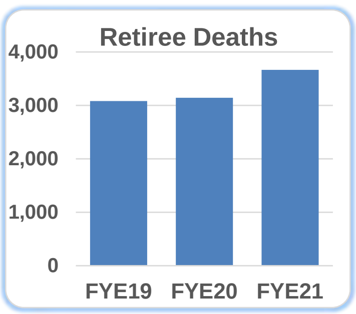
The "Analysis of Change" section provides an analysis of the sources of change in employer contribution rates since last year. In addition, the section "Projected Future Employer Contribution Rates" below shows a 10-year projection of employer contribution rates.

Member Contribution Rates: New member contribution rates are recommended for General Plan G and Safety Plan C effective July 1, 2022. General Plan G and Safety Plan C member rates are required to be equal to 50% of the Gross Normal Cost of the respective plan. The recommended member contribution rates are slightly lower for General Plan G (9.10% decreased to 9.08%) and Safety Plan C (14.42% decreased to 14.33%) relative to the fiscal year beginning July 1, 2021.



Member contribution rates for all plans, except General Plans E and G and Safety Plan C, vary based on a member's entry age to LACERA and the underlying actuarial assumptions. Since no new assumptions were adopted effective with this valuation, there are no recommended changes to member contribution rates for those plans.

Member contribution rates are discussed in detail in Section 5 of this report.



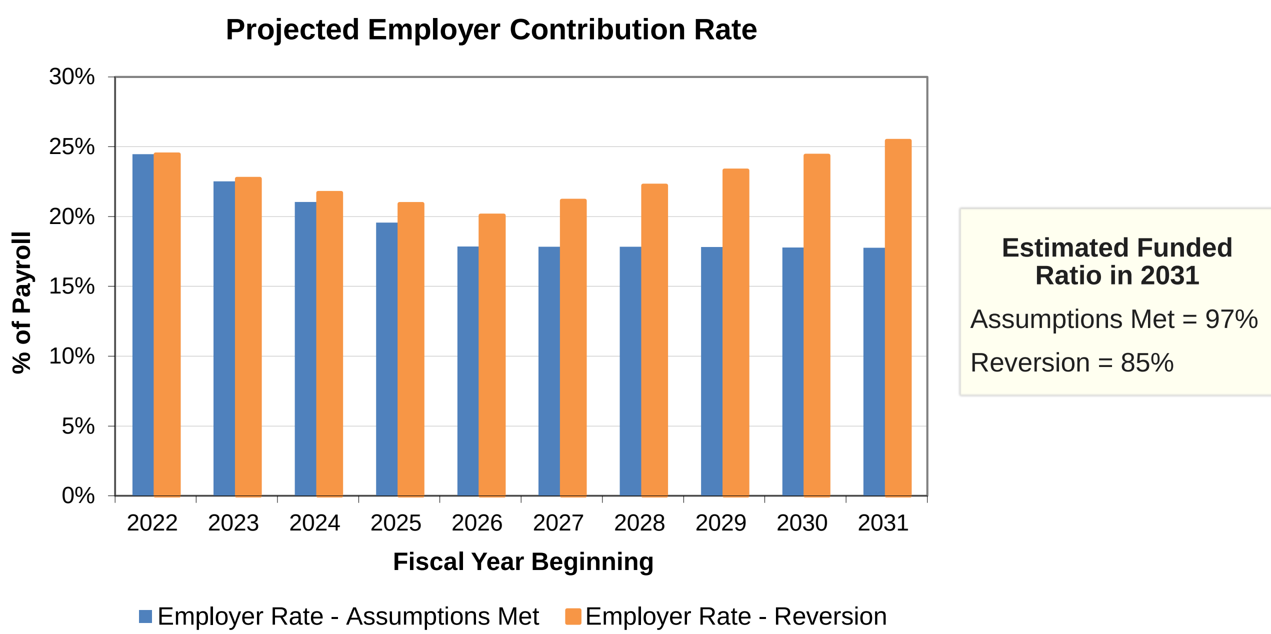
Pandemic Impact: Although it is difficult to isolate the exact impact of the pandemic on LACERA, we did observe several areas where there was a noticeable difference from recent experience. Relative to the prior fiscal year, the mortality rate among healthy retirees was approximately 13% higher. Additionally, both the numbers of service retirements and other terminations of employment were up about 10% over recent experience, which was likely impacted by the pandemic. Although there was clearly a meaningful impact of the pandemic on LACERA members, the results of the valuation did not show a significant impact on LACERA's funding.

Projected Future Employer Contribution Rates

The employer contribution rate beginning July 1, 2022 is 24.46% of payroll, which is a weighted average for all LACERA plans. The actual percent of payroll to be contributed by the employers varies by plan as shown in Exhibit 11.

The calculated employer contribution rate is effective for the fiscal year beginning July 1, 2022. Employer contribution rates in future years will be largely dependent on actual experience relative to that projected by the actuarial assumptions, particularly the investment return assumption. Additionally, if the assumptions change, this could also have a material impact on future results. Even if all actuarial assumptions are met over the next few years and there are no changes in the underlying assumptions, we project additional changes in future employer contribution rates as deferred investment gains and losses are recognized. As will almost certainly be the case, actual experience will not exactly match the actuarial assumptions over those years, and a different pattern of future employer contribution rates will emerge.

To illustrate this potential variance, we have performed a 10-year projection of the employer contribution rate and Funded Ratio under two scenarios 1) one assuming that all actuarial assumptions are met (including 10 years of investment return of 7.0% per year); and 2) one that assumes a reversion to the assumed investment return. The 10-year reversion to the mean illustration is determined by calculating the annual investment return (5.15%) that would be necessary in each of the following 9 years, so that combined with the 25.2% rate of investment return from the fiscal year ended June 30, 2021 the 10-year average annual rate of investment return would be equal to the assumed annual investment return assumption of 7.0%. This projection is shown in the chart below.



As shown in the chart above, if all assumptions are met in future years, the employer contribution rate will decrease through 2026 as deferred investment gains and losses are recognized, and will then stabilize at about 17.8% of pay. However, if long term average investment return reverts gradually to the assumed mean value of 7.0%, then the long term employer contribution rate is projected to rise to about 25% of pay. The employer contribution rate is likely to be subject to more variance than shown due to year-to-year volatility in the actual investment return and actual experience deviating from that projected by the assumptions.

Under the projection scenarios, the Funded Ratio will be approximately 97% as of June 30, 2031 if all assumptions are met and will be approximately 85% as of that date under the investment return mean reversion illustration.

Analysis of Change

The following table shows an analysis of the primary causes of the change in the employer contribution rate and the Funded Ratio over the last year. The recognition of a portion of the current year's investment gain was the most significant factor affecting the employer contribution rate and Funded Ratio. The increase due to the final recognition of the 2019 assumption changes mostly offsets the decrease in the employer contribution rate from the recognition of the combined investment gains and losses.

Sources of Change	Employer Contribution Rate	Funded Ratio
June 30, 2020 Actuarial Valuation	**24.64%**	**76.3%**
Expected Year-to-Year Change[(1)]	0.08%	0.7%
Assumption and Method Changes	0.00%	0.0%
Recognized Investment Gain/Loss		
From Current Year	-1.90%	2.8%
From Prior Years	0.21%	-0.3%
Combined Investment Gain/Loss	-1.69%	2.5%
Contributions greater than assumed	-0.05%	0.0%
Payroll Increase less than assumed	0.04%	0.0%
Liability Gain / Loss		
Salary Increase greater than assumed	0.40%	-0.4%
Retiree COLAs less than assumed	-0.06%	0.0%
Other	0.00%	0.2%
Combined Liability Gain/Loss	0.34%	-0.2%
Recognition of 2019 Assumption Changes	1.10%	0.0%
Total Change	**-0.18%**	**3.0%**
June 30, 2021 Actuarial Valuation	**24.46%**	**79.3%**

1. *Expected increase in employer contribution rate reflects the impact of the phase-in of 2019 assumption changes.*

Based on the 2020 valuation, the expected UAAL as of June 30, 2021 was $18.7 billion. The actual UAAL as of June 30, 2021 is $17.0 billion. The lower than expected UAAL is primarily due to the recognition of actuarial asset gains from the current year. This was partially offset by salary increases greater than assumed in the prior fiscal year. An analysis of the difference between expected and actual UAAL is shown in Exhibit 8a.

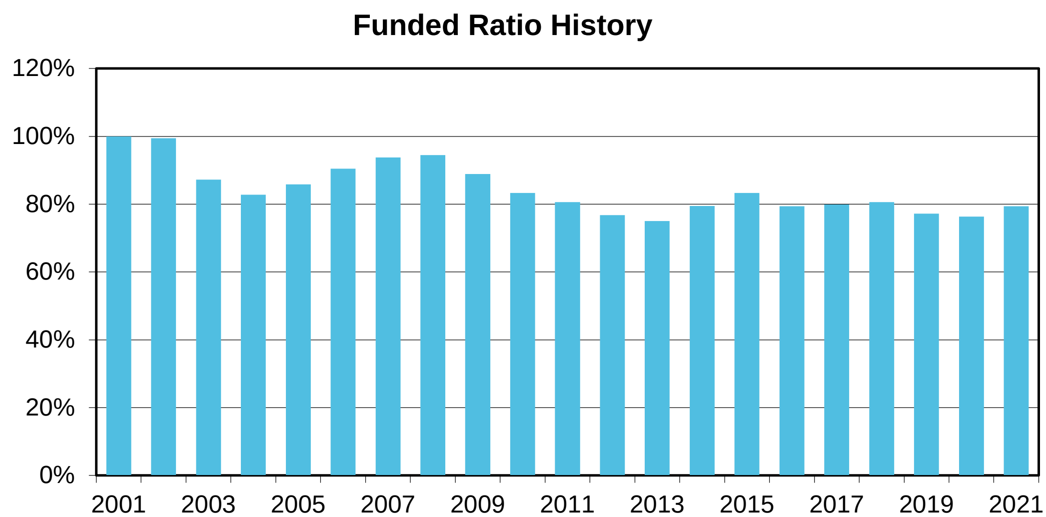
Funding Progress

One measure of the funding adequacy of the system is the Funded Ratio, which compares the Valuation Assets (the actuarial value of assets net of certain non-valuation reserves) to the Actuarial Accrued Liability (AAL). The

Funded Ratio shown in this valuation is appropriate for assessing the future contributions needed. Other calculations may be necessary for other purposes, such as assessing the sufficiency of current system assets to satisfy the estimated cost of settling the system's accrued benefit obligations.

As shown in the graph that follows, the Funded Ratio was 94.5% as of June 30, 2008, but decreased steadily over the five-year period following the economic downturn to a low of 75.0% as of June 30, 2013 as asset losses were gradually recognized. The Funded Ratio has increased slightly since that time, although this increase has been slow as the actuarial assumptions have been strengthened over the period, thereby increasing the AAL and offsetting some of the increase in the Funded Ratio from other sources.

A historical perspective of the Funded Ratio is shown in the following chart.



Assets

On June 30, 2021, the market value of the fund (including non-valuation reserves) was $73.0 billion. The actuarial value of assets was $65.6 billion, split between $0.7 billion of Non-Valuation Assets and $64.9 billion of Valuation Assets. The actuarial value of assets is approximately 90% of the market value of assets.

On a market-value basis, for the fiscal year ended June 30, 2021, LACERA earned 25.2% net of investment expenses, as reported by LACERA in the June 30, 2021 Annual Comprehensive Financial Report (ACFR). The market value of assets is used in calculating the actuarial value of assets. Under the actuarial asset method, investment gains and losses are recognized (or smoothed in) over a five-year period. Due to the recognition of current and deferred net asset gains, the return on the actuarial valuation of assets is 10.4% net of investment and administrative expenses, and is higher than the assumed return for the prior year of 7.0%.

Valuation Assets are used in the calculation of the UAAL contribution rate and Funded Ratio. Valuation Assets are equal to the actuarial value of assets less certain non-valuation reserves. The Valuation Assets of $64.9 billion are equal to 79.3% of the $81.9 billion AAL.

The non-valuation reserves are set aside for obligations or contingencies and are excluded from the assets used in the funding valuation. They are not used to fund the retirement benefits unless explicitly stated. As of June 30, 2021, the non-valuation reserves include only the Contingency Reserve, which is equal to 1% of the market value of assets, or $730 million. Note that this Contingency Reserve is different than the Contingency Reserve amount determined by LACERA for accounting purposes and included in the ACFR.

Under LACERA's Funding Policy, the reserve value for STAR benefits is included in the Valuation Assets; however, the liability for any STAR benefits that may be granted in the future is not included in the valuation. Note that if the STAR reserve of $614 million was excluded from the Valuation Assets, the UAAL would increase by this amount. Under this hypothetical scenario, the calculated employer contribution rate for the fiscal year beginning July 1, 2022 would increase by 0.49% of payroll, and the Funded Ratio would decrease by 0.8% to 78.5%.

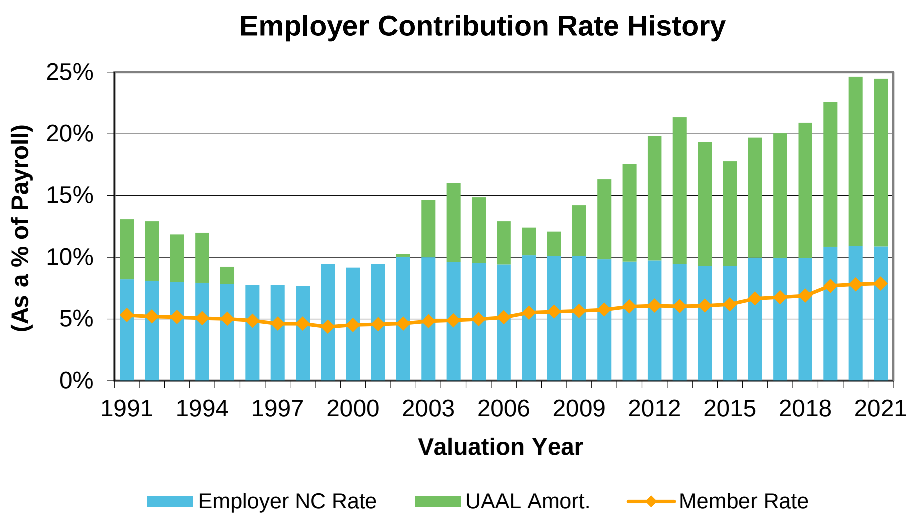
Future Impact of Recognition of Deferred Gains/Losses

The smoothing method is currently deferring $7.4 billion in net asset gains. As the currently deferred gains and losses are recognized over upcoming valuations, it is projected there will be fluctuations in the calculated employer contribution rate.

The potential future impact of the recognition of these deferred gains and losses on the projected employer contribution rate is included in the graph on page 3.

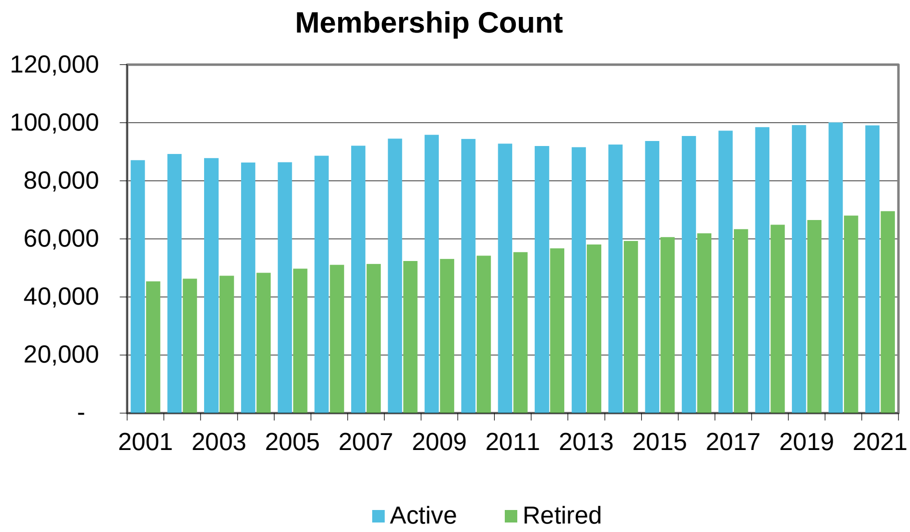
Employer Contribution Rate History

Based on the results of the valuation, the calculated employer contribution rate should decrease for the fiscal year beginning in 2022 to a rate of 24.46% of pay. A historical perspective of the employer contribution rates is shown in the following chart.

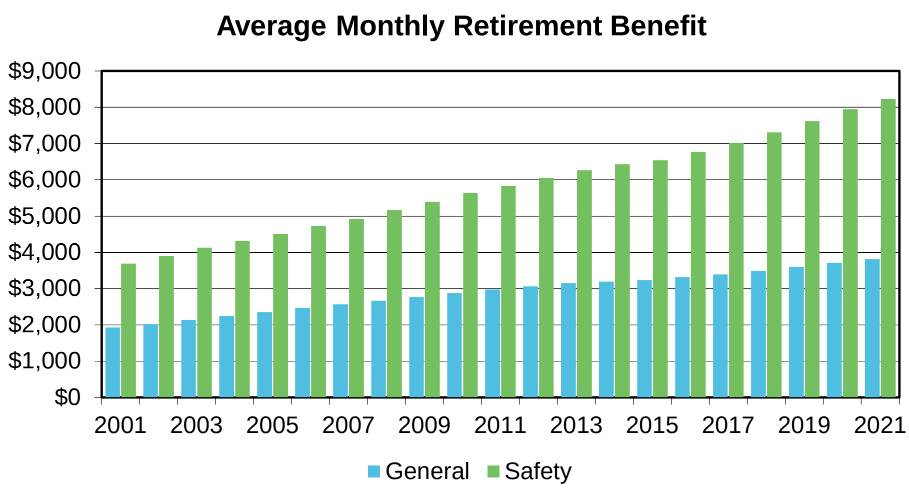


Member Information

Active payroll has increased while active membership has decreased since 2020. As of June 30, 2021, the annualized payroll is $9.1 billion for 99,101 active members. This reflects a 4.0% increase in average member pay and a 1.0% decrease in the number of active members.



Retired member counts and average retirement benefit amounts continue to increase steadily. For 2021, there were 69,497 retired members and beneficiaries with an average benefit of $4,679 per month. This represents a 2.2% increase in count and a 3.0% increase in the average monthly benefit.



The charts show that over the last 20 years the number of retired members has grown faster than the number of active members, and the average monthly benefit of retired members and beneficiaries has roughly doubled. This is typical of a maturing retirement system. The increasing number of retirees (relative to active members) and average monthly benefit is a key driver of the negative cashflows experienced over the last several years, and that are projected to continue growing. Cashflow history and projections are shown and described in more detail in Section 8.

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, 2020	**100,108**	**16,168**	**48,628**	**10,105**	**9,279**	**184,288**
New Members	4,069	143	18		831	5,061
Status Change:						
to Active	94	(94)				-
to Inactive	(1,719)	1,719				-
to Service Retirement	(2,783)	(443)	3,226			-
to Disabled Retirement	(264)	(11)	(266)	541		-
Refunds	(220)	(258)				(478)
Terminated non-vested	(12)					(12)
Benefits Expired			(21)		(8)	(29)
Deaths	(172)	(36)	(1,819)	(333)	(684)	(3,044)
As of June 30, 2021	**99,101**	**17,188**	**49,766**	**10,313**	**9,418**	**185,786**

Note: Inactive Members include non-vested former members who have not taken a refund of their contributions.

Sensitivity to Investment Return Assumption

The valuation results are projections based on the actuarial assumptions. Actual experience will differ from these assumptions, either increasing or decreasing the ultimate cost. Of the assumptions, the investment return generally has the biggest impact. The following table provides a simple analysis on how the short-term costs are affected by the investment return assumption. Note that the long-term cost of the Plan will be largely driven by actual investment returns and other experience; the assumptions used in the valuation impact the timing of the contributions over the long term.

	Investment Return Assumption		
	Current 7.00%	+0.5% 7.50%	-0.5% 6.50%
Employer Contribution Rate	24.46%	19.66%	29.49%
Change		-4.80%	5.03%
Funded Ratio	79.3%	84.3%	74.4%
Change		5.0%	-4.9%

Risk Discussion

Additional risks to the Plan are described in more detail in Section 9: Risk Disclosure. Some key points that can be seen in this report are:

- **Maturity**: As previously discussed, LACERA continues to mature as a system. One example of the impact of this maturity is that the employer contribution rate is becoming more sensitive to investment gains or losses and other experience. This sensitivity is measured by the asset and liability volatility ratios discussed in Section 9.
- **Risk Factors**: We believe investment returns are the greatest potential risk to future valuation results of LACERA. As shown in the reversion-to-the-mean example above, investment returns have a significant impact on employer contribution rates and Funded Ratios. One way to measure the potential impact is using the Asset Volatility Ratio (AVR), which is a measure of the level of assets to payroll. LACERA's AVR of 8.0 implies that a 10% investment gain or loss relative to the assumed 7% investment return (that is, an investment return of -3% or +17%) will result in a 5.7% of pay increase (or decrease) in the employer contribution rate (after investment gains or losses are smoothed in).
- **Variation**: Although we believe the actuarial assumptions provide a reasonable estimate of future experience, one thing is certain: future results will vary from those projected by the actuarial assumptions, either better or worse. One way to assess the potential future variation is to look at the past. The Funding Progress and Employer Contribution Rate History subsections above provide a historical perspective of LACERA's Funded Ratios and the employer contribution rate. These both show noticeable variation, both up and down, over the last 20 years.

Summary Valuation Results

Exhibit 1 on the following page presents a summary of key valuation elements as of June 30, 2021 and June 30, 2020, and shows the relative change over the past year. More detail on each of these elements can be found in the following sections and exhibits of this report.

Exhibit 1
Summary of Significant Valuation Results

	June 30, 2021	June 30, 2020	Percentage Change
Total Membership			
A. Active Members	99,101	100,108	(1.0)%
B. Retired Members & Beneficiaries	69,497	68,012	2.2%
C. Vested Former Members[1]	17,188	16,168	6.3%
D. Total	185,786	184,288	0.8%
Pay Rate as of valuation date			
A. Annual Total ($millions)	$ 9,080	$ 8,819	3.0%
B. Monthly Average per Active Member	7,635	7,341	4.0%
Average Monthly Benefit Paid to Current Retirees and Beneficiaries			
A. Service Retirement	4,577	4,469	2.4%
B. Disability Retirement	6,440	6,141	4.9%
C. Surviving Spouse and Dependents	3,289	3,176	3.6%
D. Total	4,679	4,541	3.0%
Actuarial Accrued Liability ($millions)			
A. Active Members	35,124	33,775	4.0%
B. Retired Members	45,397	43,239	5.0%
C. Vested Former Members	1,377	1,261	9.2%
D. Total	81,898	78,275	4.6%
Assets			
A. Market Value of Fund ($millions)	73,012	58,510	24.8%
B. Actuarial Value ($millions)			
1. Valuation Reserves	64,909	59,763	8.6%
2. Non-valuation Reserves	730	585	24.8%
C. Annual Investment Return			
1. Market Basis (Net Return)	25.2%	1.8%	n/a
2. Valuation (Actuarial) Basis	10.4%	5.8%	n/a
Unfunded Actuarial Accrued Liability ($ millions)	$ 16,989	$ 18,512	(8.2)%
Employer contribution rate for all plans combined as a percent of total payroll			
A. Gross Normal Cost	18.75%	18.69%	0.3%
B. Member Contributions[2]	(7.87)%	(7.80)%	0.9%
C. Employer Normal Cost	10.88%	10.89%	(0.1)%
D. UAAL Amortization	13.58%	14.85%	(8.6)%
E. Calculated Contribution Rate	24.46%	25.74%	(5.0)%
F. Deferred Recognition of new assumptions	-	(1.10)%	n/a
G. Employer Contribution Rate with phase-in	24.46%	24.64%	(0.7)%
Funded Ratio	79.3%	76.3%	3.9%
Results Based on Market Value (Informational Purposes Only)			
Calculated Contribution Rate	18.57%	26.15%	(29.0)%
Funded Ratio (excluding non-valuation reserves)	88.3%	74.0%	19.3%

1. Includes non-vested former members with contributions on deposit.
2. Includes non-contributory members. The average rate for contributory plans increased from 9.13% to 9.16%.

2. Scope of the Report

This report presents the actuarial valuation of the Los Angeles County Employees Retirement Association as of June 30, 2021. This valuation was requested by the Board of Investments. Section 31453 of the County Employees Retirement Law of 1937 (the CERL) requires an actuarial valuation to be performed at least every three years for the purpose of setting contribution rates. The 2021 valuation meets this requirement. Under LACERA's Funding Policy, annual valuations determine the employer contribution rates each year. Member contribution rates for all plans except General Plan G and Safety Plan C are set in years in which relevant actuarial assumptions are altered. For members of General Plan G and Safety Plan C, member contribution rates are recalculated each year, based on one-half of the Plan's normal cost rate.

A summary of the findings resulting from this valuation is presented in the previous section. Section 3 describes the assets and investment experience of the Plan. The assets and investment income are presented in Exhibits 2-4. Exhibit 5 develops the actuarial value of assets as of June 30, 2021. Exhibit 6 develops the Valuation Assets used for funding benefits.

Section 4 describes the benefit obligations of LACERA. Exhibit 7 is the Actuarial Balance Sheet and Exhibit 8a analyzes the change in UAAL. Exhibit 8b shows a history of these changes.

Section 5 discusses the member contribution rates.

Section 6 discusses the employer contributions rates.

Section 7 discloses supplemental information for use in the Annual Comprehensive Financial Report (ACFR). Milliman provides LACERA financial reporting information relevant to GASB Statements No. 67 and 68 in separate reports.

Section 8 shows the estimated cash flow of the Plan, including a projection of both contributions and benefit payments.

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 on June 30, 2021.
Appendix C	Schedules of valuation data classified by various categories of plan members.
Appendix D	Member contribution rates by plan.
Appendix E	Historical information.
Appendix F	A glossary of actuarial terms used in this report.

3. Assets

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2021. On that date, the assets available for the payment of retirement benefits are appraised. These assets are compared with the actuarial liabilities (both accrued and future) for current members, which are generally 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.

This section of the report looks at the assets used for funding purposes. In the next section, the actuarial liabilities will be discussed. Section 6 reviews the process for determining required contributions based on the relationship between the valuation assets and the actuarial liabilities.

A historical summary of the Plan's assets is presented below (dollar amounts in billions).

		Actuarial Value		
	Market Value of Total Assets	Non-Valuation Reserves	Valuation Assets	Total Fund Return (%)(1)
2012	$ 38.3	$ 0.9	$ 39.0	0.0
2013	41.8	0.4	39.9	11.9
2014	47.7	0.5	43.7	16.5
2015	48.8	0.5	47.3	4.1
2016	47.8	0.5	49.4	0.8
2017	52.7	0.5	52.2	12.7
2018	56.3	0.6	55.2	9.0
2019	58.3	0.6	57.6	6.4
2020	58.5	0.6	59.8	1.8
2021	73.0	0.7	64.9	25.2

1. As reported in the Investment Section of LACERA's ACFR for the fiscal year ended June 30, 2021. All returns are shown net of investment expenses and calculated on a time-weighted basis.

On June 30, 2021, the total market value of the fund, less current liabilities, was $73.0 billion. The actuarial value of the fund was determined to be $65.6 billion, including the non-valuation reserves. The average total fund return for the last 10 years is 8.6% net of fees, as reported by LACERA.

Financial Exhibits

Exhibit 2 presents a Statement of Fiduciary Net Position and Exhibit 3 presents a Statement of Changes in Fiduciary Net Position. Exhibit 4 describes the allocation of LACERA's assets by the various reserve values determined for accounting purposes as disclosed in the audited financial statements.

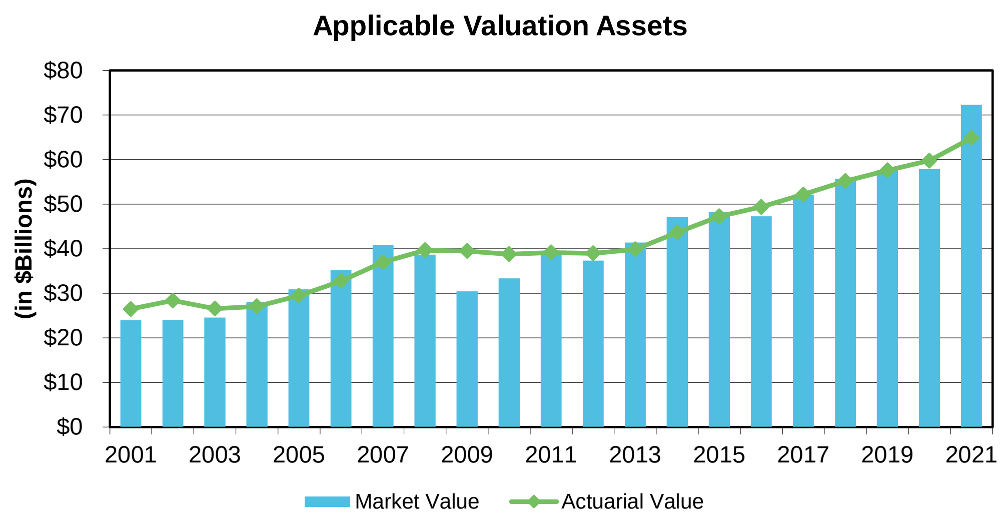
Exhibits 2-4 are taken directly from data furnished to us by LACERA in its annual financial report. We have accepted these tables for use in this report without audit, but we have reviewed them both for the prior year and the current year for reasonableness and consistency with previous reports.

Actuarial Asset Method

The actuarial asset method projects the expected market value of assets based on the prior year's market value of assets, the actual cash flow of contributions and benefit payments, and the assumed investment rate of return. For the previous year, the assumed rate of return was 7.0%, net of all expenses. The difference between the actual market value and the expected market value is recognized evenly (also referred to as "smoothing") over a five-year period.

Actuarial Value of Assets

The development of the June 30, 2021 actuarial value of assets is shown in Exhibit 5. Note the smoothing process is deferring past investment gains and losses, and is currently in a net actuarial gain position. The result is an actuarial value of assets that is less than the June 30, 2021 market value by $7.4 billion. The following graph shows a historical comparison of the actuarial and market assets used for valuation purposes.



Funding Policy

Under the LACERA's Retirement Benefit Funding Policy, the following is the allocation of actuarial assets. A Funded Ratio equal to 100% is the Funding Goal. Note that although the allocation of assets used in the actuarial valuation is similar to the process LACERA uses for accounting purposes, there are some differences, including the earnings considered for interest crediting purposes.

For funding purposes and for setting employer contributions rates, recognized earnings for a plan year is the recognized investment income as determined by the actuarial asset method and includes both unrealized income and net realized income, together with the prior balance in the Contingency Reserve. The allocation of recognized earnings is performed once a year as of the Valuation Date in the following order of priority:

Priority 1: Allocate to the Member Reserve so the Actuarial Asset allocation to that Reserve equals the accounting value for that Reserve on the Valuation Date.

Priority 2: Allocate to the Advanced Employer Contributions Reserve so the Actuarial Asset allocation to that Reserve equals the accounting value for that Reserve on the Valuation Date.

Priority 3: Allocate to the Employer Reserve so the Actuarial Asset allocation to that reserve equals the accounting value for that Reserve on the Valuation Date.

Priority 4: Allocate to the County Contribution Credit Reserve so the Actuarial Asset allocation to that reserve equals the accounting value for that Reserve on the Valuation Date. Note: This Reserve is not a Valuation Reserve.

Priority 5: Allocate to the Employer Reserve so the total amounts allocated equal one-year's interest at the assumed interest rate used in the actuarial valuation as of the preceding Valuation Date to the extent there are positive recognized earnings to allocate.

Priority 6: Allocate to the Contingency Reserve an amount equal to 1% of the Market Value of Assets as of the Valuation Date to the extent there are positive recognized earnings to allocate.

Priority 7: Allocate to the Employer Reserve an amount, if necessary, when combined with other Valuation Reserves, to provide 100% funding of the AAL as of the Valuation Date to reach the Funding Goal. In the event there are negative recognized earnings, allocate the entire amount.

Priority 8: The Board may consider additional actions as permitted under the County Employee Retirement Law (CERL) using funds in excess of the amount needed to meet the Funding Goal for funding discretionary benefits. "Excess Earnings" as defined in the County Employees Retirement Law (CERL) may be appropriated upon reaching the Funding Goal; however, the Board may consider adjustment to the employer's contributions only upon satisfying California Government Code Section 7522.52(b).

Valuation Assets

Valuation Assets are the actuarial value of the fund, less the value of any Non-Valuation Reserves. Non-Valuation Reserves include Contingency Reserves and other reserves that have been set aside for current liabilities and special benefits to be funded outside of the actuarially determined contribution rates. The Contingency Reserve is set at a minimum of 1.0% of the market value of the total assets.

The Funding Policy allows the STAR Reserve to be allocated to the Valuation Assets (subject to periodic review), if needed. The June 30, 2021 STAR Reserve accounting value of $614 million was included in Valuation Assets and used to determine the employer contribution rates for the fiscal year beginning July 1, 2022. Although the STAR Reserve is included in the 2021 Valuation Assets, there is no liability included in this valuation for STAR benefits that may be granted in the future.

The Non-Valuation Reserves shown in Exhibit 6 for funding purposes are not the same as those shown in the audited financial statements and in Exhibit 4.

Exhibit 2
Statement of Fiduciary Net Position
As of June 30, 2021 and June 30, 2020

	2021	2020
Assets		
Cash and Short-Term Investments	$ 3,034,716,419	$ 2,668,514,883
Cash Collateral on Loaned Securities	1,198,528,379	1,177,374,278
Receivables		
Contributions Receivable	114,101,681	101,730,406
Accounts Receivable - Sale of Investments	439,841,239	697,420,087
Accrued Interest and Dividends	169,925,118	133,935,398
Accounts Receivable - Other	109,138,958	7,586,880
Total Receivables	833,006,996	940,672,771
Investments at Fair Value		
Equity	29,705,842,700	23,332,239,318
Fixed Income	21,077,313,430	18,778,182,107
Private Equity	11,471,947,142	7,141,780,830
Real Estate	5,294,150,081	5,128,770,609
Hedge Funds	2,748,464,892	2,193,437,377
Total Investments	70,297,718,245	56,574,410,240
Total Assets	**75,363,970,038**	**61,360,972,171**
Liabilities		
Accounts Payable - Purchase of Investments	1,055,062,733	1,598,943,189
Retiree Payroll and Other Payables	1,550,257	1,176,761
Accrued Expenses	50,275,900	34,887,345
Tax Withholding Payable	40,144,308	38,002,636
Obligations under Securities Lending Program	1,198,528,379	1,177,374,278
Accounts Payable - Other	6,382,744	180,051
Total Liabilities	**2,351,944,321**	**2,850,564,261**
Fiduciary Net Position Restricted For Pension Benefits	**$ 73,012,025,718**	**$ 58,510,407,911**

Exhibit 3
Statement of Changes in Fiduciary Net Position
For the Fiscal Years Ended June 30, 2021 and 2020

	2021	2020
Additions		
Contributions		
Employer	$ 2,012,877,282	$ 1,800,137,447
Member[1]	760,993,626	659,295,961
Total Contributions	2,773,870,909	2,459,433,409
Investment Income		
From Investing Activities:		
Net Appreciation/(Depreciation) in Fair Value of Investments	9,981,327,917	(4,256,243,407)
Investment Income/(Loss)	5,915,583,546	5,906,599,371
Total Investing Activity Income	15,896,911,462	1,650,355,964
Less Expenses From Investing Activities	(271,751,482)	(209,320,451)
Net Investing Activity Income	15,625,159,981	1,441,035,513
From Securities Lending Activities:		
Securities Lending Income	5,071,951	15,987,146
Less Expenses From Securities Lending Activities:		
Borrower Rebates	869,192	(10,030,889)
Management Fees	(1,186,215)	(1,115,182)
Total Expenses from Securities Lending Activities	(317,023)	(11,146,071)
Net Securities Lending Income	4,754,928	4,841,076
Total Net Investment Income	15,629,914,908	1,445,876,588
Miscellaneous	2,927,574	2,382,427
Total Additions	18,406,713,391	3,907,692,424
Deductions		
Retiree Payroll	3,785,607,812	3,578,878,907
Administrative Expenses	76,369,711	72,054,032
Investment Expenses	14,216,047	13,329,577
Refunds	24,512,008	25,231,451
Lump Sum Death Benefits	4,142,050	2,230,036
Miscellaneous	247,956	397,076
Total Deductions	3,905,095,584	3,692,121,078
Net Increase/(Decrease)	14,501,617,807	215,571,346
Fiduciary Net Position Restricted For Pension Benefits		
Beginning of Year	58,510,407,911	58,294,836,565
End of Year	**$ 73,012,025,718**	**$ 58,510,407,911**

1. Member contributions include employer pick-up contributions.

Exhibit 4
Allocation of Assets by Accounting Reserve Amounts

(Dollars in Thousands)

	June 30, 2021	June 30, 2020
1. Member Reserves		
a. Active Members	$ 24,646,373	$ 23,481,576
b. Unclaimed Deposits	-	-
c. Total Member Reserves	24,646,373	23,481,576
2. Employer Reserves		
a. Actual Employer Contributions	29,026,898	25,818,509
b. Advanced Employer Contributions	-	-
c. Total Employer Contributions	29,026,898	25,818,509
3. County Contribution Credit Reserve	-	-
4. STAR Reserve	614,011	614,011
5. Contingency Reserve	147,104	-
6. Total Reserves at Book Value	54,434,386	49,914,096
7. Unrealized Investment Portfolio Appreciation	18,577,640	8,596,312
8. **Total Reserves at Fair Value**	**$ 73,012,026**	**$ 58,510,408**

Note: These amounts were determined by LACERA for accounting purposes and are reported in the ACFR for the fiscal year ended June 30, 2021.

Exhibit 5
Five-Year Smoothing of Gains and Losses on Market Value

(Dollars in Thousands)

June 30, 2021 Valuation

Plan Year Ending	Contributions	Benefit Payments	Expected Market Value	Actual Market Value	Phase-Out of Gain / (Loss)				
6/30/2021	$ 2,773,871	$ 3,814,262	$ 61,529,948	$ 73,012,026	80.00%	x	$ 11,482,078	=	$ 9,185,662
6/30/2020	2,459,433	3,606,340	61,189,106	58,510,408	60.00%	x	(2,678,698)	=	(1,607,219)
6/30/2019	2,303,566	3,407,155	59,238,837	58,294,837	40.00%	x	(944,000)	=	(377,600)
6/30/2018	2,116,085	3,203,375	55,441,551	56,299,982	20.00%	x	858,431	=	171,686
6/30/2017	1,857,938	3,029,633	50,102,154	52,743,651	0.00%	x	2,641,497	=	0
							(a) Total Phase-Out of Gain / (Loss)	=	$ 7,372,529
							(b) Total Market Value of Assets	=	$ 73,012,026
							(c) Total Actuarial Value of Assets [(b) - (a)]	=	**$ 65,639,497**

Total Actuarial Value of Assets = Total Market Value of Assets less the Total Phase-Out amount
Phase-Out amounts will be recognized in future years.

Projected Recognition of Actuarial Asset Gains / (Losses) in Future Valuations

	2022 Val	2023 Val	2024 Val	2025 Val	Total
Amount to be Recognized	$ 1,743,562	$ 1,571,876	$ 1,760,676	$ 2,296,415	$ 7,372,529

Exhibit 6
Allocation of Valuation and Non-Valuation Assets

(Dollars in Thousands)

	June 30, 2021	June 30, 2020
1. Total Market Value of Assets	$ 75,363,970	$ 61,360,972
2. Current Liabilities	2,351,944	2,850,564
3. Net Assets Held in Trust for Pension Benefits	73,012,026	58,510,408
4. Market Stabilization Reserve(1)	7,372,529	(1,837,687)
5. Actuarial Value of Fund Assets	65,639,497	60,348,095
6. Non-Valuation Reserves(2)		
a. Unclaimed Deposits	-	-
b. Contingency Reserve	730,120	585,104
c. Advanced Employer Contributions	-	-
d. County Contribution Credit Reserve	-	-
e. Reserve for STAR Program	-	-
f. Total	730,120	585,104
7. Valuation Assets(2)		
a. Member Reserves	24,646,373	23,481,576
b. Employer Reserves for Funding Purposes	40,263,004	36,281,415
c. Total	64,909,377	59,762,991

1. The Market Stabilization Reserve represents the difference between the Market Value of the fund less Current Liabilities, and the Actuarial Value of the fund as determined in Exhibit 5.

2. The values used for funding purposes for all reserves are based on the Board's Funding Policy. Amounts used for funding purposes may differ from those reported in the audited financial statements as shown in Exhibit 4.

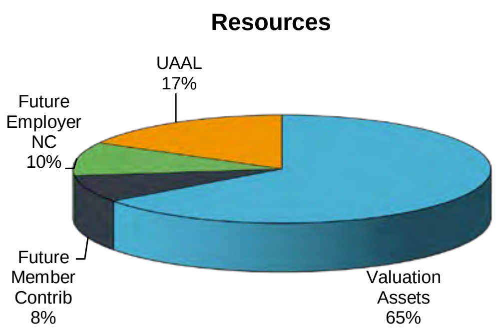
4. Actuarial Liabilities

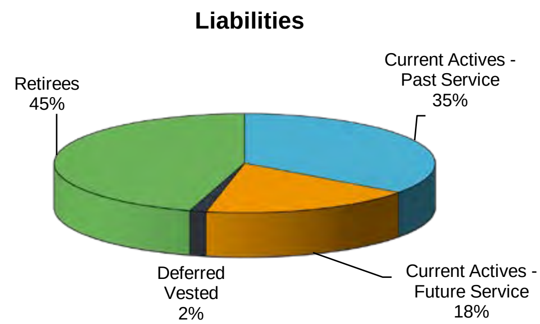
In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of LACERA's assets as of the valuation date, June 30, 2021. In this section, the discussion will focus on the commitments of LACERA for retirement benefits, which are referred to as its actuarial liabilities.

Actuarial Balance Sheet – Liabilities

The first step in the valuation process is to compare the total resources of LACERA with the present value of all future benefits (liabilities) for all plans. Resources include Valuation Assets and 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 pie charts below.

The AAL is the total of these liabilities less expected future Normal Cost contributions. The 2021 actuarial valuation indicates that LACERA's Valuation Assets are less than its AAL.





The difference between the Valuation Assets and the liabilities is the amount that needs to be funded by future member and employer contributions. Both the current and future assets (contributions) are included on the actuarial balance sheet and compared to the liabilities. The difference between these two values is the UAAL.

Exhibit 7 contains an analysis of the present value of future benefits for inactive members (both retired and vested former members) and active members. The analysis is given by class of membership, by plan and by type of benefit. Note that for purposes of this exhibit the Valuation Assets are shown allocated by plan in proportion to each plan's reserves (employer and member).

Liabilities are the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes measures of both benefits already earned and future benefits to be earned. For all members, active and inactive, the value extends over the rest of their lives and for the lives of any surviving beneficiaries.

The actuarial assumptions used to determine the liabilities are based on the results of the 2019 Investigation of Experience Report. New assumptions were most recently adopted by the Board effective with the June 30, 2019 actuarial valuation. See Appendix A of this report for details.

All liabilities reflect the benefits effective through June 30, 2021. This includes permanent STAR COLAs that have been adopted through the valuation date, but does not include the value of any STAR benefits that may be granted in the future.

Exhibit 7
Actuarial Balance Sheet – June 30, 2021

(Dollars in Millions)

	General Plan A	General Plan B	General Plan C	General Plan D	General Plan E	General Plan G	Safety Plan A	Safety Plan B	Safety Plan C	All Plans
LIABILITIES										
Present Value of Benefits - Inactives										
- Retirees and Beneficiaries	$ 10,731	$ 475	$ 289	$ 10,976	$ 4,852	$ 26	$ 6,859	$ 11,176	$ 13	$ 45,397
- Vested Former	5	1	1	671	488	64	0	141	6	1,377
- Inactive Total	10,736	476	290	11,647	5,340	90	6,859	11,317	19	46,774
Present Value of Benefits - Actives										
- Service Retirement	80	22	26	22,135	6,329	6,765	5	8,747	1,610	45,719
- Transfer Service (prior LACERA plan)	0	0	0	242	415	9	0	13	0	679
- Disability Retirement	1	0	0	924	N/A	490	0	3,230	875	5,520
- Death	1	0	0	378	N/A	153	0	73	28	633
- Termination	0	0	0	164	75	378	0	39	83	739
- Active Total	82	22	26	23,843	6,819	7,795	5	12,102	2,596	53,290
Total Actuarial Liabilities	**$ 10,818**	**$ 498**	**$ 316**	**$ 35,490**	**$ 12,159**	**$ 7,885**	**$ 6,864**	**$ 23,419**	**$ 2,615**	**$ 100,064**
ASSETS										
Valuation Assets	(4,503)	343	275	32,580	15,089	3,442	(2,565)	19,511	737	64,909
PV Future Member Contributions	1	0	0	2,816	N/A	3,149	0	1,024	1,121	8,111
PV Future Employer Normal Cost Contributions	2	1	1	3,233	1,073	2,842	0	1,865	1,038	10,055
UAAL or (Surplus Funding)	15,318	154	40	(3,139)	(4,003)	(1,548)	9,429	1,019	(281)	16,989
Total Current and Future Assets	**$ 10,818**	**$ 498**	**$ 316**	**$ 35,490**	**$ 12,159**	**$ 7,885**	**$ 6,864**	**$ 23,419**	**$ 2,615**	**$ 100,064**

Actuarial Balance Sheet – Assets

For the purpose of the Actuarial Balance Sheet, LACERA's assets 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.

Actuarial Cost Method

The Actuarial Balance sheet determines the amount of future contributions that are needed, but the method used to determine when those future contributions will be made in future years is called the "actuarial cost method." For this valuation, the entry age actuarial cost method has been used. Under this method, the contributions required to meet the difference between current assets and current actuarial liabilities are allocated each year between two elements:

- A normal cost amount; and
- An amount to amortize the UAAL (Unfunded Actuarial Accrued Liability). Note that the UAAL may be negative (representing current assets greater than current actuarial liabilities).

The two items described above – the Normal Cost and UAAL – are the keys to understanding the actuarial cost method.

Normal Cost

The Normal Cost is the theoretical contribution rate that will meet the ongoing costs of a group of average new employees. Suppose that a group of new employees was covered under a separate fund from which all benefits and to which all contributions and associated investment returns were paid. Under the entry age actuarial cost method, the Normal Cost contribution rate maintains the funding of benefits as a level percentage of pay. If experience follows the actuarial assumptions precisely, the fund would be completely liquidated when the last payment to the last survivor of the group is made.

By applying the Normal Cost contribution rate to the present value of salaries expected to be paid in the future, we determine the present value of future Normal Cost contributions. Future contributions are expected to be made by both the members and the employer. The member contribution rates are determined based upon requirements established in the CERL and the actuarial assumptions. Based on these member contribution rates, we determine the present value of future member contributions. We subtract that value from the total future Normal Cost contributions expected, based on the entry age cost method. The remaining difference is the employer portion of the future Normal Cost contributions.

Actuarial Accrued Liability

The difference between the present value of all future obligations and the present value of the future Normal Cost contributions is referred to as the Actuarial Accrued Liability (AAL). The AAL is calculated and then compared to the value of assets available to fund benefits. The difference is referred to as the UAAL. The results for all LACERA plans in aggregate are summarized below:

(Dollars in millions)	2021	2020	Percent Change
A. Actuarial present value of all future benefits for contributing members, former contributing members, and their survivors	$ 100,064	$ 95,946	4.3%
B. Actuarial present value of total future normal costs for current members	18,166	17,671	2.8%
C. Actuarial accrued liability [A-B]	81,898	78,275	4.6%
D. Valuation Assets	64,909	59,763	8.6%
E. UAAL or (Surplus Funding) [C-D]	16,989	18,512	-8.2%
F. Funded Ratio [D/C]	79.3%	76.3%	3.9%

Unfunded Actuarial Accrued Liability

The portion allocated to service already rendered or accrued is called the AAL. The difference between the AAL and the Valuation Assets is called the Unfunded AAL (UAAL). If a UAAL amount exists, it usually results from prior years' benefit or assumption changes and the net effect of accumulated gains and losses. If the employer had always contributed the current Normal Cost, and if there were no prior benefit or assumption changes, and if actual experience exactly matched the actuarial assumptions, then the present value of all future Normal Cost contributions would be sufficient to fund all benefits and there would be no UAAL.

Exhibit 7 shows how the UAAL was derived for each level of plan benefits. In the Actuarial Balance sheet, the total actuarial liability for all future benefits must be equal to the current and future assets.

The Actuarial Balance Sheet for each plan, as well as its UAAL, is based on an estimated allocation of the total LACERA Valuation Assets, as previously shown in Exhibit 7. The allocation is based on the relative value of each plan's employer and member reserves as reported to us by LACERA. These allocations are shown for illustrative purposes only, as the UAAL contribution rates are paid by the employer based on the valuation results in aggregate.

Funding Adequacy

A key consideration in determining the adequacy of the funding of LACERA is how the UAAL is being funded. Under LACERA's Funding Policy, a new UAAL "layer" is established each year when the Funded Ratio is less than 100% or greater than or equal to 120%. Effective with the June 30, 2019 valuation, all new UAAL layers are amortized over 20-year periods.

If future experience is significantly more favorable than expected based on the actuarial assumptions, then LACERA's UAAL may be eliminated. Conversely, if experience is less favorable, a larger UAAL will develop.

Analysis of Change in Unfunded Actuarial Accrued Liability

The UAAL, at any date after establishment of a retirement plan, is affected by any actuarial gains (decreases in UAAL) or losses (increases in UAAL) arising when the actual experience of the retirement plan varies from the experience anticipated by the actuarial assumptions. To the extent actual experience, as it develops, differs from that expected according to the assumptions used, so will the emerging costs differ from the estimated costs.

The 2021 actuarial valuation reflects a decrease in the UAAL of approximately $1.5 billion since the prior year. The effect of the gains and losses on the UAAL is shown in Exhibit 8a. A summary of these factors is:

- Investment Returns: Returns on market assets were 25.2% (net of investment expenses) compared to the assumed return of 7.0%. This, combined with recognitions of gains and losses from prior periods, resulted in an actuarial asset gain of $2.0 billion.
- Active Member Experience (non salary): This includes gains and losses from termination, service retirement, disability retirement, and death different than assumed. This resulted in an actuarial loss of $77 million.
- Salary Increases: Individual salaries for continuing active members increased at a rate greater than the valuation assumption. This resulted in an actuarial loss of $484 million.
- Actual CPI versus Assumption: The actual CPI increase was lower than assumed. This resulted in COLA increases less than the assumption, which generated an actuarial gain of $73 million.
- Mortality Experience: An actuarial loss due to mortality generally indicates that retired members are living longer than the current assumption predicts. Similarly, an actuarial gain on mortality indicates that retired members are not living as long as predicted. This year, there was an actuarial gain of $96 million due to mortality experience for retirees and beneficiaries.
- Other Experience: Examples of this are gains and losses from retirement and mortality experience of inactive members, reciprocity, and transfers between plans. These factors combined resulted in an actuarial gain of $47 million.

Change in Unfunded Actuarial Accrued Liability – History

Exhibit 8b shows the sources of change in the UAAL over the past five valuations. The single biggest source of annual change in most years, when there are no changes in the assumptions, is the return on investments being either greater than or less than the assumption.

Exhibit 8a
Analysis of Change in Unfunded Actuarial Accrued Liability

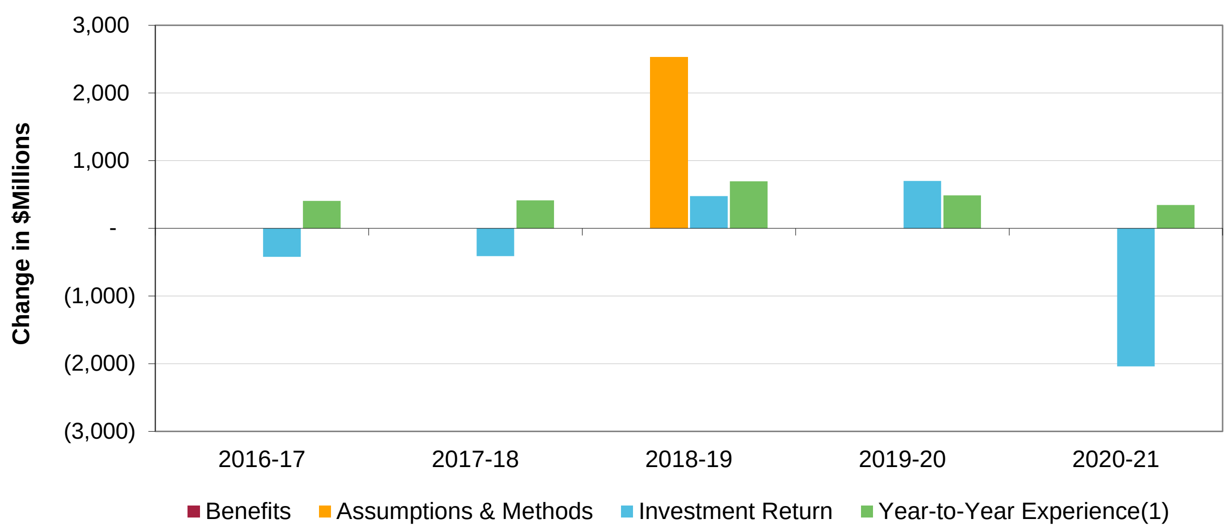
(Dollars in Millions)

			Amount	As a Percent of June 30, 2021 Actuarial Accrued Liability
Unfunded Actuarial Accrued Liability - June 30, 2020			**$ 18,512**	**22.60%**
Interest Accrued			1,311	1.60%
Benefits Accrued (Normal Cost)			1,634	2.00%
Contributions				
Employer - Cash	$	(2,013)		-2.46%
Employer - Contribution Credit		-		0.00%
Member		(761)		-0.93%
Total			(2,774)	-3.39%
Expected Unfunded Actuarial Accrued Liability - June 30, 2021			**$ 18,683**	**22.81%**
Sources of Change:				
Increase in UAAL due to New Assumptions			-	0.00%
Asset (Gains) and Losses				
(Gain) / Loss due to Investment Income			(2,039)	-2.49%
Liability (Gains) and Losses				
Active Member Experience (non salary)	$	77		0.09%
Salary Increases Greater than Expected		484		0.59%
CPI Less than Expected		(73)		-0.09%
Mortality Experience		(96)		-0.12%
All Other Experience		(47)		-0.06%
Total			345	0.42%
Total Changes			**$ (1,694)**	-2.07%
Unfunded Actuarial Accrued Liability - June 30, 2021			**$ 16,989**	**20.74%**

Exhibit 8b
History of Changes in Unfunded Actuarial Accrued Liability

(Dollars in Millions)

	2016-17	2017-18	2018-19	2019-20	2020-21	2016-21
Prior Valuation UAAL	**$ 12,841**	**$ 13,145**	**$ 13,294**	**$ 17,018**	**$ 18,512**	**$ 12,841**
Increase in UAAL due to:						
Expected Increase / (Decrease)	320	146	25	306	171	968
Asset (Gains) and Losses	(421)	(411)	477	701	(2,039)	(1,693)
Changes in Benefits	-	-	-	-	-	-
Changes in Assumptions	-	-	2,528	-	-	2,528
Changes in Methods	-	-	-	-	-	-
Salary Increases	277	223	486	388	484	1,858
CPI Increases	(139)	45	44	43	(73)	(80)
Mortality Experience	(51)	(20)	(6)	1	(96)	(172)
All Other Experience	318	166	170	55	30	739
Total Increase / (Decrease)	**304**	**149**	**3,724**	**1,494**	**(1,523)**	**4,148**
Valuation UAAL	**$ 13,145**	**$ 13,294**	**$ 17,018**	**$ 18,512**	**$ 16,989**	**$ 16,989**
Funded Ratio	**79.9%**	**80.6%**	**77.2%**	**76.3%**	**79.3%**	**79.3%**



1. Year-to-Year Experience includes changes due to Salary, CPI, Mortality and Other Experience.

5. Member Contributions

Normal Contributions for non-PEPRA Plans

Member contributions are of two types: Normal contributions and cost-of-living contributions.

Normal contributions for each of the legacy plans (all plans except General Plan G and Safety Plan C) are defined in the following sections of the CERL:

Plan	CERL Reference	Formula
General A	31621.3	1/240th of FAC at age 55
General B	31621.1	1/120th of FAC at age 55
General C	31621	1/120th of FAC at age 60
General D	31621	1/120th of FAC at age 60
General E	N/A	Plan E is non-contributory
Safety A	31639.5	1/200th of FAC at age 50
Safety B	31639.25	1/100th of FAC at age 50

Note: FAC = Final Average Compensation

Normal member contributions are determined using the Entry Age Normal Funding 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 on service retirement.

Since new assumptions were not adopted for the 2021 valuation, we are not recommending changes to the member contribution rates for General Plans A to D and Safety Plans A and B. Member contributions are shown in Appendix D. A sample of these recommended member contribution rates is shown in Exhibit 9.

Member contribution rates for General Plan G and Safety Plan C are discussed below.

Cost-of-Living Contributions for Legacy Plans

The determination of the member cost-of-living (COLA) contributions is based on Section 31873 of the CERL. This section requires that the cost of the COLA benefit be shared equally between members and the employer. Unlike the member normal contributions, these rates are based on the actuarial cost of the benefits and reflect all assumptions used in the valuation of liabilities.

Since new assumptions were not adopted for the 2021 valuation we are not recommending changes in the member cost-of-living contribution rates. The recommended cost-of-living contribution rates, expressed as a percentage of the normal member contribution rates, are as follows:

Plan	COLA %
General A	84.46%
General B	25.90%
General C	26.81%
General D	25.94%
General E	0.00%
Safety A	87.15%
Safety B	33.03%

The relative magnitude of these amounts reflects the differences in the normal contribution rates for each plan and the different cost-of-living benefits offered by the different plans. The rate for Plan E is 0.00% since it is non-contributory.

A sample of the current member contribution rates (normal plus cost-of-living) can be found in Exhibit 9.

Full disclosure of the member rates showing both the normal and the total (normal plus cost-of-living) contribution rates can be found in Appendix D.

Member Contribution Rates for General Plan G and Safety Plan C (PEPRA Plans)

Members of the two plans developed in compliance with the California Public Employees' Pension Reform Act of 2013 (PEPRA) contribute a flat rate (i.e., does not vary by entry age) based on whether they are in the General or Safety plan. This rate is set equal to one-half of the total Normal Cost rate. We are recommending changes to the member contribution rates for these plans, as shown below, to reflect the Plan's Normal Cost rates for the 2021 valuation.

	General Plan G	Safety Plan C
All Ages: Recommended	**9.08%**	**14.33%**
All Ages: Current	9.10%	14.42%
Ratio (Recommended / Current)	99.8%	99.4%

Note that the member contribution rates for these plans are further split for purposes of this report into a “Normal” and “Cost of Living” component. The cost-of-living component for these members, as shown in Exhibit 9 on the following page, represents one-half of the cost of the COLA for these plans.

Average Member Rates

The average member contribution rate for only those active members in contributory plans at June 30, 2021 is 9.16% of covered payroll, compared to 7.87% of covered payroll for all active members including non-contributory members. The 7.87% offsets the gross normal cost to yield the employer normal cost rate. Note that covered payroll does not include pay for PEPRA plan members that is above the PEPRA compensation limit.

Exhibit 9
Sample Member Contribution Rates

	Entry Age	Recommended Rates (Based on 2021 Valuation) Normal	Cost of Living	Total as a % of Pay	Current Rate (Total)	Ratio (New / Current)
General Members						
Plan A	25	3.24%	2.74%	5.98%	5.98%	100.0%
	35	3.99%	3.37%	7.36%	7.36%	100.0%
	45	4.83%	4.08%	8.91%	8.91%	100.0%
	55	5.13%	4.33%	9.46%	9.46%	100.0%
Plan B	25	6.47%	1.68%	8.15%	8.15%	100.0%
	35	7.98%	2.07%	10.05%	10.05%	100.0%
	45	9.66%	2.50%	12.16%	12.16%	100.0%
	55	10.25%	2.65%	12.90%	12.90%	100.0%
Plan C	25	5.52%	1.48%	7.00%	7.00%	100.0%
	35	6.80%	1.82%	8.62%	8.62%	100.0%
	45	8.33%	2.23%	10.56%	10.56%	100.0%
	55	9.68%	2.60%	12.28%	12.28%	100.0%
Plan D	25	5.52%	1.43%	6.95%	6.95%	100.0%
	35	6.80%	1.76%	8.56%	8.56%	100.0%
	45	8.33%	2.16%	10.49%	10.49%	100.0%
	55	9.68%	2.51%	12.19%	12.19%	100.0%
Plan G	All Ages	7.33%	1.75%	9.08%	9.10%	99.8%
Safety Members						
Plan A	25	4.74%	4.13%	8.87%	8.87%	100.0%
	35	5.63%	4.91%	10.54%	10.54%	100.0%
	45	6.70%	5.84%	12.54%	12.54%	100.0%
	55	6.70%	5.84%	12.54%	12.54%	100.0%
Plan B	25	9.48%	3.13%	12.61%	12.61%	100.0%
	35	11.27%	3.72%	14.99%	14.99%	100.0%
	45	13.40%	4.43%	17.83%	17.83%	100.0%
	55	13.40%	4.43%	17.83%	17.83%	100.0%
Plan C	All Ages	11.11%	3.22%	14.33%	14.42%	99.4%

Note: A portion of some of the member contribution rates is paid for (“picked up”) by the employer and is not considered part of the member’s contribution account for refund purposes. Such contributions are referred to as the surcharge amount and are subject to change each year. The rates shown in the table above are prior to any surcharge payments.

6. Employer Contributions

Calculated Employer Contribution Rate

Contributions to LACERA 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 10 illustrates the Normal Cost Contribution Rates by type of benefit and for each plan based on this valuation. A comparison with last year is also shown.

Under the Funding Policy, the total contribution rate is set equal to the Normal Cost contribution rate plus a payment by the employer towards the UAAL. The calculation of the UAAL contribution rate is shown in Exhibit 12. A portion of the Normal Cost contribution is funded by member contributions. The remainder is paid for by the employer.

The total calculated employer contribution rates for each plan, along with a comparison to the prior year's calculated rates, can be found in Exhibit 11. These results are expressed as a percentage of payroll and annual contribution dollars. Note that LACERA's UAAL contribution rate is not determined separately for each plan but is funded evenly as a percentage of pay over salaries for all members.

For the fiscal year beginning in 2022, the total calculated employer contribution rate decreases to 24.46% from the current fiscal year rate of 24.64%. This is equal to the aggregate employer Normal Cost contribution rate of 10.88% based on the 2021 valuation, plus the layered amortization payment of the UAAL, shown in Exhibit 12. Effective with the June 30, 2019 valuation, all new UAAL layers are amortized over a 20-year period, beginning with the date the contribution is first expected to be made.

(All values as a % of Payroll)

Employer Normal Cost Contribution Rate	10.88%
Layered Amortization of UAAL	13.58%
Calculated Employer Contribution Rate (before phase-in)	24.46%
Deferred Recognition of 2019 Assumption Changes	0.00%
Calculated Employer Contribution Rate (with phase-in)	24.46%

At the January 2020 meeting, the Board of Investments adopted a three-year phase-in of the impact of the change in employer contribution rate resulting from the new assumptions adopted effective June 30, 2019. For the fiscal year beginning July 1, 2022, the impact of the June 30, 2019 assumption changes is fully phased in.

The phase-in approach described above resulted in smaller employer contributions than would otherwise have been payable by employers in fiscal years beginning in 2020 and 2021. While the phase-in approach allowed a gradual increase in employer contribution rates rather than a large one-time increase in the fiscal year beginning in 2020, calculated employer contributions in the long term are larger to make LACERA whole for the smaller contributions (with interest) over that two year period. We estimate that the calculated employer contribution is approximately 0.23% of pay higher effective July 1, 2022 to account for the phase-in approach.

Exhibit 10
Calculated Normal Cost Contribution Rates – June 30, 2021

	General							Safety				Grand
	Plan A	Plan B	Plan C	Plan D	Plan E	Plan G	Total	Plan A	Plan B	Plan C	Total	Total
A. Normal Cost Contribution Rate												
Service Retirement	20.77%	18.30%	13.36%	14.66%	10.11%	15.53%	14.15%	24.55%	18.68%	17.21%	18.30%	14.92%
Disability Retirement	1.00%	1.03%	0.70%	1.15%	0.00%	1.29%	0.99%	11.57%	9.38%	10.16%	9.58%	2.62%
Death	0.27%	0.28%	0.24%	0.37%	0.00%	0.35%	0.30%	0.41%	0.35%	0.31%	0.34%	0.31%
Termination	0.45%	0.40%	0.40%	0.97%	0.61%	0.99%	0.91%	0.82%	0.83%	0.98%	0.87%	0.90%
Total	**22.49%**	**20.01%**	**14.70%**	**17.15%**	**10.72%**	**18.16%**	**16.35%**	**37.35%**	**29.24%**	**28.66%**	**29.09%**	**18.75%**
B. Member Contributions	(5.48)%	(9.46)%	(7.05)%	(7.98)%	0.00%	(9.08)%	(6.94)%	(11.00)%	(11.02)%	(14.33)%	(11.88)%	(7.87)%
C. Net Employer Normal Cost as of June 30, 2021 (A) - (B)	17.01%	10.55%	7.65%	9.17%	10.72%	9.08%	9.41%	26.35%	18.22%	14.33%	17.21%	10.88%
D. Net Employer Normal Cost as of June 30, 2020	17.13%	10.41%	7.64%	9.19%	10.74%	9.10%	9.45%	26.37%	17.85%	14.42%	17.07%	10.89%
E. Increase (Decrease) as a Percentage of Payroll (C) - (D)	(0.12)%	0.14%	0.01%	(0.02)%	(0.02)%	(0.02)%	(0.04)%	(0.02)%	0.37%	(0.09)%	0.14%	(0.01)%
F. Estimated Payroll for fiscal year beginning July 1, 2022[1]	$ 9	$ 2	$ 3	$ 3,899	$ 1,341	$ 2,343	$ 7,597	$ 0	$ 1,316	$ 462	$ 1,778	$ 9,375
G. Estimated Total Normal Cost Contribution in Dollars (A x F)[2]	$ 2	$ -	$ -	$ 669	$ 144	$ 425	$ 1,242	$ -	$ 385	$ 132	$ 517	$ 1,759

1. Estimated Payroll based upon annualized salary rate as of June 30, 2021 increased by 3.25% wage inflation. Dollar figures in millions.
2. The timing of the Normal Cost shown in this exhibit is spread over the entire year and corresponds to payroll timing.

Exhibit 11
Total Employer Contributions

	General							Safety				All
	Plan A	Plan B	Plan C	Plan D	Plan E	Plan G	Total	Plan A	Plan B	Plan C	Total	Plans
A. Net Employer Normal Cost												
1. Basic Benefits	13.46%	8.49%	6.15%	7.52%	8.86%	7.33%	7.70%	20.50%	14.43%	11.11%	13.57%	8.80%
2. Cost-of-Living Benefits	3.55%	2.06%	1.50%	1.65%	1.86%	1.75%	1.71%	5.85%	3.79%	3.22%	3.64%	2.08%
3. Total June 30, 2021	17.01%	10.55%	7.65%	9.17%	10.72%	9.08%	9.41%	26.35%	18.22%	14.33%	17.21%	10.88%
B. UAAL Contribution Rate	13.58%	13.58%	13.58%	13.58%	13.58%	13.58%	13.58%	13.58%	13.58%	13.58%	13.58%	13.58%
C. Total June 30, 2021 Contribution Rate (A) + (B)	**30.59%**	**24.13%**	**21.23%**	**22.75%**	**24.30%**	**22.66%**	**22.99%**	**39.93%**	**31.80%**	**27.91%**	**30.79%**	**24.46%**
D. Total June 30, 2020 Contribution Rate	30.88%	24.16%	21.39%	22.94%	24.49%	22.85%	23.20%	40.12%	31.60%	28.17%	30.82%	24.64%
E. Estimated Payroll for fiscal year beginning July 1, 2022[1]	$ 9	$ 2	$ 3	$ 3,899	$ 1,341	$ 2,343	$ 7,597	$ 0	$ 1,316	$ 462	$ 1,778	$ 9,375
F. Estimated Annual Contribution (C x E)	**$ 3**	**$ 1**	**$ 1**	**$ 887**	**$ 326**	**$ 531**	**$ 1,746**	**$ -**	**$ 418**	**$ 129**	**$ 547**	**$ 2,293**
G. Last Year's Estimated Annual Contribution	$ 3	$ 1	$ 1	$ 897	$ 336	$ 477	$ 1,713	$ -	$ 422	$ 109	$ 531	$ 2,244
H. Increase / (Decrease) in Annual Contribution	$ -	$ -	$ -	$ (10)	$ (10)	$ 54	$ 33	$ -	$ (4)	$ 20	$ 16	$ 49

1. Estimated Payroll based upon annualized salary rate as of June 30, 2021 increased by 3.25% wage inflation. Dollar figures in millions.

Exhibit 12
Unfunded Actuarial Accrued Liability Detail

(Dollars in Millions)

Unfunded Actuarial Accrued Liability - Amortization Detail							
Date Established	**Description**	**Balance as of June 30, 2021**	**Interest on Balance**	**Amort. Payment on June 30, 2022 (1)**	**Balance as of June 30, 2022 (2)**	**Remaining Period as of June 30, 2022 (5)**	**July 1, 2022 Amortization Payment**
June 30, 2009	Initial UAAL	$ 5,567.0	$ 389.7	$ 440.6	$ 5,516.1	17 Years	$ 433.4
June 30, 2010	(Gain) / Loss(3)	3,047.9	213.3	232.2	3,029.0	18 Years	228.4
June 30, 2011	(Gain) / Loss(3)	1,514.7	106.0	111.4	1,509.4	19 Years	109.6
June 30, 2012	(Gain) / Loss(3)	2,482.5	173.8	176.6	2,479.7	20 Years	173.7
June 30, 2013	(Gain) / Loss(3)	1,403.6	98.2	99.8	1,401.9	20 Years	98.2
June 30, 2014	(Gain) / Loss	(2,599.0)	(181.9)	(184.9)	(2,596.1)	20 Years	(181.9)
June 30, 2015	(Gain) / Loss	(2,030.5)	(142.1)	(144.4)	(2,028.2)	20 Years	(142.1)
June 30, 2016	(Gain) / Loss(3)	3,901.4	273.1	277.5	3,897.0	20 Years	273.0
June 30, 2017	(Gain) / Loss	(21.1)	(1.5)	(1.5)	(21.1)	20 Years	(1.5)
June 30, 2018	(Gain) / Loss	61.1	4.3	4.3	61.0	20 Years	4.3
June 30, 2019	(Gain) / Loss(3)	3,935.8	275.5	299.8	3,911.4	18 Years	294.9
June 30, 2020	(Gain) / Loss	1,461.8	102.3	107.5	1,456.6	19 Years	105.7
June 30, 2021	(Gain) / Loss	(1,736.0)	(121.5)	(107.6) (4)	(1,749.8)	20 Years	(122.6)
						Total Amortization Payment July 1, 2022:	$ 1,273.2
						Projected Payroll July 1, 2022:	$ 9,374.6
	UAAL as of June 30, 2021:	**$ 16,989.0**				**UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2022:**	**13.58%**

Explanatory Notes:

1. Amortization Payments are based on a fixed schedule that increases by the payroll assumption each year.
2. The assets and liabilities used in the calculation of the UAAL are as of June 30, 2021, whereas, the contribution rates are not effective until July 1, 2022. Therefore, the UAAL is adjusted to June 30, 2022 based on the actual contribution rate for the period.
3. (Gain) / Loss layers include impact of assumption changes in these years.
4. The amortization of UAAL does not begin until July 1, 2022; therefore, the UAAL amount is adjusted by one year to reflect the actual July 1, 2021 contribution rate.
5. Effective with the June 30, 2019 valuation, all new UAAL layers are amortized over a 20-year period, beginning with the date the contribution is first expected to be made.

7. Supplemental Information

Governmental Accounting Standards Board (GASB) Statement No. 67 sets out requirements for defined benefit pension plan reporting and disclosures. GASB Statement No. 68 sets out requirements for accounting by state and local government employers.

Milliman provides LACERA with results relevant to Statements No. 67 and 68 in separate stand-alone financial reporting valuation reports.

For informational purposes, we have provided the following exhibits in this report that LACERA may use in the audited financial statements:

Exhibit 13: Schedule of Funding Progress
Exhibit 14: Schedule of Employer Contributions
Exhibit 15: Solvency Test
Exhibit 16: Actuarial Analysis of Financial Experience
Exhibit 17: Retirants and Beneficiaries added to / removed from Retiree Payroll

Exhibit 13, Schedule of Funding Progress, compares actuarial assets and liabilities of the Plan, based on the actuarial funding method used.

Exhibit 14, Schedule of Employer Contributions, compares the employer contributions required based on the actuarial valuation with the employer contributions actually made. Information shown in this exhibit comes from LACERA's audited financial statements.

Exhibit 15 compares the Actuarial Value of Valuation Assets to the types of Actuarial Accrued Liabilities, applying them first to Active Member contributions, then to retirees and beneficiaries, and then the remaining amount to the Active Members benefits. This is referred to as the Solvency Test.

Exhibit 16 shows the changes in actual versus expected UAAL from year to year.

Exhibit 17 reconciles the retired members and beneficiaries who have been added to and removed from the retiree payroll.

Exhibit 13
Schedule of Funding Progress

(Dollars in Thousands)

Actuarial Valuation Date	(a) Actuarial Value of Valuation Assets	(b) Actuarial Accrued Liabilities	(b-a) Unfunded Actuarial Accrued Liabilities (UAAL)	(a/b) Funded Ratio	(c) Covered Payroll[1]	[(b-a)/c] UAAL as a Percentage of Covered Payroll
June 30, 2012[2]	$ 39,039,364	$ 50,809,425	$ 11,770,061	76.8%	$ 6,619,816	177.8%
June 30, 2013[2]	39,932,416	53,247,776	13,315,360	75.0%	6,595,902	201.9%
June 30, 2014	43,654,462	54,942,453	11,287,991	79.5%	6,672,228	169.2%
June 30, 2015	47,328,270	56,819,215	9,490,945	83.3%	6,948,738	136.6%
June 30, 2016[2]	49,357,847	62,199,214	12,841,367	79.4%	7,279,777	176.4%
June 30, 2017	52,166,307	65,310,803	13,144,496	79.9%	7,637,032	172.1%
June 30, 2018	55,233,108	68,527,354	13,294,246	80.6%	7,957,981	167.1%
June 30, 2019[2]	57,617,288	74,635,840	17,018,552	77.2%	8,370,050	203.3%
June 30, 2020	59,762,991	78,275,175	18,512,184	76.3%	8,724,151	212.2%
June 30, 2021	64,909,377	81,898,044	16,988,667	79.3%	9,062,051	187.5%

1. Covered Payroll includes compensation paid to all active employees on which contributions are calculated, as reported by LACERA. Covered Payroll differs from the Active Member Valuation Payroll shown in Table C-1, which is an annualized compensation of only those members who were active on the actuarial valuation date.

2. Assumption changes.

Exhibit 14
Schedule of Contributions from the Employer

(Dollars in Thousands)

Fiscal Year Ending	Actuarially Determined Employer Contribution	Actual Employer Contributions			Percentage of Actuarially Determined Contribution Contributed
		Cash Payment	Transfer from Reserve Accounts	Total	
June 30, 2012	$ 1,078,929	$ 1,078,929	$ -	$ 1,078,929	100%
June 30, 2013	1,172,014	723,195	448,819	1,172,014	100%
June 30, 2014	1,320,442	1,320,442	-	1,320,442	100%
June 30, 2015	1,494,975	1,494,975	-	1,494,975	100%
June 30, 2016	1,443,130	1,443,130	-	1,443,130	100%
June 30, 2017(1)	1,392,813	1,370,922	21,891	1,392,813	100%
June 30, 2018	1,564,284	1,564,284	-	1,564,284	100%
June 30, 2019	1,708,122	1,708,122	-	1,708,122	100%
June 30, 2020	1,800,137	1,800,137	-	1,800,137	100%
June 30, 2021	2,012,877	2,012,877	-	2,012,877	100%

1. The County Contribution Reserve was used to offset the contribution required from the Courts in the fiscal year ended June 30, 2017.

Exhibit 15
Solvency Test

(Dollars in Millions)

		Actuarial Accrued Liabilities for			Portion of Actuarial Accrued Liabilities Covered by Assets		
Actuarial Valuation Date	Actuarial Value of Valuation Assets	Active Member Contributions (A)	Retirees and Beneficiaries[1] (B)	Active Members (Employer Financed Portion) (C)	(A)	(B)	(C)
June 30, 2012	$ 39,039	$ 6,961	$ 29,118	$ 14,730	100%	100%	20%
June 30, 2013	39,932	7,837	30,980	14,430	100%	100%	8%
June 30, 2014	43,654	8,354	31,882	14,706	100%	100%	23%
June 30, 2015	47,328	8,805	32,734	15,280	100%	100%	38%
June 30, 2016	49,358	8,767	35,316	18,116	100%	100%	29%
June 30, 2017	52,166	9,482	37,077	18,752	100%	100%	30%
June 30, 2018	55,233	9,882	39,192	19,453	100%	100%	32%
June 30, 2019	57,617	10,210	42,235	22,190	100%	100%	23%
June 30, 2020	59,763	10,650	44,500	23,125	100%	100%	20%
June 30, 2021	64,909	11,115	46,774	24,009	100%	100%	29%

1. Includes vested and non-vested former members.

Notes:

For the purpose of this exhibit, valuation assets are allocated, in order, to active member contribution accounts (A), the Actuarial Accrued Liability for retirees and beneficiaries (B) and the employer financed portion of active member liabilities (C). Active member contributions are always assumed to be 100% funded. Assets are then allocated to the Actuarial Accrued Liability for retirees and beneficiaries until that category is 100% funded, and then any remaining valuation assets are allocated to the employer financed portion of active member liabilities. The employer's UAAL contributions are based on a percentage of active member salaries and those contributions are projected to eliminate any unfunded liability in that category over the scheduled amortization period.

Exhibit 16
Actuarial Analysis of Financial Experience

(Dollars in Millions)

	Valuation as of June 30						
	2015	2016	2017	2018	2019	2020	2021
Unfunded Actuarial Accrued Liability	$11,288	$9,491	$12,841	$13,145	$13,294	$17,018	$18,512
Expected Increase/(Decrease) from Prior Valuation	(54)	(102)	320	146	25	306	171
Salary Increases Greater/(Less) than Expected	79	162	277	223	486	388	484
CPI Greater/(Less) than Expected	(570)	(191)	(139)	45	44	43	(73)
Change in Assumptions	-	2,922	-	-	2,528	-	-
Asset Return Less/(Greater) than Expected	(1,263)	496	(421)	(411)	477	701	(2,039)
All Other Experience	11	63	267	146	164	56	(66)
Ending Unfunded Actuarial Accrued Liability	**$9,491**	**$12,841**	**$13,145**	**$13,294**	**$17,018**	**$18,512**	**$16,989**

Exhibit 17
Retirants and Beneficiaries added to and removed from Retiree Payroll

(Dollars in Thousands)

	Added to Rolls		Removed from Rolls		Rolls at End of Year			
Valuation Date	Member Count	Annual Allowance[1]	Member Count	Annual Allowance[1]	Member Count	Annual Allowance[1]	% Increase in Retiree Allowance	Average Annual Allowance
June 30, 2012	3,194	$ 193,865 [2]	(1,795)	$ (61,588)	56,770 [3]	$ 2,474,902	5.65%	$ 43.6
June 30, 2013	3,373	205,659 [2]	(2,057)	(69,494)	58,086 [3]	2,611,067	5.50%	45.0
June 30, 2014	3,128	172,743 [2]	(1,985)	(71,730)	59,229 [3]	2,712,080	3.87%	45.8
June 30, 2015	3,501	180,549 [2]	(2,124)	(80,028)	60,606 [3]	2,812,601	3.71%	46.4
June 30, 2016	3,479	220,632 [2]	(2,171)	(80,881)	61,914 [3]	2,952,352	4.97%	47.7
June 30, 2017	3,721	245,915 [2]	(2,311)	(89,624)	63,324 [3]	3,108,643	5.29%	49.1
June 30, 2018	3,826	276,118 [2]	(2,270)	(89,033)	64,880 [3]	3,295,728	6.02%	50.8
June 30, 2019	3,978	302,022 [2]	(2,351)	(97,840)	66,507 [3]	3,499,910	6.20%	52.6
June 30, 2020	3,930	311,206 [2]	(2,425)	(104,914)	68,012 [3]	3,706,202	5.89%	54.5
June 30, 2021	4,350	327,745 [2]	(2,865)	(132,185)	69,497 [3]	3,901,762	5.28%	56.1

1. Annual allowance is the monthly benefit allowance annualized for those members counted as of June 30.

2. Includes COLAs that occurred during the fiscal year and therefore were not included in the previous years' Annual Allowance totals.

3. For the actuarial valuation year, Member Count includes retirees who due to timing at year end, are not yet included in the total Retired Members count disclosed in Note A - Plan Description of LACERA's ACFR for the fiscal year ended June 30, 2021.

8. Cash Flow History and Projections

Exhibits 18a and 18b contain tables and graphs that illustrate both the cash flow history for the past 10 years and a projection on the valuation basis for the next 10 years.

Contributions include both employer and member contributions. Exhibit 18a shows that net cash outflow has gradually increased over the last five years. In future years, the cash flow is expected to become increasingly negative. This is a typical pattern for a mature retirement plan where it is expected that contributions will be less than benefits and that the plan will begin drawing on the fund that has been built up over prior years.

Note that the actual cash contributions do not reflect the transfers made between reserve funds, but only cash coming into the Plan. We are assuming no further transfers, only full cash contributions. In addition, LACERA will receive dividends and interest payments from its investments. These types of payments are not considered for this analysis, which focuses solely on comparing contributions with benefit payments and administrative expenses.

The projected cash flows include contributions, statutory benefits, and administrative expenses only. They are based on the actuarial assumptions as stated in Appendix A of this valuation report. The total employer contribution rate is assumed to be 24.64% for the first year and 24.46% for the second year; total employer contributions for the remainder of the period reflect the expected recognition of asset gains and losses currently being deferred. The aggregate member rate is assumed to stay at the calculated rate for June 30, 2021 of 7.87% of payroll. Expenses are based on the expenses for the year ended June 30, 2021, increased annually with the actuarial inflation assumption of 2.75%.

Any increases or reductions in future contribution rates will increase or decrease the net cash flow. The projected cash flows do not include:

- Projected STAR benefits that have not yet been granted. STAR benefits that were vested as of January 2021 are included.
- Projected benefits payable under certain insurance contracts for a group of retired members. These payments are netted against the total expected retiree benefits.

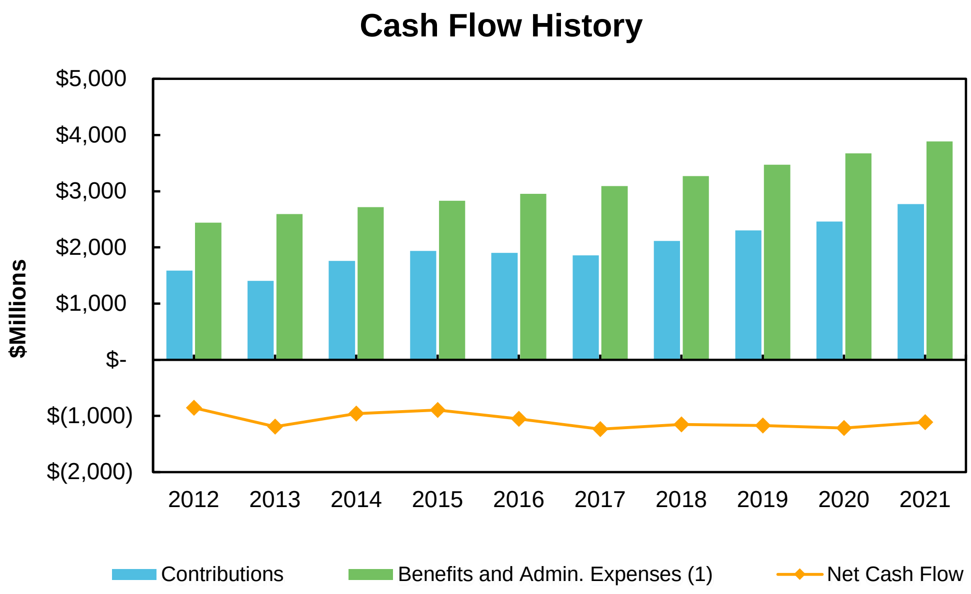
Exhibit 18a
Cash Flow History and Projections – Dollars

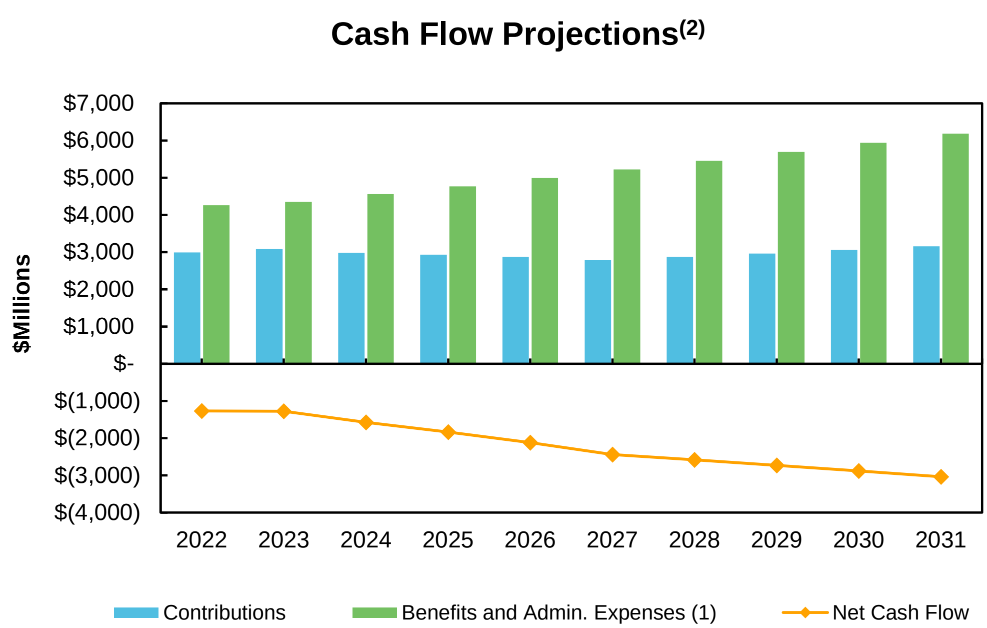
Plan Year Ending	Cash Flow History: Total Contributions	Cash Flow History: Benefits & Administrative Expenses[1]	Cash Flow History: Net Cash Flow
2012	$ 1,586	$ 2,439	$ (853)
2013	1,403	2,593	(1,190)
2014	1,759	2,719	(960)
2015	1,936	2,829	(893)
2016	1,902	2,954	(1,052)
2017	1,858	3,094	(1,236)
2018	2,116	3,268	(1,152)
2019	2,304	3,475	(1,171)
2020	2,459	3,676	(1,217)
2021	2,774	3,886	(1,112)

Plan Year Ending	Cash Flow Projections[2]: Total Contributions	Cash Flow Projections[2]: Benefits & Administrative Expenses[1]	Cash Flow Projections[2]: Net Cash Flow
2022	$ 2,993	$ 4,258	$ (1,266)
2023	3,080	4,351	(1,271)
2024	2,989	4,559	(1,570)
2025	2,937	4,771	(1,835)
2026	2,877	4,993	(2,116)
2027	2,785	5,222	(2,437)
2028	2,874	5,457	(2,583)
2029	2,966	5,697	(2,731)
2030	3,060	5,941	(2,881)
2031	3,157	6,190	(3,033)

1. Investment expenses are assumed to be covered by investment return.
2. Future contributions reflect the expected impact of asset gains and losses currently being deferred.

Exhibit 18b
Cash Flow History and Projections – Graphs





1. *Investment expenses are assumed to be covered by investment return.*
2. *Future contributions reflect the expected impact of asset gains and losses currently being deferred.*

9. Risk Discussion

Please refer to the Risk Assessment report dated June 28, 2021 for a detailed analysis of the main risks applicable to LACERA. That report includes detailed identification and assessment of risks.

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, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions) 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:

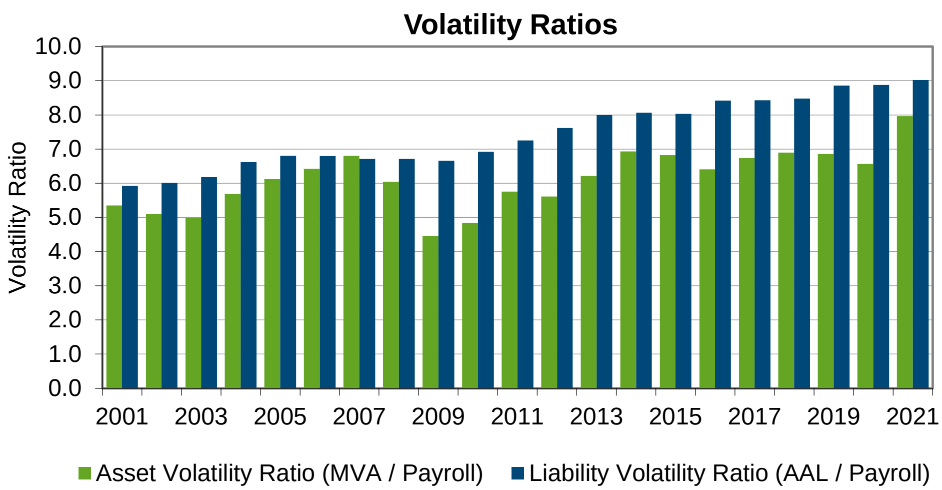
Disclosure Element	Description	Value
Gross Normal Cost $ [1]	Normal Cost allocated to valuation year, paid at mid-year.	$ 1,729.8
Statutory Contribution $ [1]	Expected Employer Contribution paid at mid-year.	$ 2,273.3
Asset Smoothing Ratio	Actuarial Value of Assets divided by Market Value of Assets	89.9%
Asset Volatility Ratio	Market Value of Assets divided by Payroll	8.0
Liability Volatility Ratio	Actuarial Accrued Liability divided by Payroll	9.0

1. Amounts shown in millions of dollars

This Section 9 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.

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 employer contribution rates (ECR) are more sensitive to changes in levels of assets or liabilities. Asset and Liability Volatility Ratios are shown below, and in Exhibit E-4.



As shown above, in the current valuation LACERA has an Asset Volatility Ratio of 8.0 and a Liability Volatility Ratio of 9.0. These ratios have increased over time as LACERA has matured. Specifically, due to the investment return of 25.2% in the fiscal year ended June 30, 2021, the assets have increased significantly more than the payroll, and therefore the Asset Volatility Ratio has increased from 6.6 to 8.0. This means that the ECR is more sensitive to changes in the level of assets now than it was just one year ago.

LACERA 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 ECR.

For LACERA, an 8.0 Asset Volatility Ratio means that a 10% investment gain or loss relative to the assumed 7.0% investment return assumption (that is, an investment return of -3.0% or of 17.0%) translates to a 5.7% of pay increase (or decrease) in the ECR, all other things being equal. Since LACERA 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.

The Liability Volatility Ratio measures the sensitivity of the ECR to changes in the level of liabilities, all else being equal. With a liability volatility ratio of 9.0 an increase (or decrease) in the investment return assumption of 0.5% translates to a decrease (or increase) in the ECR of approximately 4.9% of pay for LACERA.

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 ECR. The factors that can have the most significant impact on LACERA's valuation results are:

- Investment returns

  To the extent that actual investment returns differ from the assumed investment return, the Plan's future assets, ECR, 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, ECRs, and a lower funded status. Conversely, lower compensation increases than assumed will generally result in smaller retirement benefits, liabilities, ECRs, and a higher funded status.

- Payroll variation

  In the valuation, an assumption is made for the overall rate of payroll growth of LACERA from year-to-year. To the extent that the overall rate of payroll growth is greater than assumed, the ECR may decrease since the 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 experience is different than is assumed to occur, future liabilities, ECRs, 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 changed significantly. Additionally, changes may be recommended and discussed at each valuation if they are deemed to be appropriate at that time.

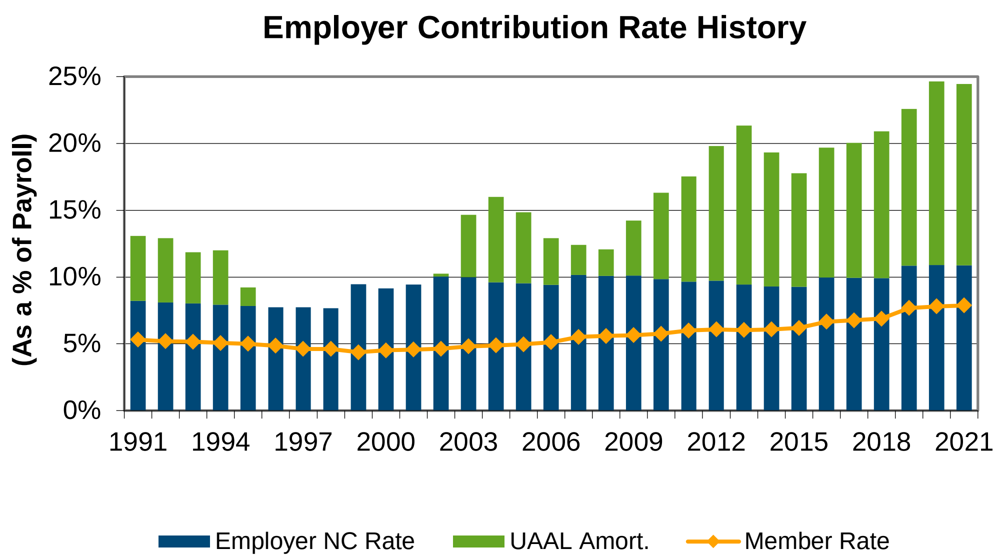
Discussion of Investment Return Risk

Of these factors, we believe the factor with the greatest potential risk to impact future valuation results for LACERA is future investment returns. For example, if actual returns fall short of the current assumption of 7.0% per year, this will cause an increase in the ECR and a decrease in the Funded Ratio, all other things being equal. Conversely, if actual returns exceed the current assumption of 7.0% per year, this will cause a decrease in the ECR and an increase in the Funded Ratio.

The magnitude of the increase or decrease in the ECR is affected by the maturity level, and specifically, the asset volatility ratio. LACERA 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 that changes in the investment markets can have a significant impact on the ECR.

Historical Variation in Employer Contribution Rate

One way to assess future risks is to look at historical measurements. The following graph shows how the ECR has varied over the last 30 years under various investment return and assumption environments.



Appendix A Actuarial Procedures and Assumptions

The actuarial procedures and assumptions used in this valuation are described in this section. The assumptions were reviewed and changed for the June 30, 2019 actuarial valuation as a result of the 2019 triennial Investigation of Experience Study.

The actuarial assumptions used in the valuations are intended to estimate the future experience of the members of LACERA and of LACERA 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 LACERA's benefits.

Table A-1 summarizes the assumptions. The mortality probabilities are taken from the sources listed. Tables A-2 and A-3 show how members are expected to leave retired status due to death.

Table A-4 presents the probability of refund of contributions upon termination of employment while vested. Table A-5 presents the expected annual percentage increase in salaries.

Tables A-6 to A-13 were developed from the experience as measured by the 2019 Investigation of Experience Study. These are the probability that a member will leave the System for various reasons.

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 between plans, entry age is based on original entry into the System.

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 original UAAL as of June 30, 2009 is amortized as a level percentage of the projected salaries of present and future members of LACERA over a closed 30-year period. As of the June 30, 2019 valuation, all amortization layers with periods greater than 22 years as of July 1, 2020 were amortized over a 22-year period. Future gains and losses are amortized over new closed 20-year periods, beginning with the date the contribution is first expected to be made. This is referred to as “layered” amortization.

For General Plan G and Safety Plan C, the normal cost rate is rounded up to the nearest 0.02%.

Records and Data

The data used in this valuation consists 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 LACERA and are accepted for valuation purposes without audit.

Replacement of Former 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 LACERA 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 or decline in the total number of active members is assumed.

Internal Revenue Code Section 415 Limit

The Internal Revenue Code Section 415 maximum benefit limitation is not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

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.

Employer Contributions

The employer contribution rate is set by the Board of Investments based on actuarial valuations.

Member Contributions

The member contribution rates of contributory legacy plans (all plans except General Plans E and G and Safety Plan C) vary by entry age 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 five-year smoothed method based on the difference between the expected market value and the actual market value of the assets as of the valuation date. The expected market value is the prior year's market value increased with the net increase in the cash flow of funds, all increased with interest during the past fiscal year at the expected investment return rate assumption. The five-year smoothing valuation basis for all assets was adopted effective June 30, 2009.

Investment Earnings and Expenses

The future investment earnings of the assets of LACERA are assumed to accrue at an annual rate of 7.00% compounded annually, net of both investment and administrative expenses. This rate was adopted June 30, 2019.

Postretirement Benefit Increases

Postretirement increases are assumed for the valuation in accordance with the benefits provided as described in Appendix B. These adjustments are assumed payable each year in the future as they are not greater than the expected increase in the Consumer Price Index of 2.75% per year. This rate was adopted June 30, 2016.

Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 7.00% compounded semi-annually for an annualized rate of 7.12%. This rate was adopted effective June 30, 2019.

Future Salaries

The rates of annual salary increase assumed for the purpose of the valuation are illustrated in Table A-5. In addition to increases in salary due to promotions and longevity, this scale includes an assumed 3.25% per annum rate of increase in the general wage level of the membership. These rates were adopted June 30, 2019.

Increases are assumed to occur mid-year (i.e., January 1st) and only apply to base salary, excluding megaflex compensation. The mid-year timing reflects that salary increases occur throughout the year, or on average mid-year.

For plans with a one-year final average compensation period, actual average annual compensation is used. For Plan E, Plan G and Safety Plan C, the monthly rate as of June of the valuation year was annualized. Due to irregular compensation payments now included as pensionable earnings, actual annual pay is preferred over annualizing a single monthly payment amount.

Social Security Wage Base

Plan E 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 3.25% per year. Note that statutory provisions describe exactly how to compute the offset for purposes of determining a member's offset amount at time of termination or retirement. This rate was adopted June 30, 2016.

Note also, that it is assumed all Plan E members born after 1950 have less than 10 years of Social Security-covered service and, therefore, do not have their benefit offset.

General Plan G and Safety Plan C members have their compensation limited to approximately 120% of the Social Security Wage Base. The limit for 2021 is $153,671 (after applying the 120% factor) and is projected to increase at the CPI rate of 2.75%. This rate of future increase was adopted effective June 30, 2016.

Retirement

Members in General Plans A-D may retire at age 50 with 10 years of service, or any age with 30 years of service, or age 70 regardless of the number of years of service. General Plan G members are eligible to retire at age 52 with 5 years of service, or age 70 regardless of the number of years of service. Non-contributory Plan E members may retire at age 55 with 10 years of service. Members of Safety Plans A and B may retire at age 50 with 10 years of service, or any age with 20 years of service. Safety Plan C members are eligible to retire at age 50 with 5 years of County service. Retirement probabilities vary by age and are shown by plan in Tables A-6 through A-13.

All general members who attain or have attained age 75 in active service and all safety members who attain or have attained age 65 in active service are assumed to retire immediately (except for Safety Plan C members who have not yet attained 5 years of service).

Vested former members are assumed to retire at the later of their current age and the assumed retirement age specified as follows:

Assumption for Deferred Commencement

Plan	Age at Commencement
GA	62
GB	62
GC	62
GD	59
GE	62
GG	57
SA	55
SB	50
SC	50

The assumptions regarding termination of employment, early retirement, and unreduced service retirement are treated as a single set of decrements in regard to a particular member. For example, a General Plan D member hired at age 30 has a probability of withdrawing from LACERA due to death, disability or other termination of employment until age 50. After age 50, the member can withdraw due to death, disability, or retirement. Thus, in no year during the member's projected employment would the member be eligible for both a probability of other termination of employment and a probability of retirement.

The retirement probabilities were adopted June 30, 2019.

Disability

The probabilities of disability used in the valuation are also illustrated in Tables A-6 through A-13. These probabilities were adopted June 30, 2019.

Postretirement Mortality – Other Than Disabled Members

The same postretirement mortality probabilities are used in the valuation for members retired for service and beneficiaries. These probabilities are illustrated in Table A-2. Current beneficiary mortality is assumed to be the same as for healthy members of the same sex. Future beneficiaries are assumed to be of the opposite sex and have the same mortality as General members. The amount-weighted Pub-2010 mortality tables are used.

Note that these assumptions include a projection for expected future mortality improvement. These probabilities were adopted June 30, 2019.

Males: General members: PubG-2010 Healthy Retiree Mortality Table for Males, with MP-2014 Ultimate Projection Scale.

Safety members: PubS-2010 Healthy Retiree Mortality Table for Males multiplied by 85%, with MP- 2014 Ultimate Projection Scale.

Females: General members: PubG-2010 Healthy Retiree Mortality Table for Females multiplied by 110%, with MP-2014 Ultimate Projection Scale.

Safety members: PubS-2010 Healthy Retiree Mortality Table for Females, with MP-2014 Ultimate Projection Scale.

Postretirement Mortality – Disabled Members

For members retired for disability, the mortality probabilities used in the valuation are illustrated in Table A-3. The amount-weighted Pub-2010 mortality tables are used.

Note that these assumptions include a projection for expected future mortality improvement. These probabilities were adopted June 30, 2019.

Males: General members: Average of PubG-2010 Healthy Retiree Mortality Table for Males and PubG-2010 Disabled Retiree Mortality Table for Males, both projected with MP-2014 Ultimate Projection Scale.

Safety members: PubS-2010 Healthy Retiree Mortality Table for Males, with MP-2014 Ultimate Projection Scale.

Females: General members: Average of PubG-2010 Healthy Retiree Mortality Table for Females and PubG-2010 Disabled Retiree Mortality Table for Females, both projected with MP-2014 Ultimate Projection Scale.

Safety members: PubS-2010 Healthy Retiree Mortality Table for Females, with MP-2014 Ultimate Projection Scale.

Mortality while in Active Status

For active members, the mortality probabilities used in the valuation are illustrated in Tables A-6 through A-13. The amount-weighted Pub-2010 mortality tables are used. These probabilities were adopted June 30, 2019.

Class	Gender	Proposed Table
General	Male	PubG-2010 (120%) Employee Male(1)
General	Female	PubG-2010 (130%) Employee Female(1)
Safety	Male	PubS-2010 (100%) Employee Male(1)
Safety	Female	PubS-2010 (100%) Employee Female(1)

1. *Projected using the MP-2014 Ultimate projection scale.*

Note that Safety members have an additional service-connected mortality probability of 0.01% per year.

Other Employment Terminations

Tables A-6 to A-13 show, for all ages, the probabilities assumed in this valuation for future termination from active service other than for death, disability, or retirement. These probabilities do not apply to members eligible for service retirement. These probabilities were adopted June 30, 2019.

Terminating employees may withdraw their contributions immediately upon termination of employment and forfeit the right to further benefits, or they may leave their contributions with LACERA. 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 LACERA or a reciprocal retirement system. All terminating members who are not eligible for vested benefits are assumed to withdraw their contributions immediately. It is assumed that all terminating members will not be rehired in the future.

Table A-4 gives the assumed probabilities that vested members will withdraw their contributions and elect a refund immediately upon termination and the probability that remaining members will elect a deferred vested benefit. All non-vested members are assumed to elect a refund and withdraw their contributions. These probabilities were adopted June 30, 2019.

Probability of Eligible Survivors

For members not currently in pay status, 77% of all males and 50% of all females are assumed to have eligible survivors (spouses or qualified domestic partners). Survivors are assumed to be four years younger than male members and two years older than female members. Survivors are assumed to be of the opposite gender 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.

Valuation of Vested Former Members

The deferred retirement benefit is calculated based on the member's final compensation and service at termination. The compensation amount is projected until the assumed retirement age for members who are assumed to be employed by a reciprocal agency. For members who are missing compensation data, Final Compensation is estimated as the average amount for all members who terminated during the same year and had a valid compensation amount. The greater of the present value of the calculated benefit and the employee's current contribution balance is valued for future deferred vested members.

Reciprocal Employment

16% of General and 35% of Safety current and future vested former members are assumed to work for a reciprocal employer.

Current vested reciprocal members are assumed to receive annual salary increases of 4.25%. Future reciprocal vested members are assumed to receive the same salary increases they would have received if they had stayed in active employment with LACERA and retired at the assumed retirement age.

Valuation of Annuity Purchases

Over 30 years ago, LACERA purchased single life annuities from two insurance companies for some retired members (currently less than 1% of the retired population). The total liability for these members is calculated and then offset by the expected value of the benefit to be paid by the insurance companies.

For affected members, the insurance companies are responsible for:

1. Straight life annuity payments
2. Statutory COLAs

LACERA is responsible for:

1. Benefit payments payable to any beneficiary
2. STAR COLAs

Member Contribution Rate Assumptions

The following assumptions summarize the procedures used to compute member contribution rates based on entry age:

In general, 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 35% / 65% blend of the male and female valuation mortality tables and projection scale, with a static projection to 2041. For Safety members, it is based on an 85% / 15% blend of the male and female annuity factors determined using the same mortality tables as used for service-retired members.

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 7.00%.

C. The Final Compensation is based on the salary paid in the year prior to attaining the retirement age.

D. Example: For a General Plan C Member who enters at age 59 or earlier, the Final Compensation at retirement (age 60) will be the monthly average of the annual salaries during age 59.

E. 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.

Table A-1
Summary of Valuation Assumptions as of June 30, 2021

I. Economic assumptions

A.	General wage increases	3.25%
B.	Investment earnings	7.00%
C.	Growth in membership	0.00%
D.	Postretirement benefit increases (varies by plan)	Plan COLA not greater than CPI assumption.
E.	CPI inflation assumption	2.75%

II. Demographic assumptions

A.	Salary increases due to service	Table A-5
B.	Retirement	Tables A-6 to A-13
C.	Disability	Tables A-6 to A-13
D.	Mortality during active employment	Tables A-6 to A-13
E.	Mortality for active members after termination and service retired members[1]	Table A-2

Class	Gender	
General	Male	PubG-2010 (100%) Healthy Retiree Male
General	Female	PubG-2010 (110%) Healthy Retiree Female
Safety	Male	PubS-2010 (85%) Healthy Retiree Male
Safety	Female	PubS-2010 (100%) Healthy Retiree Female

F. Mortality among disabled members[1] — Table A-3

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

G.	Mortality for beneficiaries[1] Basis – Beneficiaries are assumed to have the same mortality as a general member of the opposite gender who has taken a service retirement.	Table A-2
H.	Other terminations of employment	Tables A-6 to A-13
I.	Refund of contributions on vested termination	Table A-4

1. All mortality probabilities are projected using the MP-2014 Ultimate projection scale.

Table A-2
Mortality for Members Retired for Service[1]

Age	Safety Male	Safety Female	General Male	General Female
20	0.0520%	0.0210%	0.0740%	0.0380%
25	0.0470%	0.0260%	0.0560%	0.0260%
30	0.0520%	0.0350%	0.0720%	0.0440%
35	0.0590%	0.0470%	0.0940%	0.0680%
40	0.0750%	0.0640%	0.1320%	0.1060%
45	0.1037%	0.0870%	0.1960%	0.1650%
50	0.1632%	0.1490%	0.2980%	0.2442%
55	0.2601%	0.2580%	0.4310%	0.3146%
60	0.4318%	0.4460%	0.6150%	0.4224%
65	0.7489%	0.7700%	0.9130%	0.6743%
70	1.3328%	1.3290%	1.5260%	1.1693%
75	2.4021%	2.2950%	2.6710%	2.0713%
80	4.3376%	3.9620%	4.7740%	3.6960%
85	7.7648%	6.8420%	8.5910%	6.8255%
90	13.4810%	11.8150%	14.6720%	12.6357%

Age	All Groups
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 probabilities 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 probability for an 85-year old Safety male in fiscal year beginning in 2021 is 76.9521% calculated as follows:

Age 85 probability in 2021 = Age 85 probability in 2010 with 11 years improvement

= 7.7648% x (100.0% - 1.0%) ^ 11

= 6.9521%

Table A-3
Mortality for Members Retired for Disability[1]

Age	Safety Male	Safety Female	General Male	General Female
20	0.0610%	0.0210%	0.2430%	0.1340%
25	0.0550%	0.0260%	0.1670%	0.0940%
30	0.0610%	0.0350%	0.2130%	0.1485%
35	0.0700%	0.0470%	0.2760%	0.2315%
40	0.0880%	0.0640%	0.3885%	0.3625%
45	0.1220%	0.0870%	0.6015%	0.5675%
50	0.1920%	0.1490%	0.9515%	0.8525%
55	0.3060%	0.2580%	1.2725%	1.0140%
60	0.5080%	0.4460%	1.5590%	1.1700%
65	0.8810%	0.7700%	1.9785%	1.4345%
70	1.5680%	1.3290%	2.7135%	1.9625%
75	2.8260%	2.2950%	3.9315%	2.9430%
80	5.1030%	3.9620%	6.0610%	4.6835%
85	9.1350%	6.8420%	9.7030%	7.7680%
90	15.8600%	11.8150%	15.4625%	12.5760%

1. Mortality probabilities are those applicable for the fiscal year beginning in 2010. Annual projected improvements are assumed in the following years under the schedule shown on the preceding page.

Table A-4
Immediate Refund of Contributions upon Termination of Employment
(Excludes Plan E)

Years of Service	General	Safety
0	100%	100%
1	100%	100%
2	100%	100%
3	100%	100%
4	100%	100%
5	32%	30%
6	32%	30%
7	32%	30%
8	32%	28%
9	31%	26%
10	31%	24%
11	30%	22%
12	30%	20%
13	29%	18%
14	28%	16%
15	26%	14%
16	25%	12%
17	24%	10%
18	22%	9%
19	21%	8%
20	19%	7%
21	18%	6%
22	16%	5%
23	14%	4%
24	12%	3%
25	10%	2%
26	8%	2%
27	6%	2%
28	4%	2%
29	2%	2%
30 & Above	0%	0%

Table A-5
Annual Increase in Salary[(1)]

Years of Service	General	Safety
<1	6.00%	9.00%
1	5.25%	8.50%
2	4.75%	8.00%
3	4.10%	6.00%
4	3.50%	4.50%
5	3.00%	3.25%
6	2.50%	2.50%
7	2.00%	2.00%
8	1.60%	1.50%
9	1.30%	1.35%
10	1.15%	1.20%
11	1.00%	1.05%
12	0.85%	0.95%
13	0.75%	0.85%
14	0.70%	0.75%
15	0.65%	0.70%
16	0.60%	0.65%
17	0.55%	0.60%
18	0.50%	0.55%
19	0.45%	2.25%
20	0.40%	0.50%
21	0.35%	0.50%
22	0.30%	0.50%
23	0.25%	0.50%
24	0.25%	3.00%
25	0.25%	0.50%
26	0.25%	0.50%
27	0.25%	0.50%
28	0.25%	0.50%
29	0.25%	3.00%
30 & Above	0.25%	0.50%

1. The total expected increase in salary includes both merit (shown above) and the general wage increase assumption of 3.25% per annum increase. The total result is compounded rather than additive. For example, the total assumed increase for General members for service less than one year is 9.45%.

Appendix A Probabilities of Separation from Active Service
Tables A-6 to A-13

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 vested 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 of these represents the probability that a member will separate from service at each age due to the particular cause. For example, a probability 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 table represents the detailed probabilities needed for each LACERA plan by gender:

Table	A-6: General Plan A, B & C – Males	A-10: General Plan E – Males
	A-7: General Plan A, B & C – Females	A-11: General Plan E – Females
	A-8: General Plan D & G – Males	A-12: Safety Plan A, B & C – Males
	A-9: General Plan D & G – Females	A-13: Safety Plan A, B & C – Females

Table A-6
Probability of Separation from Active Service for General Members
Plans A, B & C – Male

Age	Service Retirement	Other Terminations	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00500	0.00010	0.00010	N/A	0.00043
19	0.00000	0.00500	0.00010	0.00010	N/A	0.00046
20	0.00000	0.00500	0.00010	0.00010	N/A	0.00044
21	0.00000	0.00500	0.00010	0.00010	N/A	0.00043
22	0.00000	0.00500	0.00010	0.00010	N/A	0.00040
23	0.00000	0.00500	0.00010	0.00010	N/A	0.00037
24	0.00000	0.00500	0.00010	0.00010	N/A	0.00035
25	0.00000	0.00500	0.00010	0.00010	N/A	0.00034
26	0.00000	0.00500	0.00010	0.00010	N/A	0.00036
27	0.00000	0.00500	0.00010	0.00010	N/A	0.00037
28	0.00000	0.00500	0.00010	0.00010	N/A	0.00040
29	0.00000	0.00500	0.00010	0.00010	N/A	0.00041
30	0.00000	0.00500	0.00010	0.00020	N/A	0.00043
31	0.00000	0.00500	0.00010	0.00020	N/A	0.00046
32	0.00000	0.00500	0.00010	0.00020	N/A	0.00048
33	0.00000	0.00500	0.00016	0.00020	N/A	0.00050
34	0.00000	0.00500	0.00022	0.00020	N/A	0.00053
35	0.00000	0.00500	0.00028	0.00020	N/A	0.00056
36	0.00000	0.00500	0.00034	0.00020	N/A	0.00060
37	0.00000	0.00500	0.00040	0.00020	N/A	0.00064
38	0.00000	0.00500	0.00048	0.00020	N/A	0.00068
39	0.00000	0.00500	0.00056	0.00020	N/A	0.00073
40	0.03000	0.00500	0.00064	0.00020	N/A	0.00079
41	0.03000	0.00500	0.00072	0.00020	N/A	0.00085
42	0.03000	0.00500	0.00080	0.00020	N/A	0.00092
43	0.03000	0.00500	0.00084	0.00024	N/A	0.00100
44	0.03000	0.00500	0.00088	0.00028	N/A	0.00108
45	0.03000	0.00500	0.00092	0.00032	N/A	0.00118
46	0.03000	0.00500	0.00096	0.00036	N/A	0.00128
47	0.03000	0.00500	0.00100	0.00040	N/A	0.00139
48	0.03000	0.00500	0.00104	0.00044	N/A	0.00152
49	0.03000	0.00500	0.00108	0.00048	N/A	0.00166
50	0.03000	0.00500	0.00112	0.00052	N/A	0.00179
51	0.03000	0.00500	0.00116	0.00056	N/A	0.00194
52	0.03000	0.00500	0.00120	0.00060	N/A	0.00210
53	0.03000	0.00500	0.00156	0.00064	N/A	0.00227
54	0.06000	0.00500	0.00192	0.00068	N/A	0.00244
55	0.10000	0.00500	0.00228	0.00072	N/A	0.00263
56	0.12000	0.00500	0.00264	0.00076	N/A	0.00283
57	0.17000	0.00500	0.00300	0.00080	N/A	0.00306
58	0.26000	0.00500	0.00330	0.00084	N/A	0.00330
59	0.26000	0.00500	0.00360	0.00088	N/A	0.00355
60	0.32000	0.00500	0.00390	0.00092	N/A	0.00383
61	0.32000	0.00500	0.00420	0.00096	N/A	0.00413
62	0.32000	0.00500	0.00450	0.00100	N/A	0.00445
63	0.32000	0.00500	0.00450	0.00104	N/A	0.00481
64	0.32000	0.00500	0.00450	0.00108	N/A	0.00520
65	0.32000	0.00500	0.00450	0.00112	N/A	0.00562
66	0.25000	0.00500	0.00450	0.00116	N/A	0.00607
67	0.24000	0.00500	0.00450	0.00120	N/A	0.00658
68	0.24000	0.00500	0.00450	0.00124	N/A	0.00713
69	0.24000	0.00500	0.00450	0.00128	N/A	0.00775
70	0.24000	0.00500	0.00450	0.00132	N/A	0.00844
71	0.24000	0.00500	0.00450	0.00136	N/A	0.00920
72	0.24000	0.00500	0.00450	0.00140	N/A	0.01004
73	0.24000	0.00500	0.00450	0.00144	N/A	0.01098
74	0.24000	0.00500	0.00450	0.00148	N/A	0.01201
75	1.00000	0.00000	0.00000	0.00000	N/A	0.01315

Table A-7
Probability of Separation from Active Service for General Members
Plans A, B & C – Female

Age	Service Retirement	Other Terminations	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00500	0.00015	0.00010	N/A	0.00017
19	0.00000	0.00500	0.00015	0.00010	N/A	0.00017
20	0.00000	0.00500	0.00015	0.00010	N/A	0.00017
21	0.00000	0.00500	0.00015	0.00010	N/A	0.00016
22	0.00000	0.00500	0.00015	0.00010	N/A	0.00014
23	0.00000	0.00500	0.00015	0.00010	N/A	0.00013
24	0.00000	0.00500	0.00015	0.00010	N/A	0.00012
25	0.00000	0.00500	0.00015	0.00010	N/A	0.00012
26	0.00000	0.00500	0.00015	0.00010	N/A	0.00013
27	0.00000	0.00500	0.00015	0.00010	N/A	0.00014
28	0.00000	0.00500	0.00015	0.00010	N/A	0.00016
29	0.00000	0.00500	0.00015	0.00010	N/A	0.00017
30	0.00000	0.00500	0.00015	0.00010	N/A	0.00020
31	0.00000	0.00500	0.00015	0.00010	N/A	0.00021
32	0.00000	0.00500	0.00015	0.00010	N/A	0.00023
33	0.00000	0.00500	0.00020	0.00010	N/A	0.00025
34	0.00000	0.00500	0.00025	0.00010	N/A	0.00027
35	0.00000	0.00500	0.00030	0.00010	N/A	0.00030
36	0.00000	0.00500	0.00035	0.00010	N/A	0.00033
37	0.00000	0.00500	0.00040	0.00010	N/A	0.00036
38	0.00000	0.00500	0.00042	0.00014	N/A	0.00039
39	0.00000	0.00500	0.00044	0.00018	N/A	0.00043
40	0.03000	0.00500	0.00046	0.00022	N/A	0.00047
41	0.03000	0.00500	0.00048	0.00026	N/A	0.00052
42	0.03000	0.00500	0.00050	0.00030	N/A	0.00056
43	0.03000	0.00500	0.00060	0.00032	N/A	0.00061
44	0.03000	0.00500	0.00070	0.00034	N/A	0.00066
45	0.03000	0.00500	0.00080	0.00036	N/A	0.00073
46	0.03000	0.00500	0.00090	0.00038	N/A	0.00079
47	0.03000	0.00500	0.00100	0.00040	N/A	0.00086
48	0.03000	0.00500	0.00110	0.00042	N/A	0.00092
49	0.03000	0.00500	0.00120	0.00044	N/A	0.00100
50	0.03000	0.00500	0.00130	0.00046	N/A	0.00108
51	0.03000	0.00500	0.00140	0.00048	N/A	0.00117
52	0.03000	0.00500	0.00150	0.00050	N/A	0.00126
53	0.03000	0.00500	0.00156	0.00052	N/A	0.00137
54	0.06000	0.00500	0.00162	0.00054	N/A	0.00147
55	0.10000	0.00500	0.00168	0.00056	N/A	0.00160
56	0.12000	0.00500	0.00174	0.00058	N/A	0.00173
57	0.17000	0.00500	0.00180	0.00060	N/A	0.00187
58	0.26000	0.00500	0.00194	0.00064	N/A	0.00203
59	0.26000	0.00500	0.00208	0.00068	N/A	0.00221
60	0.32000	0.00500	0.00222	0.00072	N/A	0.00242
61	0.32000	0.00500	0.00236	0.00076	N/A	0.00264
62	0.32000	0.00500	0.00250	0.00080	N/A	0.00289
63	0.32000	0.00500	0.00250	0.00084	N/A	0.00317
64	0.32000	0.00500	0.00250	0.00088	N/A	0.00350
65	0.32000	0.00500	0.00250	0.00092	N/A	0.00385
66	0.25000	0.00500	0.00250	0.00096	N/A	0.00425
67	0.24000	0.00500	0.00250	0.00100	N/A	0.00471
68	0.24000	0.00500	0.00250	0.00104	N/A	0.00520
69	0.24000	0.00500	0.00250	0.00108	N/A	0.00575
70	0.24000	0.00500	0.00250	0.00112	N/A	0.00636
71	0.24000	0.00500	0.00250	0.00116	N/A	0.00703
72	0.24000	0.00500	0.00250	0.00120	N/A	0.00777
73	0.24000	0.00500	0.00250	0.00124	N/A	0.00859
74	0.24000	0.00500	0.00250	0.00128	N/A	0.00950
75	1.00000	0.00000	0.00000	0.00000	N/A	0.01050

Table A-8
Probability of Separation from Active Service for General Members
Plan D & G – Male

Age	Service Retirement Plan D	Service Retirement Plan G	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00000	0.00010	0.00010	N/A	0.00043
19	0.00000	0.00000	0.00010	0.00010	N/A	0.00046
20	0.00000	0.00000	0.00010	0.00010	N/A	0.00044
21	0.00000	0.00000	0.00010	0.00010	N/A	0.00043
22	0.00000	0.00000	0.00010	0.00010	N/A	0.00040
23	0.00000	0.00000	0.00010	0.00010	N/A	0.00037
24	0.00000	0.00000	0.00010	0.00010	N/A	0.00035
25	0.00000	0.00000	0.00010	0.00010	N/A	0.00034
26	0.00000	0.00000	0.00010	0.00010	N/A	0.00036
27	0.00000	0.00000	0.00010	0.00010	N/A	0.00037
28	0.00000	0.00000	0.00010	0.00010	N/A	0.00040
29	0.00000	0.00000	0.00010	0.00010	N/A	0.00041
30	0.00000	0.00000	0.00010	0.00020	N/A	0.00043
31	0.00000	0.00000	0.00010	0.00020	N/A	0.00046
32	0.00000	0.00000	0.00010	0.00020	N/A	0.00048
33	0.00000	0.00000	0.00016	0.00020	N/A	0.00050
34	0.00000	0.00000	0.00022	0.00020	N/A	0.00053
35	0.00000	0.00000	0.00028	0.00020	N/A	0.00056
36	0.00000	0.00000	0.00034	0.00020	N/A	0.00060
37	0.00000	0.00000	0.00040	0.00020	N/A	0.00064
38	0.00000	0.00000	0.00048	0.00020	N/A	0.00068
39	0.00000	0.00000	0.00056	0.00020	N/A	0.00073
40	0.01500	0.00000	0.00064	0.00020	N/A	0.00079
41	0.01500	0.00000	0.00072	0.00020	N/A	0.00085
42	0.01500	0.00000	0.00080	0.00020	N/A	0.00092
43	0.01500	0.00000	0.00084	0.00024	N/A	0.00100
44	0.01500	0.00000	0.00088	0.00028	N/A	0.00108
45	0.01500	0.00000	0.00092	0.00032	N/A	0.00118
46	0.01500	0.00000	0.00096	0.00036	N/A	0.00128
47	0.01500	0.00000	0.00100	0.00040	N/A	0.00139
48	0.01500	0.00000	0.00104	0.00044	N/A	0.00152
49	0.01500	0.00000	0.00108	0.00048	N/A	0.00166
50	0.01500	0.01200	0.00112	0.00052	N/A	0.00179
51	0.01200	0.00960	0.00116	0.00056	N/A	0.00194
52	0.01200	0.00960	0.00120	0.00060	N/A	0.00210
53	0.01500	0.01200	0.00156	0.00064	N/A	0.00227
54	0.02000	0.01600	0.00192	0.00068	N/A	0.00244
55	0.02500	0.02000	0.00228	0.00072	N/A	0.00263
56	0.02500	0.02000	0.00264	0.00076	N/A	0.00283
57	0.03000	0.02400	0.00300	0.00080	N/A	0.00306
58	0.03500	0.02800	0.00330	0.00084	N/A	0.00330
59	0.05000	0.04000	0.00360	0.00088	N/A	0.00355
60	0.07000	0.05600	0.00390	0.00092	N/A	0.00383
61	0.08000	0.06400	0.00420	0.00096	N/A	0.00413
62	0.11000	0.11000	0.00450	0.00100	N/A	0.00445
63	0.11000	0.11000	0.00450	0.00104	N/A	0.00481
64	0.16000	0.16000	0.00450	0.00108	N/A	0.00520
65	0.23000	0.18000	0.00450	0.00112	N/A	0.00562
66	0.20000	0.18000	0.00450	0.00116	N/A	0.00607
67	0.19000	0.30000	0.00450	0.00120	N/A	0.00658
68	0.18000	0.18000	0.00450	0.00124	N/A	0.00713
69	0.20000	0.20000	0.00450	0.00128	N/A	0.00775
70	0.23000	0.23000	0.00450	0.00132	N/A	0.00844
71	0.20000	0.20000	0.00450	0.00136	N/A	0.00920
72	0.20000	0.20000	0.00450	0.00140	N/A	0.01004
73	0.20000	0.20000	0.00450	0.00144	N/A	0.01098
74	0.20000	0.20000	0.00450	0.00148	N/A	0.01201
75	1.00000	1.00000	0.00000	0.00000	N/A	0.01315

Years of Service	Other Terminations
0	0.07000
1	0.05500
2	0.04000
3	0.03250
4	0.02500
5	0.02330
6	0.02170
7	0.02000
8	0.01900
9	0.01800
10	0.01700
11	0.01600
12	0.01500
13	0.01400
14	0.01300
15	0.01200
16	0.01100
17	0.01000
18	0.00920
19	0.00840
20	0.00760
21	0.00680
22	0.00600
23	0.00560
24	0.00520
25	0.00480
26	0.00440
27	0.00400
28	0.00400
29	0.00400
30 & Above	0.00000

Table A-9
Probability of Separation from Active Service for General Members
Plan D & G – Female

Age	Service Retirement Plan D	Service Retirement Plan G	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00000	0.00015	0.00010	N/A	0.00017
19	0.00000	0.00000	0.00015	0.00010	N/A	0.00017
20	0.00000	0.00000	0.00015	0.00010	N/A	0.00017
21	0.00000	0.00000	0.00015	0.00010	N/A	0.00016
22	0.00000	0.00000	0.00015	0.00010	N/A	0.00014
23	0.00000	0.00000	0.00015	0.00010	N/A	0.00013
24	0.00000	0.00000	0.00015	0.00010	N/A	0.00012
25	0.00000	0.00000	0.00015	0.00010	N/A	0.00012
26	0.00000	0.00000	0.00015	0.00010	N/A	0.00013
27	0.00000	0.00000	0.00015	0.00010	N/A	0.00014
28	0.00000	0.00000	0.00015	0.00010	N/A	0.00016
29	0.00000	0.00000	0.00015	0.00010	N/A	0.00017
30	0.00000	0.00000	0.00015	0.00010	N/A	0.00020
31	0.00000	0.00000	0.00015	0.00010	N/A	0.00021
32	0.00000	0.00000	0.00015	0.00010	N/A	0.00023
33	0.00000	0.00000	0.00020	0.00010	N/A	0.00025
34	0.00000	0.00000	0.00025	0.00010	N/A	0.00027
35	0.00000	0.00000	0.00030	0.00010	N/A	0.00030
36	0.00000	0.00000	0.00035	0.00010	N/A	0.00033
37	0.00000	0.00000	0.00040	0.00010	N/A	0.00036
38	0.00000	0.00000	0.00042	0.00014	N/A	0.00039
39	0.00000	0.00000	0.00044	0.00018	N/A	0.00043
40	0.01500	0.00000	0.00046	0.00022	N/A	0.00047
41	0.01500	0.00000	0.00048	0.00026	N/A	0.00052
42	0.01500	0.00000	0.00050	0.00030	N/A	0.00056
43	0.01500	0.00000	0.00060	0.00032	N/A	0.00061
44	0.01500	0.00000	0.00070	0.00034	N/A	0.00066
45	0.01500	0.00000	0.00080	0.00036	N/A	0.00073
46	0.01500	0.00000	0.00090	0.00038	N/A	0.00079
47	0.01500	0.00000	0.00100	0.00040	N/A	0.00086
48	0.01500	0.00000	0.00110	0.00042	N/A	0.00092
49	0.01500	0.00000	0.00120	0.00044	N/A	0.00100
50	0.01500	0.01200	0.00130	0.00046	N/A	0.00108
51	0.01200	0.00960	0.00140	0.00048	N/A	0.00117
52	0.01200	0.00960	0.00150	0.00050	N/A	0.00126
53	0.01500	0.01200	0.00156	0.00052	N/A	0.00137
54	0.02000	0.01600	0.00162	0.00054	N/A	0.00147
55	0.02500	0.02000	0.00168	0.00056	N/A	0.00160
56	0.02500	0.02000	0.00174	0.00058	N/A	0.00173
57	0.03000	0.02400	0.00180	0.00060	N/A	0.00187
58	0.03500	0.02800	0.00194	0.00064	N/A	0.00203
59	0.05000	0.04000	0.00208	0.00068	N/A	0.00221
60	0.07000	0.05600	0.00222	0.00072	N/A	0.00242
61	0.08000	0.06400	0.00236	0.00076	N/A	0.00264
62	0.11000	0.11000	0.00250	0.00080	N/A	0.00289
63	0.11000	0.11000	0.00250	0.00084	N/A	0.00317
64	0.16000	0.16000	0.00250	0.00088	N/A	0.00350
65	0.23000	0.18000	0.00250	0.00092	N/A	0.00385
66	0.20000	0.18000	0.00250	0.00096	N/A	0.00425
67	0.19000	0.30000	0.00250	0.00100	N/A	0.00471
68	0.18000	0.18000	0.00250	0.00104	N/A	0.00520
69	0.20000	0.20000	0.00250	0.00108	N/A	0.00575
70	0.23000	0.23000	0.00250	0.00112	N/A	0.00636
71	0.20000	0.20000	0.00250	0.00116	N/A	0.00703
72	0.20000	0.20000	0.00250	0.00120	N/A	0.00777
73	0.20000	0.20000	0.00250	0.00124	N/A	0.00859
74	0.20000	0.20000	0.00250	0.00128	N/A	0.00950
75	1.00000	1.00000	0.00000	0.00000	N/A	0.01050

Years of Service	Other Terminations
0	0.07000
1	0.05500
2	0.04000
3	0.03250
4	0.02500
5	0.02330
6	0.02170
7	0.02000
8	0.01900
9	0.01800
10	0.01700
11	0.01600
12	0.01500
13	0.01400
14	0.01300
15	0.01200
16	0.01100
17	0.01000
18	0.00920
19	0.00840
20	0.00760
21	0.00680
22	0.00600
23	0.00560
24	0.00520
25	0.00480
26	0.00440
27	0.00400
28	0.00400
29	0.00400
30 & Above	0.00000

Table A-10
Probability of Separation from Active Service for General Members
Plan E – Male

Age	Service Retirement	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	N/A	N/A	N/A	0.00043
19	0.00000	N/A	N/A	N/A	0.00046
20	0.00000	N/A	N/A	N/A	0.00044
21	0.00000	N/A	N/A	N/A	0.00043
22	0.00000	N/A	N/A	N/A	0.00040
23	0.00000	N/A	N/A	N/A	0.00037
24	0.00000	N/A	N/A	N/A	0.00035
25	0.00000	N/A	N/A	N/A	0.00034
26	0.00000	N/A	N/A	N/A	0.00036
27	0.00000	N/A	N/A	N/A	0.00037
28	0.00000	N/A	N/A	N/A	0.00040
29	0.00000	N/A	N/A	N/A	0.00041
30	0.00000	N/A	N/A	N/A	0.00043
31	0.00000	N/A	N/A	N/A	0.00046
32	0.00000	N/A	N/A	N/A	0.00048
33	0.00000	N/A	N/A	N/A	0.00050
34	0.00000	N/A	N/A	N/A	0.00053
35	0.00000	N/A	N/A	N/A	0.00056
36	0.00000	N/A	N/A	N/A	0.00060
37	0.00000	N/A	N/A	N/A	0.00064
38	0.00000	N/A	N/A	N/A	0.00068
39	0.00000	N/A	N/A	N/A	0.00073
40	0.00000	N/A	N/A	N/A	0.00079
41	0.00000	N/A	N/A	N/A	0.00085
42	0.00000	N/A	N/A	N/A	0.00092
43	0.00000	N/A	N/A	N/A	0.00100
44	0.00000	N/A	N/A	N/A	0.00108
45	0.00000	N/A	N/A	N/A	0.00118
46	0.00000	N/A	N/A	N/A	0.00128
47	0.00000	N/A	N/A	N/A	0.00139
48	0.00000	N/A	N/A	N/A	0.00152
49	0.00000	N/A	N/A	N/A	0.00166
50	0.00000	N/A	N/A	N/A	0.00179
51	0.00000	N/A	N/A	N/A	0.00194
52	0.00000	N/A	N/A	N/A	0.00210
53	0.00000	N/A	N/A	N/A	0.00227
54	0.00000	N/A	N/A	N/A	0.00244
55	0.02000	N/A	N/A	N/A	0.00263
56	0.02000	N/A	N/A	N/A	0.00283
57	0.02500	N/A	N/A	N/A	0.00306
58	0.02500	N/A	N/A	N/A	0.00330
59	0.03000	N/A	N/A	N/A	0.00355
60	0.04000	N/A	N/A	N/A	0.00383
61	0.06000	N/A	N/A	N/A	0.00413
62	0.09000	N/A	N/A	N/A	0.00445
63	0.09000	N/A	N/A	N/A	0.00481
64	0.20000	N/A	N/A	N/A	0.00520
65	0.28000	N/A	N/A	N/A	0.00562
66	0.19000	N/A	N/A	N/A	0.00607
67	0.19000	N/A	N/A	N/A	0.00658
68	0.19000	N/A	N/A	N/A	0.00713
69	0.19000	N/A	N/A	N/A	0.00775
70	0.19000	N/A	N/A	N/A	0.00844
71	0.19000	N/A	N/A	N/A	0.00920
72	0.19000	N/A	N/A	N/A	0.01004
73	0.19000	N/A	N/A	N/A	0.01098
74	0.19000	N/A	N/A	N/A	0.01201
75	1.00000	N/A	N/A	N/A	0.01315

Years of Service	Other Terminations
0	0.15000
1	0.08000
2	0.06000
3	0.04500
4	0.03500
5	0.03100
6	0.02700
7	0.02300
8	0.02200
9	0.02100
10	0.02000
11	0.01900
12	0.01800
13	0.01680
14	0.01560
15	0.01440
16	0.01320
17	0.01200
18	0.01160
19	0.01120
20	0.01080
21	0.01040
22	0.01000
23	0.01000
24	0.01000
25	0.01000
26	0.01000
27	0.01000
28	0.01000
29	0.01000
30 & Above	0.01000

Table A-11
Probability of Separation from Active Service for General Members
Plan E – Female

Age	Service Retirement	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	N/A	N/A	N/A	0.00017
19	0.00000	N/A	N/A	N/A	0.00017
20	0.00000	N/A	N/A	N/A	0.00017
21	0.00000	N/A	N/A	N/A	0.00016
22	0.00000	N/A	N/A	N/A	0.00014
23	0.00000	N/A	N/A	N/A	0.00013
24	0.00000	N/A	N/A	N/A	0.00012
25	0.00000	N/A	N/A	N/A	0.00012
26	0.00000	N/A	N/A	N/A	0.00013
27	0.00000	N/A	N/A	N/A	0.00014
28	0.00000	N/A	N/A	N/A	0.00016
29	0.00000	N/A	N/A	N/A	0.00017
30	0.00000	N/A	N/A	N/A	0.00020
31	0.00000	N/A	N/A	N/A	0.00021
32	0.00000	N/A	N/A	N/A	0.00023
33	0.00000	N/A	N/A	N/A	0.00025
34	0.00000	N/A	N/A	N/A	0.00027
35	0.00000	N/A	N/A	N/A	0.00030
36	0.00000	N/A	N/A	N/A	0.00033
37	0.00000	N/A	N/A	N/A	0.00036
38	0.00000	N/A	N/A	N/A	0.00039
39	0.00000	N/A	N/A	N/A	0.00043
40	0.00000	N/A	N/A	N/A	0.00047
41	0.00000	N/A	N/A	N/A	0.00052
42	0.00000	N/A	N/A	N/A	0.00056
43	0.00000	N/A	N/A	N/A	0.00061
44	0.00000	N/A	N/A	N/A	0.00066
45	0.00000	N/A	N/A	N/A	0.00073
46	0.00000	N/A	N/A	N/A	0.00079
47	0.00000	N/A	N/A	N/A	0.00086
48	0.00000	N/A	N/A	N/A	0.00092
49	0.00000	N/A	N/A	N/A	0.00100
50	0.00000	N/A	N/A	N/A	0.00108
51	0.00000	N/A	N/A	N/A	0.00117
52	0.00000	N/A	N/A	N/A	0.00126
53	0.00000	N/A	N/A	N/A	0.00137
54	0.00000	N/A	N/A	N/A	0.00147
55	0.02000	N/A	N/A	N/A	0.00160
56	0.02000	N/A	N/A	N/A	0.00173
57	0.02500	N/A	N/A	N/A	0.00187
58	0.02500	N/A	N/A	N/A	0.00203
59	0.03000	N/A	N/A	N/A	0.00221
60	0.04000	N/A	N/A	N/A	0.00242
61	0.06000	N/A	N/A	N/A	0.00264
62	0.09000	N/A	N/A	N/A	0.00289
63	0.09000	N/A	N/A	N/A	0.00317
64	0.20000	N/A	N/A	N/A	0.00350
65	0.28000	N/A	N/A	N/A	0.00385
66	0.19000	N/A	N/A	N/A	0.00425
67	0.19000	N/A	N/A	N/A	0.00471
68	0.19000	N/A	N/A	N/A	0.00520
69	0.19000	N/A	N/A	N/A	0.00575
70	0.19000	N/A	N/A	N/A	0.00636
71	0.19000	N/A	N/A	N/A	0.00703
72	0.19000	N/A	N/A	N/A	0.00777
73	0.19000	N/A	N/A	N/A	0.00859
74	0.19000	N/A	N/A	N/A	0.00950
75	1.00000	N/A	N/A	N/A	0.01050

Years of Service	Other Terminations
0	0.15000
1	0.08000
2	0.06000
3	0.04500
4	0.03500
5	0.03100
6	0.02700
7	0.02300
8	0.02200
9	0.02100
10	0.02000
11	0.01900
12	0.01800
13	0.01680
14	0.01560
15	0.01440
16	0.01320
17	0.01200
18	0.01160
19	0.01120
20	0.01080
21	0.01040
22	0.01000
23	0.01000
24	0.01000
25	0.01000
26	0.01000
27	0.01000
28	0.01000
29	0.01000
30 & Above	0.01000

Table A-12
Probability of Separation from Active Service for Safety Members
Plan A, B & C – Male

Age	Service Retirement Plans A-B	Service Retirement Plan C	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00000	0.00200	0.00000	0.00010	0.00037
19	0.00000	0.00000	0.00200	0.00000	0.00010	0.00040
20	0.00000	0.00000	0.00200	0.00000	0.00010	0.00041
21	0.00000	0.00000	0.00200	0.00000	0.00010	0.00041
22	0.00000	0.00000	0.00200	0.00000	0.00010	0.00040
23	0.00000	0.00000	0.00200	0.00000	0.00010	0.00039
24	0.00000	0.00000	0.00200	0.00000	0.00010	0.00038
25	0.00000	0.00000	0.00200	0.00000	0.00010	0.00037
26	0.00000	0.00000	0.00200	0.00000	0.00010	0.00038
27	0.00000	0.00000	0.00200	0.00000	0.00010	0.00039
28	0.00000	0.00000	0.00200	0.00000	0.00010	0.00040
29	0.00000	0.00000	0.00200	0.00000	0.00010	0.00041
30	0.00000	0.00000	0.00200	0.00000	0.00010	0.00041
31	0.00000	0.00000	0.00200	0.00000	0.00010	0.00042
32	0.00000	0.00000	0.00200	0.00000	0.00010	0.00043
33	0.00000	0.00000	0.00210	0.00000	0.00010	0.00044
34	0.00000	0.00000	0.00220	0.00000	0.00010	0.00045
35	0.00000	0.00000	0.00230	0.00000	0.00010	0.00047
36	0.00000	0.00000	0.00240	0.00000	0.00010	0.00049
37	0.00000	0.00000	0.00250	0.00000	0.00010	0.00050
38	0.00000	0.00000	0.00260	0.00000	0.00010	0.00053
39	0.00000	0.00000	0.00270	0.00000	0.00010	0.00056
40	0.00750	0.00000	0.00280	0.00000	0.00010	0.00059
41	0.00750	0.00000	0.00290	0.00000	0.00010	0.00062
42	0.00750	0.00000	0.00300	0.00000	0.00010	0.00067
43	0.00750	0.00000	0.00310	0.00000	0.00010	0.00071
44	0.00750	0.00000	0.00320	0.00000	0.00010	0.00076
45	0.00750	0.00000	0.00330	0.00000	0.00010	0.00082
46	0.00750	0.00000	0.00340	0.00000	0.00010	0.00088
47	0.00750	0.00000	0.00350	0.00000	0.00010	0.00095
48	0.00750	0.00000	0.00400	0.00000	0.00010	0.00102
49	0.00750	0.00000	0.00500	0.00000	0.00010	0.00111
50	0.02000	0.02000	0.00750	0.00000	0.00010	0.00120
51	0.02000	0.02000	0.00750	0.00000	0.00010	0.00129
52	0.02000	0.02000	0.00750	0.00000	0.00010	0.00140
53	0.03000	0.03000	0.02000	0.00000	0.00010	0.00151
54	0.15000	0.10000	0.02000	0.00000	0.00010	0.00162
55	0.26000	0.15000	0.07500	0.00000	0.00010	0.00175
56	0.17000	0.15000	0.07500	0.00000	0.00010	0.00190
57	0.17000	0.28000	0.10000	0.00000	0.00010	0.00205
58	0.17000	0.17000	0.10000	0.00000	0.00010	0.00223
59	0.27000	0.27000	0.10000	0.00000	0.00010	0.00243
60	0.27000	0.27000	0.10000	0.00000	0.00010	0.00264
61	0.25000	0.25000	0.05000	0.00000	0.00010	0.00288
62	0.25000	0.25000	0.05000	0.00000	0.00010	0.00315
63	0.25000	0.25000	0.05000	0.00000	0.00010	0.00344
64	0.25000	0.25000	0.05000	0.00000	0.00010	0.00375
65	1.00000	1.00000	0.00000	0.00000	0.00000	0.00410

Years of Service	Other Terminations
0	0.03500
1	0.02750
2	0.02000
3	0.01500
4	0.01200
5	0.01130
6	0.01070
7	0.01000
8	0.00920
9	0.00840
10	0.00760
11	0.00680
12	0.00600
13	0.00560
14	0.00520
15	0.00480
16	0.00440
17	0.00400
18	0.00360
19	0.00320
20	0.00280
21	0.00240
22	0.00200
23	0.00200
24	0.00200
25	0.00200
26	0.00200
27	0.00200
28	0.00200
29	0.00200
30 & Above	0.00000

Table A-13
Probability of Separation from Active Service for Safety Members
Plan A, B & C – Female

Age	Service Retirement Plans A-B	Service Retirement Plan C	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00000	0.00300	0.00000	0.00010	0.00014
19	0.00000	0.00000	0.00300	0.00000	0.00010	0.00015
20	0.00000	0.00000	0.00300	0.00000	0.00010	0.00016
21	0.00000	0.00000	0.00300	0.00000	0.00010	0.00017
22	0.00000	0.00000	0.00300	0.00000	0.00010	0.00017
23	0.00000	0.00000	0.00300	0.00000	0.00010	0.00018
24	0.00000	0.00000	0.00300	0.00000	0.00010	0.00019
25	0.00000	0.00000	0.00300	0.00000	0.00010	0.00020
26	0.00000	0.00000	0.00300	0.00000	0.00010	0.00021
27	0.00000	0.00000	0.00300	0.00000	0.00010	0.00022
28	0.00000	0.00000	0.00340	0.00000	0.00010	0.00024
29	0.00000	0.00000	0.00380	0.00000	0.00010	0.00025
30	0.00000	0.00000	0.00420	0.00000	0.00010	0.00027
31	0.00000	0.00000	0.00460	0.00000	0.00010	0.00028
32	0.00000	0.00000	0.00500	0.00000	0.00010	0.00030
33	0.00000	0.00000	0.00560	0.00000	0.00010	0.00032
34	0.00000	0.00000	0.00620	0.00000	0.00010	0.00034
35	0.00000	0.00000	0.00680	0.00000	0.00010	0.00036
36	0.00000	0.00000	0.00740	0.00000	0.00010	0.00038
37	0.00000	0.00000	0.00800	0.00000	0.00010	0.00041
38	0.00000	0.00000	0.00840	0.00000	0.00010	0.00043
39	0.00000	0.00000	0.00880	0.00000	0.00010	0.00046
40	0.00750	0.00000	0.00920	0.00000	0.00010	0.00049
41	0.00750	0.00000	0.00960	0.00000	0.00010	0.00052
42	0.00750	0.00000	0.01000	0.00000	0.00010	0.00056
43	0.00750	0.00000	0.01040	0.00000	0.00010	0.00059
44	0.00750	0.00000	0.01080	0.00000	0.00010	0.00063
45	0.00750	0.00000	0.01120	0.00000	0.00010	0.00067
46	0.00750	0.00000	0.01160	0.00000	0.00010	0.00071
47	0.00750	0.00000	0.01200	0.00000	0.00010	0.00076
48	0.00750	0.00000	0.01300	0.00000	0.00010	0.00080
49	0.00750	0.00000	0.01500	0.00000	0.00010	0.00085
50	0.02000	0.02000	0.01800	0.00000	0.00010	0.00091
51	0.02000	0.02000	0.02000	0.00000	0.00010	0.00097
52	0.02000	0.02000	0.02400	0.00000	0.00010	0.00103
53	0.03000	0.03000	0.02800	0.00000	0.00010	0.00109
54	0.15000	0.10000	0.03200	0.00000	0.00010	0.00116
55	0.26000	0.15000	0.11000	0.00000	0.00010	0.00123
56	0.17000	0.15000	0.06000	0.00000	0.00010	0.00131
57	0.17000	0.28000	0.06000	0.00000	0.00010	0.00140
58	0.17000	0.17000	0.06000	0.00000	0.00010	0.00148
59	0.27000	0.27000	0.06000	0.00000	0.00010	0.00158
60	0.27000	0.27000	0.06000	0.00000	0.00010	0.00168
61	0.25000	0.25000	0.06000	0.00000	0.00010	0.00178
62	0.25000	0.25000	0.06000	0.00000	0.00010	0.00190
63	0.25000	0.25000	0.06000	0.00000	0.00010	0.00202
64	0.25000	0.25000	0.06000	0.00000	0.00010	0.00215
65	1.00000	1.00000	0.00000	0.00000	0.00000	0.00228

Years of Service	Other Terminations
0	0.03500
1	0.02750
2	0.02000
3	0.01500
4	0.01200
5	0.01130
6	0.01070
7	0.01000
8	0.00920
9	0.00840
10	0.00760
11	0.00680
12	0.00600
13	0.00560
14	0.00520
15	0.00480
16	0.00440
17	0.00400
18	0.00360
19	0.00320
20	0.00280
21	0.00240
22	0.00200
23	0.00200
24	0.00200
25	0.00200
26	0.00200
27	0.00200
28	0.00200
29	0.00200
30 & Above	0.00000

Appendix B Summary of Plan Provisions

All actuarial calculations are based on our understanding of the statutes governing LACERA as contained in the County Employees Retirement Law (CERL) of 1937 and the California Public Employees' Pension Reform Act of 2013 (PEPRA). The benefit and contribution provisions of this law are summarized briefly below, along with corresponding references to the Government Code Section. This summary does not attempt to cover all the detailed provisions of the law.

MEMBERSHIP	**Government Code Section**
Permanent employees of Los Angeles County (County) and participating districts who work ¾ time or more are eligible for membership in LACERA.	(31551, 31552, Bylaws)
Employees eligible for safety membership (law enforcement, firefighting and specific lifeguards) become safety members on the first day of the month after date of hire. Employees who become members on or after January 1, 2013, will enter into Safety Plan C.	(31558)
All other employees become general members on the first day of the month after date of hire or the first day of the month after they make an election of either Plan D or Plan E, depending on the law in effect at that time. Employees who become members on or after January 1, 2013 will enter into General Plan G.	(31493, 31493.5, 31493.6, Bylaws)
Elective officers become members on the first day of the month after filing a declaration with the Board of Retirement (Board).	(31553, 31562)
General members in Plan E may transfer all their Plan E service credit to Plan D during an approved transfer period by making the required contributions. Transferred members relinquish, waive, and forfeit any and all vested or accrued benefits available under any other retirement plan and are entitled only to the benefits of Plan D.	(31494.1, 31494.3)

RETIREMENT PLANS

The County has established nine defined benefit plans. The following outlines the dates these plans were available, based on a member's date of entry into LACERA:

Safety Member Plans:

Plan A: Inception to August 1977

Plan B: September 1977 through December 2012

Plan C: January 2013 to present (7522.02)

General Member Plans:

Plan A: Inception through August 1977

Plan B: September 1977 through September 1978

Plan C: October 1978 through May 1979

Plan D: June 1979 through December 2012

Plan E: February 1982 through December 2012 (31487, 31496)

Plan G: January 2013 to present (7522.02)

NOTE: After review of a new member's account, a member with prior membership may be enrolled into one of the pre-PEPRA plans.

MEMBER CONTRIBUTIONS

Plans A, B, D and General Plan C members

Contributions are based on the entry age and class of each member and are required of all members in Plans A, B, C, and D. Current member rates are shown in Appendix D. Section 5 provides additional detail on how these rates are calculated. (31620)

Contributions cease when general members are credited with 30 years of service in a contributory plan, provided they were members of LACERA or a reciprocal plan on March 7, 1973, and continuously thereafter. All safety members are eligible for the 30-year cessation of contributions. (31625.2, 31836.1)

Interest is credited to contributions semiannually on June 30 and December 31 at an interest rate set by the Board of Investments on amounts that have been on deposit for at least six months. (31591, 31700)

In addition to the normal contributions, members pay one-half of the cost of their plan's COLA. This is discussed further in Section 5 of this report. (31873)

General Plan G and Safety Plan C members

Members contribute 50% of the aggregate Normal Cost rate for their Plan. (7522.30)

EMPLOYER CONTRIBUTIONS

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

SERVICE RETIREMENT ALLOWANCE

Eligibility

Plans A-B: **Safety members** (31662.4, 31662.6, 31663.25)

Age 50 with 10 years of County service;
Any age with 20 years of service; or

Plans A-D: **General members** (31672)

Age 50 with 10 years of County service;
Any age with 30 years of service; or
Age 70 and actively employed, regardless of service.

Plan C: **Safety members** (7522.25(d))

Age 50 with 5 years of service.

Plan E: **General members** (31491, 31491.3)

Age 65 with 10 years of service.
A reduced benefit is also payable at age 55 with 10 years of service.

Plan G: **General members** (7522.20(a))

Age 52 with 5 years of service.

Final Compensation

General Plans A-D and Safety Plans A-B (31462.3)

Average of the member's highest monthly pensionable earnings during any 12-consecutive-month period.

Plan E: Average of the member's highest monthly pensionable earnings during any three 12-consecutive month periods. (31488)

General Plan G and Safety Plan C

Average of the member's highest monthly pensionable earnings during any 36-consecutive month period. (7522.32)

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)

The amount of compensation taken into account for General Plan G and Safety Plan C members is limited to $151,549 for 2020. The amount of compensation taken into account shall be adjusted based on changes in the Consumer Price Index for All Urban Consumers: U.S. City Average. Adjustments shall be effective annually on January 1. (7522.10)

SERVICE RETIREMENT ALLOWANCE (continued)

Monthly Allowance

Plans A-B: **Safety members**

1/50 x Final Compensation x Safety age factor x Years of service. (The Safety Plan A and Safety Plan B age factors are the same.) (31664)

Plans A-D: **General members** (31676.1)

1/60 x Final Compensation x a Plan specific age factor x years of service. (The General Plan C and General D age factors are the same.) (31676.11) (31676.14) (7522.25(d))

Plan C: **Safety members**

Final Compensation x Safety Plan percentage x Years of service.

Plan E: **General members [(a)+(b)-(c)] x d where:** (31491, 31491.3 (b)&(c))

(a) 2% x Final Compensation x (Years of Service (up to 35 years), plus
(b) 1 % x Final Compensation x Years of Service in excess of 35 (up to 10)
(c) Estimated Primary Insurance Amount (PIA) x Years of Covered Service (up to 35) divided by 35.
(d) Early Retirement Adjustment Factor

The PIA is calculated based on certain assumptions specified by statute, and an assumed Social Security retirement age of 62.

If retirement occurs prior to age 65, benefit amount is adjusted by an Early Retirement Adjustment Factor.

Plan G: **General members** (7522.20(a))

Final Compensation x General Plan percentage x Years of Service.

Social Security Integration

Plans A-C: **General Members**

For County service covered by Social Security prior to January 1, 1983, the 1/60 factor is replaced by 1/90 for the first $350 of compensation. (31808)

Plan D: The 1/90 factor is applied to the first $1,050 of compensation.

SERVICE RETIREMENT ALLOWANCE (continued)

Sample Plan Age Factors

Plan	Age 50	Age 55	Age 60	Age 65 & Up	
General A	0.8850	1.1686	1.4638	1.5668	(31676.14)
General B	0.7454	1.0000	1.3093	1.5668	(31676.11)
General C&D	0.7091	0.8954	1.1500	1.4593	(31676.1)
General E	N/A	0.3748	0.6009	1.0000	(31491.3(a))
Safety A&B	1.0000	1.3099	1.3099	1.3099	(31664)

Sample Plan Age Percentages

Plan	Age 50	Age 55	Age 60	Age 65 & Up	
General G	N/A	1.30%	1.80%	2.30%*	(7522.20(a))
Safety C	2.00%	2.50%	2.70%	2.70%	(7522.25(d))

**Maximum percentage for General Plan G is 2.50% at age 67.*

Maximum Allowance

Plans A-D, G: Allowance may not exceed 100% of final compensation. (31676.1, 31676.11, 31676.14)

Plan E: The sum of the normal retirement allowance and the estimated PIA cannot exceed 70% of Final Compensation for a member with 35 or less years of service, and cannot exceed 80% of Final Compensation if service exceeds 35 years. (31491)

Unmodified Retirement Allowance (Normal Form)

Plans A-D, G: Life Annuity payable to retired member with 65% continuance to an eligible survivor (or eligible children). (31760.12, 31785.4)

Plan E: Life Annuity payable to retired member with 55% continuance to an eligible survivor (or eligible children). (31492.1)

Eligible survivor includes certain domestic partners. (31780.2)

SERVICE RETIREMENT ALLOWANCE (continued)

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.		(31760)
Unmodified Plus:	Members with eligible survivors may elect a higher percent than the standard unmodified continuance, up to 100%. The benefit is actuarially reduced from the unmodified amount. The elected percent of the member's reduced allowance is payable to the eligible survivor.	(31760.5)
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 a beneficiary having an insurable interest in the life of the member.	(31762)
Option 3:	50% of member's reduced allowance is payable to a beneficiary having an insurable interest in the life of the member.	(31763)
Option 4:	Other % of member's reduced allowance is payable to a beneficiary(ies) having an insurable interest in the life of the member.	(31764)
A member may not revoke and name another beneficiary if the member elects Option 2, 3, or 4.		(31782)
Pension Advance Option:	The Pension Advance Option is available to members who are fully insured under Social Security for the purpose of coordinating a member's retirement allowance with benefits receivable from Social Security. It is not available to disability retirees or members who elect Option 2, 3, or 4. The allowance is increased prior to age 62 and then reduced after 62 by amounts which have equivalent actuarial values. The automatic 65% continuance for eligible spouses of members who elect the Pension Advance Option is based on the unmodified allowance the member would have received if the member had not elected the option.	(31810, 31811)

All Allowances (31452.7, 31600)

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.

SERVICE-CONNECTED DISABILITY RETIREMENT ALLOWANCE

Eligibility

Plans A-D, G:	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)
Plan E:	Not available under Plan E.	(31487)

Monthly Allowance

Greater of (1) 50% of final compensation, and (2) the service retirement allowance, if eligible to retire. (31727.4)

Normal Form Of Payment

Life Annuity with 100% continuance to a surviving spouse (or eligible children). (31786)

NONSERVICE-CONNECTED DISABILITY RETIREMENT ALLOWANCE

Eligibility

Plans A-D, G:	Any age with five years of service, and permanently incapacitated for the performance of duty.	(31720)
Plan E:	Not available under Plan E.	(31487)

Monthly Allowance

The monthly allowance is equal to a service retirement allowance if a General member is age 65 or a Safety member is age 55; otherwise the monthly allowance is the greater of that to which the member would be entitled as service retirement or the sum of (a) or (b) where: (31726, 31726.5)

General Members:	(a) 90% of 1/60 of Final Compensation x years of service, if member must rely on service in another retirement plan in order to be eligible to retire, or allowance exceeds 1/3 of final compensation.	(31727(a))
	(b) 90% of 1/60 of Final Compensation x years of service projected to age 65, not to exceed 1/3 of Final 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)

Normal Form of Payment

Life Annuity with 65% continuance to a surviving spouse (or eligible children). (31760.1, 31760.12, 31785, 31785.4)

SERVICE-CONNECTED PRE-RETIREMENT DEATH BENEFITS

Eligibility

Plans A-D, G:	Active members who die in service as a result of injury or disease arising out of and in the course of employment.	(31787)
Plan E:	Not available under Plan E.	(31487)

Monthly Allowance (31787)

A monthly allowance payable to an eligible survivor (or eligible children) equal to the retirement allowance the deceased member would have received under a service-connected disability retirement.

Optional Combined Benefit (31781.3)

In lieu of the monthly allowance above, a surviving spouse 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 Compensation, reduced by a monthly amount, which is the actuarial equivalent of (a) above based on the age of surviving spouse.

Death Benefit (Lump Sum) (31781)

The member's accumulated contributions with 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)

In the case of a surviving spouse of a member who is killed in the performance of duty or who dies as the result of an accident or an injury caused by external violence or physical force, incurred in the performance of the member's duty: 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)

A surviving spouse of a safety member, who is killed in the performance of duty or who dies as the result of an accident or injury caused by external violence or physical force, incurred in the performance of his or her duty, 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 PRE-RETIREMENT DEATH BENEFITS

Eligibility

Plans A-D, G:	Active members who die while in service or while physically or mentally incapacitated for the performance of duty.	(31780)
Plan E:	Not available under Plan E.	(31487)

Death Benefit (Lump Sum) (31781)

The member's accumulated contributions with 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, the following several optional death benefits are available to provide flexibility to survivors.

First Optional Death Benefit (31781.1, 31781.12)

If a member who would have been entitled to a non-service-connected disability retirement allowance dies prior to retirement as a result of such disability, the surviving spouse (or eligible children) may elect to receive an optional death allowance equal to 65% 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 County service, a surviving spouse (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 Section 31765 (an Option 3 benefit) or 31765.2 (a 65% continuance).

Third Optional Death Benefit

A surviving spouse of a member who dies after five years of County 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 65% of the monthly retirement allowance to which the member would have been entitled if the member retired or could have retired for a non-service-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 surviving spouse. (31781.1, 31781.12)

Fourth Optional Death Benefit

If a member dies while eligible for a service retirement and the surviving spouse is designated as beneficiary, the spouse (or eligible children) may elect to receive 65% of the monthly retirement allowance to which the member would have been entitled as of the date of death. (31765.1, 31765.2)

Fifth Optional Death Benefit

If a member dies while eligible for a service retirement and the surviving spouse 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 take the first optional death benefit or the lump sum, whichever is more valuable.

POSTRETIREMENT DEATH/BURIAL BENEFIT

Plans A-E:	A one-time lump-sum benefit of $5,000 is payable to the estate or to the beneficiary designated by the member upon the death of any member while receiving a retirement allowance. This is in addition to any other death or survivor benefits. The amount is currently paid by the County based on agreement with LACERA. It is not included for valuation purposes.	(31789.3)

DEFERRED RETIREMENT ALLOWANCE

Eligibility

Plans A, B, D and General Plan C:		
	Five years of county or reciprocal service. Member contributions must be left on deposit.	(31700)
Safety Plan C:	Age 50 with 5 years of service.	(7522.25(d))
Plan E:	Age 55 with 10 years of service.	(31491)
Plan G:	Age 52 with 5 years of service.	(7522.20(a))

DEFERRED RETIREMENT ALLOWANCE (continued)

Monthly Allowance

Plans A-D, G:	Same as service retirement allowance; payable any time after the member would have been eligible for service retirement.	(31703, 31704, 31705)
	If a former 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 E:	Same as service retirement allowance at normal retirement age 65 or in an actuarially equivalent reduced amount at early retirement, after age 55.	(31491)

TRANSFERS BETWEEN PLAN D AND PLAN E

Members in Plan D may transfer to Plan E on a prospective basis. Members in Plan E may transfer to Plan D on a prospective basis. (31494.2, 31494.5)

RECIPROCITY

All Plans:	Reciprocal benefits are may be granted to members who are entitled to retirement benefits from two or more retirement plans established under the CERL or from a County retirement plan and the California Public Employees' Retirement System (CalPERS). Reciprocity also applies to the members of the State Teachers' Retirement System Defined Benefit Plan.	(31830, 31840.4, 31840.8)
	Final Compensation may be based on service with CalPERS or another County retirement plan, if greater.	(31835)
	Vested former members are eligible for disability and death benefits from LACERA, if disabled while a member of CalPERS or another County retirement plan, but combined benefits are limited.	(31837, 31838, 31838.5, 31839)

TRANSFER FROM CALPERS

Whenever firefighting or law enforcement functions performed by a public agency or the state subject to the California Public Employees Retirement Law are transferred to the County, fire authority, or district, employees performing those functions become members of LACERA. LACERA and CalPERS may enter into an agreement whereby the members' service credit plus the members' and the cities' or states' retirement contributions are transferred from CalPERS to LACERA. (31657)

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)

Plan A:	Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase.	(31870.1)
Plans B-D, G:	Members (and their beneficiaries) are limited to a maximum 2% cost-of-living increase. When the CPI exceeds 2% or 3%, the difference between the actual CPI and the maximum cost-of-living increase given in any year is credited to the COLA Accumulation. It may be used in future years to provide cost-of-living increases when the CPI falls below 2% or 3%, depending on the retirement plan.	(31870)
Plan E:	Members (and their beneficiaries) are limited to a maximum 2% cost-of-living increase. The 2% is pro-rated based on service earned after June 4, 2002. "Elective COLA" increases for service earned prior to June 4, 2002 may be purchased by the member.	(31495.5)

STAR PROGRAM

Contributory plan members who have a COLA Accumulation of more than 20% resulting from CPI increases that exceeded the maximum cost-of-living increases that could be granted are eligible for a supplemental cost-of-living increase effective January 1 known as the Supplemental Targeted Adjustment for Retirees Cost-of-Living Adjustment (STAR COLA). These benefits are not evaluated in this report, or as part of the actuarially required funding amount, unless they have been vested by the Board of Retirement. (31874.3(b))

Appendix C Valuation Data and Schedules

On the following table, Exhibit C-1, we present a summary of LACERA membership at June 30, 2021 for active members. Similar information is shown in Exhibit C-2 Retired for retired members and C-2 Former for vested former members.

Note that salary amounts shown are the prior year annual pensionable earnings for those members of plans with a one-year final compensation period. For plans with a three-year final compensation period, the monthly rate of pay at June 2021 is shown.

Additional statistical data on both active and retired members is shown in the following tables. Additional detailed summaries are supplied to LACERA staff in a supplementary report.

Exhibit C-3: Age Distribution of Active Members

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 each plan separately.

Data on LACERA membership as of June 30, 2021 was supplied to us by LACERA staff. Based on our review of this data and discussions with LACERA staff, all retiree and beneficiary records were included in our valuation.

All records for active and former members supplied by LACERA were included in the valuation.

Exhibit C-1
LACERA Membership – Active Members as of June 30, 2021

	Sex	Vested	NonVested	Total Number	Annual Salary	Average Age	Average Monthly Salary	Average Service
General Members								
Plan A	M	25	-	25	$ 3,672,588	74.7	$ 12,242	45.7
	F	46	-	46	4,326,972	70.6	7,839	40.4
Plan B	M	5	-	5	518,616	69.6	8,644	34.5
	F	14	-	14	1,688,208	66.9	10,049	38.1
Plan C	M	6	-	6	507,540	66.3	7,049	41.6
	F	18	-	18	1,988,544	68.2	9,206	41.2
Plan D	M	12,291	78	12,369	1,298,890,356	51.7	8,751	19.7
	F	25,610	155	25,765	2,452,347,696	51.3	7,932	19.8
Plan E	M	4,597	196	4,793	464,613,792	55.7	8,078	23.1
	F	10,108	319	10,427	833,525,664	55.7	6,662	24.0
Plan G	M	4,077	6,666	10,743	839,899,620	39.6	6,515	4.1
	F	7,819	13,933	21,752	1,535,543,340	38.6	5,883	4.0
Total		64,616	21,347	85,963	$ 7,437,522,936	47.5	$ 7,210	14.6
Safety Members								
Plan A	M	2	-	2	$ 326,532	66.5	$ 13,606	34.2
	F	-	-	-	-	N/A	N/A	N/A
Plan B	M	7,256	111	7,367	1,031,002,740	46.7	11,662	19.9
	F	1,273	9	1,282	171,595,356	44.6	11,154	18.1
Plan C	M	1,080	2,754	3,834	382,158,036	31.9	8,306	3.7
	F	198	455	653	65,774,268	31.1	8,394	3.7
Total		9,809	3,329	13,138	$ 1,650,856,932	41.4	$ 10,471	14.2
Grand Total		74,425	24,676	99,101	$ 9,088,379,868	46.7	$ 7,642	14.5

Exhibit C-2
Retired LACERA Membership – Retired Members as of June 30, 2021

	Sex	Number	Annual Allowance	Average Age	Average Monthly Benefit
General Members					
Plan A	M	6,775	$ 495,805,714	80.8	$ 6,098
	F	12,298	651,028,451	80.5	4,411
Plan B	M	213	15,240,885	75.3	5,963
	F	510	27,718,865	75.3	4,529
Plan C	M	145	8,336,711	74.5	4,791
	F	344	16,542,742	74.8	4,007
Plan D	M	6,890	326,691,732	69.1	3,951
	F	12,968	545,925,791	69.0	3,508
Plan E	M	5,001	167,266,254	72.7	2,787
	F	10,561	295,588,076	72.4	2,332
Plan G	M	55	1,056,912	65.7	1,601
	F	68	916,309	63.8	1,123
Total		55,828	$ 2,552,118,442	74.1	$ 3,809
Safety Members					
Plan A	M	4,379	$ 476,183,209	77.6	$ 9,062
	F	2,016	153,189,167	79.0	6,332
Plan B	M	5,948	619,948,332	61.2	8,686
	F	1,311	99,417,044	58.6	6,319
Plan C	M	10	717,017	58.8	5,975
	F	5	188,941	41.4	3,149
Total		13,669	$ 1,349,643,710	68.8	$ 8,228
Grand Total		69,497	$ 3,901,762,152	73.0	$ 4,679

Exhibit C-2
Former LACERA Membership – Vested Former Members as of June 30, 2021[1]
Subtotaled by Plan and Retirement Type

	Sex	Number	Average Age
General Members			
Plan A	M	16	75.3
	F	35	73.5
Plan B	M	2	73.5
	F	7	70.9
Plan C	M	5	68.0
	F	9	66.4
Plan D	M	2,537	50.0
	F	5,319	49.3
Plan E	M	1,002	57.4
	F	2,173	57.4
Plan G	M	1,498	38.4
	F	3,457	37.6
Total		16,060	47.6
Safety Members			
Plan A	M	4	69.0
	F	-	-
Plan B	M	678	44.9
	F	123	45.4
Plan C	M	278	31.9
	F	45	31.2
Total		1,128	41.3
Grand Total		17,188	47.2

1. Includes non-vested former members who still have member contributions with LACERA

Exhibit C-2a
LACERA Membership – Retired Members as of June 30, 2021
Subtotaled by Plan and Retirement Type

Plan	Retirement Type	Number		Annual Benefits in Thousands		Average Monthly Benefit
General Plans:						
Plan A						
	Healthy	13,495	$	923,824	$	5,705
	Disabled	1,332		58,290		3,647
	Beneficiaries	4,246		164,720		3,233
	Total	19,073	$	1,146,834	$	5,011
Plan B						
	Healthy	603	$	38,386	$	5,305
	Disabled	55		2,114		3,203
	Beneficiaries	65		2,460		3,153
	Total	723	$	42,960	$	4,952
Plan C						
	Healthy	374	$	21,300	$	4,746
	Disabled	50		1,742		2,903
	Beneficiaries	65		1,838		2,357
	Total	489	$	24,880	$	4,240
Plan D						
	Healthy	15,923	$	749,634	$	3,923
	Disabled	2,256		82,472		3,046
	Beneficiaries	1,679		40,511		2,011
	Total	19,858	$	872,617	$	3,662
Plan E						
	Healthy	14,176	$	441,452	$	2,595
	Disabled	N/A		N/A		N/A
	Beneficiaries	1,386		21,402		1,287
	Total	15,562	$	462,854	$	2,479
Plan G						
	Healthy	105	$	1,602	$	1,271
	Disabled	8		243		2,526
	Beneficiaries	10		129		1,073
	Total	123	$	1,974	$	1,337
Safety Plans:						
Plan A						
	Healthy	2,047	$	233,304	$	9,498
	Disabled	2,731		277,908		8,480
	Beneficiaries	1,617		118,160		6,089
	Total	6,395	$	629,372	$	8,201
Plan B						
	Healthy	3,034	$	322,963	$	8,871
	Disabled	3,876		373,955		8,040
	Beneficiaries	349		22,447		5,360
	Total	7,259	$	719,365	$	8,258
Plan C						
	Healthy	9	$	647	$	5,991
	Disabled	5		210		3,493
	Beneficiaries	1		49		4,109
	Total	15	$	906	$	5,033
Grand Totals		69,497		3,901,762		4,679

Exhibit C-2b
LACERA Membership – Retired Members as of June 30, 2021
Subtotaled by Retirement Type and Plan

Type	Plan	Number		Annual Benefits in Thousands		Average Monthly Benefit
Healthy Retirees						
	General A	13,495	$	923,824	$	5,705
	General B	603		38,386		5,305
	General C	374		21,300		4,746
	General D	15,923		749,634		3,923
	General E	14,176		441,452		2,595
	General G	105		1,602		1,271
	Safety A	2,047		233,304		9,498
	Safety B	3,034		322,963		8,871
	Safety C	9		647		5,991
	Total	49,766	$	2,733,112	$	4,577
Disabled Retirees						
	General A	1,332	$	58,290	$	3,647
	General B	55		2,114		3,203
	General C	50		1,742		2,903
	General D	2,256		82,472		3,046
	General E	N/A		N/A		N/A
	General G	8		243		2,526
	Safety A	2,731		277,908		8,480
	Safety B	3,876		373,955		8,040
	Safety C	5		210		3,493
	Total	10,313	$	796,934	$	6,440
Beneficiaries						
	General A	4,246	$	164,720	$	3,233
	General B	65		2,460		3,153
	General C	65		1,838		2,357
	General D	1,679		40,511		2,011
	General E	1,386		21,402		1,287
	General G	10		129		1,073
	Safety A	1,617		118,160		6,089
	Safety B	349		22,447		5,360
	Safety C	1		49		4,109
	Total	9,418	$	371,716	$	3,289
Grand Totals		69,497	$	3,901,762	$	4,679

Exhibit C-3
Age Distribution of Active Members as of June 30, 2021

	Age Groups						
	0-29	30-39	40-49	50-59	60-69	70+	Total
General Plans:							
Plan A							
Male	-	-	-	-	6	19	25
Female	-	-	-	-	21	25	46
Plan B							
Male	-	-	-	-	3	2	5
Female	-	-	-	-	12	2	14
Plan C							
Male	-	-	-	-	4	2	6
Female	-	-	-	-	11	7	18
Plan D							
Male	6	1,200	3,917	4,680	2,299	267	12,369
Female	3	2,549	8,682	9,611	4,399	521	25,765
Plan E							
Male	-	268	1,009	1,738	1,480	298	4,793
Female	2	509	1,991	4,101	3,327	497	10,427
Plan G							
Male	1,412	4,885	2,579	1,305	530	32	10,743
Female	3,157	10,498	4,808	2,471	760	58	21,752
Safety Plans:							
Plan A							
Male	-	-	-	-	2	-	2
Female	-	-	-	-	-	-	-
Plan B							
Male	11	1,452	2,927	2,786	189	2	7,367
Female	3	339	583	345	12	-	1,282
Plan C							
Male	1,476	1,967	316	63	12	-	3,834
Female	297	301	48	7	-	-	653
Grand Totals:	6,367	23,968	26,860	27,107	13,067	1,732	99,101

Exhibit C-4
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
All Plans

Count

Age	Years of Service												Total
	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	275	283	108	50	15	1	-	-	-	-	-	-	732
25-29	1,233	1,327	1,036	827	656	556	-	-	-	-	-	-	5,635
30-34	1,077	1,338	1,359	1,392	1,505	3,889	574	12	-	-	-	-	11,146
35-39	644	846	893	1,013	1,059	4,171	3,333	822	41	-	-	-	12,822
40-44	427	503	535	644	692	2,614	3,610	3,042	1,203	77	-	-	13,347
45-49	279	367	383	409	462	1,731	2,526	2,867	3,617	805	65	2	13,513
50-54	207	237	262	296	302	1,276	1,861	2,154	3,565	2,537	1,663	145	14,505
55-59	142	162	175	221	224	981	1,332	1,628	2,322	1,921	2,544	950	12,602
60-64	46	87	102	112	129	652	1,040	1,176	1,654	1,094	1,526	1,486	9,104
65 & Over	15	22	45	48	55	373	697	860	1,324	670	679	907	5,695
Total Count	4,345	5,172	4,898	5,012	5,099	16,244	14,973	12,561	13,726	7,104	6,477	3,490	99,101

Compensation

Age	Years of Service												Average
	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	58,266	68,392	63,280	69,495	71,550	45,348	-	-	-	-	-	-	63,942
25-29	58,267	65,964	68,569	72,908	75,854	78,114	-	-	-	-	-	-	68,128
30-34	66,941	68,870	71,903	72,516	77,353	81,746	87,851	89,291	-	-	-	-	76,146
35-39	71,149	73,314	80,605	79,102	80,315	88,131	97,078	92,271	108,916	-	-	-	87,075
40-44	69,831	71,910	78,790	79,436	80,509	93,294	99,664	98,377	103,300	115,418	-	-	93,735
45-49	68,984	68,387	73,374	75,862	78,685	90,398	97,285	101,269	106,662	118,599	129,382	143,664	97,858
50-54	67,097	67,360	72,859	81,046	79,381	86,211	92,995	100,679	105,473	119,632	120,857	116,251	103,012
55-59	68,887	69,334	73,441	73,467	74,920	85,493	88,875	92,070	95,175	111,562	110,620	112,631	98,615
60-64	72,766	67,195	85,663	72,134	80,125	84,209	84,638	86,094	89,178	105,080	107,875	108,400	95,417
65 & Over	105,609	72,855	84,241	89,965	127,061	89,499	83,047	85,454	83,471	91,748	100,139	99,654	90,151
Avg. Annual Compensation	$ 65,236	$ 69,021	$ 73,968	$ 75,748	$ 78,927	$ 86,893	$ 94,628	$ 96,172	$ 99,778	$ 112,416	$ 111,691	$ 107,625	$ 91,708

Exhibit C-4a
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
General Plan A

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	-	-	2	2
65 & Over	-	-	-	-	-	-	-	4	5	7	3	50	69
Total Count	-	-	-	-	-	-	-	4	5	7	3	52	71

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	-	-	74,100	74,100
65 & Over	-	-	-	-	-	-	-	102,819	122,827	104,318	94,560	116,241	113,788
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 102,819	$ 122,827	$ 104,318	$ 94,560	$ 114,620	$ 112,670

Exhibit C-4b
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
General Plan B

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	1	-	-	2	3
65 & Over	-	-	-	-	-	-	-	1	1	2	1	11	16
Total Count	-	-	-	-	-	-	-	1	2	2	1	13	19

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	63,120	-	-	93,744	83,536
65 & Over	-	-	-	-	-	-	-	85,848	191,676	133,008	141,264	115,583	122,264
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 85,848	$ 127,398	$ 133,008	$ 141,264	$ 112,223	$ 116,149

Exhibit C-4c
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
General Plan C

Count

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Total Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	-	-	11	11
65 & Over	-	-	-	-	-	-	-	-	-	-	-	13	13
Total Count	-	-	-	-	-	-	-	-	-	-	-	24	24

Compensation

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Average Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	-	-	90,766	90,766
65 & Over	-	-	-	-	-	-	-	-	-	-	-	115,205	115,205
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 104,004	$ 104,004

Exhibit C-4d
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
General Plan D

Count

	Years of Service												
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Total Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	1	-	-	8	-	-	-	-	-	-	9
30-34	1	2	5	8	4	263	264	9	-	-	-	-	556
35-39	5	5	18	14	13	683	1,952	472	31	-	-	-	3,193
40-44	1	4	10	10	18	551	2,388	2,046	692	60	-	-	5,780
45-49	2	5	13	8	17	379	1,762	1,942	2,151	496	43	1	6,819
50-54	1	3	6	12	10	263	1,300	1,463	2,146	1,369	747	109	7,429
55-59	1	3	3	5	8	195	957	1,159	1,508	1,151	1,303	569	6,862
60-64	-	2	4	2	5	114	751	789	1,079	688	756	597	4,787
65 & Over	-	1	2	2	2	73	459	555	741	353	310	201	2,699
Total Count	11	25	62	61	77	2,529	9,833	8,435	8,348	4,117	3,159	1,477	38,134

Compensation

	Years of Service												
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Average Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	81,912	-	-	55,322	-	-	-	-	-	-	58,276
30-34	54,240	54,540	77,484	81,924	84,756	82,925	72,455	79,532	-	-	-	-	77,695
35-39	116,506	117,936	96,871	92,469	96,742	95,638	88,474	83,957	102,168	-	-	-	89,660
40-44	66,228	86,934	108,572	67,558	86,513	104,351	95,247	94,332	95,778	107,735	-	-	95,921
45-49	47,514	113,503	96,138	94,158	110,238	102,221	95,718	99,581	100,175	108,912	118,529	156,840	99,732
50-54	79,560	144,356	194,874	149,937	116,710	97,429	91,883	100,504	102,964	110,014	104,726	112,884	102,149
55-59	44,460	74,716	193,808	111,156	86,894	94,408	89,641	94,032	97,130	110,286	109,098	118,740	101,779
60-64	-	158,838	122,670	104,796	161,441	94,713	86,493	89,412	93,368	110,456	112,161	115,787	100,017
65 & Over	-	111,720	85,236	68,550	73,740	88,570	82,759	90,724	86,280	95,134	109,818	118,166	92,879
Avg. Annual Compensation	$ 83,822	$ 108,025	$ 112,264	$ 99,681	$ 101,882	$ 96,919	$ 91,133	$ 95,276	$ 97,872	$ 108,722	$ 108,996	$ 117,062	$ 98,370

Exhibit C-4e
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
General Plan E

Count

	Years of Service												
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Total Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	2	-	-	-	-	-	-	2
30-34	-	-	-	-	1	44	76	-	-	-	-	-	121
35-39	-	-	-	-	-	113	394	147	2	-	-	-	656
40-44	-	-	-	-	-	70	492	455	204	3	-	-	1,224
45-49	-	-	-	-	-	80	405	541	659	88	3	-	1,776
50-54	-	-	-	-	1	50	376	454	801	513	401	18	2,614
55-59	-	-	-	-	-	64	320	382	627	548	962	322	3,225
60-64	-	-	-	-	-	59	271	362	539	371	736	839	3,177
65 & Over	-	-	-	-	-	44	226	296	572	303	359	625	2,425
Total Count	-	-	-	-	2	526	2,560	2,637	3,404	1,826	2,461	1,804	15,220

Compensation

	Years of Service												
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Average Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	57,300	-	-	-	-	-	-	57,300
30-34	-	-	-	-	64,944	79,813	62,286	-	-	-	-	-	68,681
35-39	-	-	-	-	-	81,281	76,336	70,836	87,702	-	-	-	75,990
40-44	-	-	-	-	-	82,798	82,890	78,765	74,787	103,072	-	-	80,050
45-49	-	-	-	-	-	88,289	81,188	83,137	83,739	80,264	89,784	-	83,017
50-54	-	-	-	-	65,136	83,790	82,459	81,570	83,826	92,119	85,928	77,980	85,139
55-59	-	-	-	-	-	75,948	79,764	76,311	77,342	96,503	93,948	87,262	86,632
60-64	-	-	-	-	-	89,937	76,179	75,756	77,565	90,918	100,918	99,595	90,257
65 & Over	-	-	-	-	-	111,504	79,720	75,133	78,697	86,034	90,980	91,059	84,874
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ 65,040	$ 85,424	$ 79,556	$ 78,527	$ 80,222	$ 91,628	$ 94,287	$ 94,221	$ 85,292

Exhibit C-4f
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
General Plan G

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	172	150	67	29	8	1	-	-	-	-	-	-	427
25-29	1,004	980	765	582	452	359	-	-	-	-	-	-	4,142
30-34	915	1,149	1,186	1,170	1,220	2,880	25	-	-	-	-	-	8,545
35-39	579	752	815	916	916	2,830	29	1	-	-	-	-	6,838
40-44	397	469	506	592	614	1,792	19	2	-	-	-	-	4,391
45-49	267	341	359	389	426	1,197	14	2	1	-	-	-	2,996
50-54	194	229	252	274	287	926	19	1	-	1	-	-	2,183
55-59	125	152	170	213	215	700	13	4	1	-	-	-	1,593
60-64	42	83	98	110	123	469	8	4	1	-	-	-	938
65 & Over	15	21	43	46	53	253	9	2	-	-	-	-	442
Total Count	3,710	4,326	4,261	4,321	4,314	11,407	136	16	3	1	-	-	32,495

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	46,417	49,215	46,703	55,709	55,068	45,348	-	-	-	-	-	-	48,235
25-29	53,422	56,718	58,636	61,769	63,277	62,508	-	-	-	-	-	-	58,201
30-34	64,576	65,098	68,558	67,390	70,480	74,060	75,152	-	-	-	-	-	69,655
35-39	69,769	70,757	78,927	76,878	76,350	81,331	104,890	75,108	-	-	-	-	77,738
40-44	68,720	70,436	77,500	78,083	77,743	87,758	164,117	99,756	-	-	-	-	80,636
45-49	67,326	66,272	71,717	74,585	75,950	85,239	139,489	59,100	43,188	-	-	-	77,381
50-54	63,598	65,591	69,329	76,841	77,907	81,892	119,546	285,252	-	41,832	-	-	76,351
55-59	58,505	67,441	70,806	71,631	74,193	82,533	131,695	173,673	124,116	-	-	-	76,029
60-64	61,104	64,396	84,152	71,540	76,354	79,721	137,679	104,250	114,660	-	-	-	77,229
65 & Over	105,609	71,004	84,195	90,896	129,074	85,274	159,673	72,234	-	-	-	-	92,474
Avg. Annual Compensation	$ 62,039	$ 64,428	$ 70,396	$ 71,843	$ 74,084	$ 80,460	$ 121,423	$ 120,890	$ 93,988	$ 41,832	$ -	$ -	$ 73,102

Exhibit C-4g
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
Safety Plan A

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	1	-	-	1
65 & Over	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Count	-	-	-	-	-	-	-	-	-	1	-	1	2

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	175,032	-	-	175,032
65 & Over	-	-	-	-	-	-	-	-	-	-	-	151,500	151,500
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 175,032	$ -	$ 151,500	$ 163,266

Exhibit C-4h
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
Safety Plan B

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	14	-	-	-	-	-	-	14
30-34	2	4	1	3	7	168	205	3	-	-	-	-	393
35-39	4	9	5	4	5	216	945	202	8	-	-	-	1,398
40-44	8	5	2	4	10	95	702	536	307	14	-	-	1,683
45-49	5	4	3	2	3	40	344	380	805	221	19	1	1,827
50-54	9	-	-	6	-	20	165	234	618	654	515	18	2,239
55-59	13	1	-	1	-	7	42	82	186	222	279	59	892
60-64	3	-	-	-	-	3	10	21	34	34	34	35	174
65 & Over	-	-	-	-	-	2	3	2	5	5	6	6	29
Total Count	44	23	11	20	25	565	2,416	1,460	1,963	1,150	853	119	8,649

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	111,791	-	-	-	-	-	-	111,791
30-34	77,376	100,725	129,516	112,864	111,178	117,770	117,957	118,568	-	-	-	-	117,369
35-39	97,302	97,909	115,339	95,994	107,902	118,285	122,965	127,383	140,364	-	-	-	122,587
40-44	100,416	98,947	122,316	119,460	101,074	120,839	124,557	130,384	139,200	150,989	-	-	128,749
45-49	135,794	101,166	119,848	102,078	128,316	117,333	122,518	135,937	142,840	155,603	160,194	130,488	138,520
50-54	141,231	-	-	124,138	-	114,494	122,603	137,951	142,240	161,465	171,453	174,909	152,642
55-59	157,909	141,840	-	138,444	-	116,491	127,593	133,188	139,287	155,345	175,219	192,172	157,003
60-64	164,692	-	-	-	-	136,656	132,097	136,186	140,323	148,775	163,184	201,793	158,191
65 & Over	-	-	-	-	-	144,936	147,844	129,108	152,371	164,839	144,028	165,100	152,843
Avg. Annual Compensation	$ 132,823	$ 101,101	$ 119,126	$ 114,392	$ 108,538	$ 118,368	$ 123,064	$ 132,842	$ 141,716	$ 158,669	$ 171,911	$ 190,507	$ 139,045

Exhibit C-4i
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2021
Safety Plan C

Count

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Total Count
Under 25	103	133	41	21	7	-	-	-	-	-	-	-	305
25-29	229	347	270	245	204	173	-	-	-	-	-	-	1,468
30-34	159	183	167	211	273	534	4	-	-	-	-	-	1,531
35-39	56	80	55	79	125	329	13	-	-	-	-	-	737
40-44	21	25	17	38	50	106	9	3	-	-	-	-	269
45-49	5	17	8	10	16	35	1	2	1	-	-	-	95
50-54	3	5	4	4	4	17	1	2	-	-	-	-	40
55-59	3	6	2	2	1	15	-	1	-	-	-	-	30
60-64	1	2	-	-	1	7	-	-	-	-	-	-	11
65 & Over	-	-	-	-	-	1	-	-	-	-	-	-	1
Total Count	580	798	564	610	681	1,217	28	8	1	-	-	-	4,487

Compensation

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Average Comp.
Under 25	78,051	90,020	90,368	88,534	90,387	-	-	-	-	-	-	-	85,931
25-29	79,509	92,075	96,663	99,367	103,720	109,068	-	-	-	-	-	-	95,797
30-34	80,498	92,013	95,145	100,015	107,136	111,444	126,141	-	-	-	-	-	101,825
35-39	79,496	91,790	96,989	101,665	106,556	113,594	118,303	-	-	-	-	-	105,008
40-44	79,347	91,750	94,544	99,420	108,199	111,646	111,112	112,644	-	-	-	-	103,820
45-49	99,293	89,836	93,305	105,656	108,683	112,850	106,548	101,100	106,548	-	-	-	104,533
50-54	66,788	102,199	112,236	97,740	111,672	121,773	109,236	113,286	-	-	-	-	110,098
55-59	123,844	102,514	116,838	142,308	135,636	134,016	-	140,076	-	-	-	-	126,362
60-64	286,788	91,716	-	-	137,472	143,057	-	-	-	-	-	-	146,281
65 & Over	-	-	-	-	-	147,156	-	-	-	-	-	-	147,156
Avg. Annual Compensation	$ 80,206	$ 91,773	$ 95,858	$ 99,752	$ 106,062	$ 112,379	$ 116,368	$ 113,348	$ 106,548	$ -	$ -	$ -	$ 99,829

Exhibit C-5
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021
All Plans

	Retirement Year												Average
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Monthly Benefit
Under 35	-	-	-	-	-	1	9	8	18	80	17	133	$ 1,024
35-39	-	-	-	-	-	-	2	4	8	74	29	117	2,618
40-44	-	-	-	-	-	1	2	14	57	104	41	219	2,921
45-49	-	-	-	-	-	2	26	49	75	153	64	369	3,233
50-54	-	-	-	1	11	49	106	101	173	483	339	1,263	3,723
55-59	-	-	-	2	60	128	161	166	415	1,904	1,193	4,029	5,771
60-64	-	-	5	39	100	146	166	324	1,437	3,214	1,338	6,769	5,417
65-69	-	9	45	72	112	171	365	1,409	3,067	4,917	1,871	12,038	4,774
70-74	6	76	138	135	186	469	1,611	3,194	4,269	3,673	764	14,521	4,678
75-79	17	130	203	192	485	1,473	2,944	2,832	2,433	1,330	333	12,372	4,821
80-84	46	110	146	348	1,075	1,658	1,901	1,298	850	673	223	8,328	4,427
85-89	69	89	245	588	1,209	1,025	716	466	402	413	164	5,386	4,101
90-94	57	130	355	461	626	310	207	189	232	212	71	2,850	3,708
95-99	32	96	165	175	128	64	65	71	69	67	21	953	3,421
100 & Over	14	24	33	16	15	12	8	7	15	6	-	150	2,889
Total Count	241	664	1,335	2,029	4,007	5,509	8,289	10,132	13,520	17,303	6,468	**69,497**	
Avg Monthly Benefit	$ 2,420	$ 3,081	$ 3,165	$ 3,591	$ 4,559	$ 4,552	$ 5,248	$ 4,578	$ 4,619	$ 4,757	$ 5,104		**$ 4,679**

Exhibit C-5a
Distribution of Retired Members by Age and Retirement Year as of June 30, 2021
General Plan A

	Retirement Year												Average
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Monthly Benefit
Under 35	-	-	-	-	-	-	1	1	3	4	-	9	$ 644
35-39	-	-	-	-	-	-	-	2	1	3	2	8	1,590
40-44	-	-	-	-	-	-	2	4	4	1	1	12	2,066
45-49	-	-	-	-	-	-	1	3	3	-	-	7	3,007
50-54	-	-	-	1	-	4	4	5	3	3	1	21	2,442
55-59	-	-	-	-	1	2	1	6	4	8	5	27	3,520
60-64	-	-	1	3	2	5	8	16	19	31	2	87	3,570
65-69	-	4	14	12	11	24	93	218	521	205	36	1,138	5,317
70-74	2	39	41	36	49	223	566	1,215	849	219	71	3,310	5,867
75-79	11	55	84	66	299	715	1,493	1,035	354	242	85	4,439	5,705
80-84	26	65	65	241	709	948	1,034	329	217	233	96	3,963	5,032
85-89	38	57	171	433	892	669	272	165	188	207	95	3,187	4,390
90-94	33	100	279	362	501	172	101	105	144	130	49	1,976	3,739
95-99	29	78	143	156	96	44	44	54	51	48	19	762	3,346
100 & Over	11	23	33	16	11	10	5	5	9	4	-	127	3,004
Total Count	150	421	831	1,326	2,571	2,816	3,625	3,163	2,370	1,338	462	**19,073**	
Avg Monthly Benefit	$ 1,806	$ 2,498	$ 2,543	$ 3,091	$ 4,399	$ 4,560	$ 6,125	$ 6,192	$ 5,986	$ 4,585	$ 3,843		**$ 5,011**

Exhibit C-5b
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021
General Plan B

Age	Retirement Year Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	-	-	-	-	-	$ -
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	1	-	1	2,793
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	1	1	2	4,299
60-64	-	-	-	-	-	-	-	5	2	18	6	31	5,683
65-69	-	-	-	-	1	2	5	20	63	63	1	155	5,807
70-74	-	-	1	5	4	5	17	52	84	26	5	199	5,904
75-79	-	-	2	3	4	13	39	38	28	7	2	136	4,510
80-84	-	-	-	3	5	16	34	19	11	5	1	94	4,028
85-89	-	-	1	2	5	21	7	11	4	1	1	53	3,915
90-94	-	-	2	4	16	11	3	4	1	3	-	44	2,167
95-99	-	-	-	2	3	1	2	-	-	-	-	8	2,830
100 & Over	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Count	-	-	6	19	38	69	107	149	193	125	17	**723**	
Avg Monthly Benefit	$ -	$ -	$ 1,466	$ 1,470	$ 2,076	$ 2,475	$ 3,728	$ 4,800	$ 6,430	$ 6,799	$ 5,209		**$ 4,952**

Exhibit C-5c
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021
General Plan C

Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
	Retirement Year												
Under 35	-	-	-	-	-	-	-	-	-	1	-	1	$ 5,103
35-39	-	-	-	-	-	-	-	-	-	1	-	1	5,103
40-44	-	-	-	-	-	-	-	-	1	-	-	1	1,655
45-49	-	-	-	-	-	-	-	-	2	-	-	2	1,504
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	1	-	-	1	1	3	2,362
60-64	-	-	-	-	-	1	-	2	4	20	6	33	4,384
65-69	-	1	1	5	1	3	4	11	35	39	9	109	5,659
70-74	-	-	4	1	1	2	19	19	42	25	4	117	5,462
75-79	-	-	1	2	8	8	9	26	21	8	-	83	3,692
80-84	-	-	-	7	8	8	15	12	6	2	2	60	2,721
85-89	-	-	-	4	6	11	14	7	3	3	-	48	2,651
90-94	-	-	1	2	8	6	3	2	-	3	-	25	1,576
95-99	-	-	-	-	2	1	-	1	1	-	-	5	2,741
100 & Over	-	-	-	-	1	-	-	-	-	-	-	1	702
Total Count	-	1	7	21	35	40	65	80	115	103	22	**489**	
Avg Monthly Benefit	$ -	$ 1,880	$ 1,327	$ 1,083	$ 1,396	$ 2,119	$ 2,940	$ 3,392	$ 5,911	$ 6,087	$ 6,211		**$ 4,240**

Exhibit C-5d
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021
General Plan D

Age	Retirement Year											Total Count	Average Monthly Benefit
	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24		
Under 35	-	-	-	-	-	-	3	2	10	38	7	60	$ 866
35-39	-	-	-	-	-	-	1	-	1	25	13	40	1,708
40-44	-	-	-	-	-	-	-	5	25	37	17	84	2,045
45-49	-	-	-	-	-	2	7	13	27	60	17	126	2,302
50-54	-	-	-	-	3	5	18	22	73	270	189	580	2,242
55-59	-	-	-	-	8	18	45	59	250	773	387	1,540	2,862
60-64	-	-	-	5	17	40	52	182	540	1,428	841	3,105	3,939
65-69	-	-	3	6	19	50	147	451	964	2,419	934	4,993	4,348
70-74	-	1	2	16	33	98	251	551	1,485	1,637	340	4,414	3,862
75-79	-	-	2	10	36	132	301	700	887	481	96	2,645	3,493
80-84	-	-	5	12	42	123	315	404	288	179	37	1,405	2,895
85-89	-	-	2	12	33	110	183	125	73	55	23	616	2,598
90-94	-	-	1	4	24	55	43	32	22	22	6	209	2,261
95-99	-	-	-	3	10	9	4	4	2	3	1	36	1,573
100 & Over	-	-	-	-	1	-	-	1	1	2	-	5	1,095
Total Count	-	1	15	68	226	642	1,370	2,551	4,648	7,429	2,908	**19,858**	
Avg Monthly Benefit	$ -	$ 2,929	$ 1,816	$ 1,575	$ 1,783	$ 2,054	$ 2,414	$ 2,841	$ 3,617	$ 4,077	$ 4,543		**$ 3,662**

Exhibit C-5e
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021
General Plan E

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	1	-	2	1	19	4	27	$ 745
35-39	-	-	-	-	-	-	1	2	2	10	3	18	822
40-44	-	-	-	-	-	1	-	2	6	10	5	24	1,362
45-49	-	-	-	-	-	-	-	-	9	24	7	40	1,278
50-54	-	-	-	-	-	-	2	7	16	25	8	58	882
55-59	-	-	-	-	-	-	1	5	17	223	161	407	1,056
60-64	-	-	-	-	-	-	2	5	238	571	325	1,141	1,831
65-69	-	-	-	-	-	1	5	286	674	1,902	810	3,678	3,031
70-74	-	-	-	-	-	8	234	685	1,617	1,631	296	4,471	2,796
75-79	-	-	-	-	1	138	361	894	1,069	483	106	3,052	2,465
80-84	-	-	-	-	39	183	413	500	257	165	56	1,613	1,977
85-89	-	-	-	14	68	165	206	107	88	82	23	753	1,569
90-94	-	-	-	11	50	60	35	23	23	19	5	226	1,311
95-99	-	-	1	8	14	4	4	3	7	4	-	45	846
100 & Over	-	-	-	-	2	2	2	1	2	-	-	9	516
Total Count	-	-	1	33	174	563	1,266	2,522	4,026	5,168	1,809	**15,562**	
Avg Monthly Benefit	$ -	$ -	$ 81	$ 305	$ 553	$ 811	$ 1,268	$ 1,699	$ 2,612	$ 3,026	$ 3,297		**$ 2,479**

Exhibit C-5f
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021
General Plan G

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	-	-	1	-	1	$ 2,478
35-39	-	-	-	-	-	-	-	-	-	1	-	1	1,315
40-44	-	-	-	-	-	-	-	-	-	2	-	2	2,521
45-49	-	-	-	-	-	-	-	-	-	2	2	4	1,251
50-54	-	-	-	-	-	-	-	-	-	1	3	4	1,765
55-59	-	-	-	-	-	-	-	-	1	4	12	17	731
60-64	-	-	-	-	-	-	-	-	-	4	13	17	886
65-69	-	-	-	-	-	-	-	-	-	17	29	46	996
70-74	-	-	-	-	-	-	-	-	1	12	8	21	1,689
75-79	-	-	-	-	-	-	-	1	-	4	1	6	4,206
80-84	-	-	-	-	-	-	-	-	-	3	1	4	2,381
85-89	-	-	-	-	-	-	-	-	-	-	-	-	-
90-94	-	-	-	-	-	-	-	-	-	-	-	-	-
95-99	-	-	-	-	-	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Count	-	-	-	-	-	-	-	1	2	51	69	**123**	
Avg Monthly Benefit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,007	$ 2,530	$ 1,624	$ 1,080		**$ 1,337**

Exhibit C-5g
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021
Safety Plan A

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	-	2	3	-	5	$ -
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	1	1	-	2	6,820
45-49	-	-	-	-	-	-	-	-	-	1	-	1	5,252
50-54	-	-	-	-	1	-	3	-	1	-	-	5	6,259
55-59	-	-	-	-	1	1	1	-	3	3	1	10	4,369
60-64	-	-	-	-	2	1	4	1	29	14	7	58	9,168
65-69	-	4	15	19	17	32	31	170	165	40	26	519	9,881
70-74	4	36	84	58	78	108	465	485	83	85	35	1,521	9,005
75-79	6	75	111	111	129	452	708	113	60	96	42	1,903	8,448
80-84	20	45	76	84	271	378	87	32	70	85	29	1,177	7,699
85-89	31	32	71	122	204	48	34	51	45	64	22	724	6,862
90-94	24	30	71	78	26	6	21	22	41	35	11	365	6,221
95-99	3	18	21	6	3	5	11	9	8	12	1	97	5,978
100 & Over	3	1	-	-	-	-	1	-	3	-	-	8	5,138
Total Count	91	241	449	478	732	1,031	1,366	883	511	439	174	**6,395**	
Avg Monthly Benefit	$ 3,432	$ 4,107	$ 4,461	$ 5,848	$ 7,523	$ 8,578	$ 10,022	$ 10,419	$ 9,085	$ 7,232	$ 7,405		**$ 8,201**

Exhibit C-5h
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021
Safety Plan B

Age	Retirement Year											Total	Average
	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Count	Monthly Benefit
Under 35	-	-	-	-	-	-	5	3	2	13	5	28	$ 1,574
35-39	-	-	-	-	-	-	-	-	4	33	10	47	4,191
40-44	-	-	-	-	-	-	-	3	20	52	18	93	4,164
45-49	-	-	-	-	-	-	18	33	34	65	38	188	4,334
50-54	-	-	-	-	7	40	79	67	80	184	138	595	5,481
55-59	-	-	-	2	50	107	112	96	140	888	622	2,017	9,041
60-64	-	-	4	31	79	99	100	113	605	1,128	137	2,296	9,218
65-69	-	-	12	30	63	59	80	253	645	232	25	1,399	8,479
70-74	-	-	6	19	21	25	59	187	107	37	5	466	7,244
75-79	-	-	3	-	8	15	33	25	14	9	1	108	4,926
80-84	-	-	-	1	1	2	3	2	1	1	1	12	4,603
85-89	-	-	-	1	1	1	-	-	1	1	-	5	2,549
90-94	-	-	1	-	1	-	1	1	1	-	-	5	1,129
95-99	-	-	-	-	-	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Count	-	-	26	84	231	348	490	783	1,654	2,643	1,000	**7,259**	
Avg Monthly Benefit	$ -	$ -	$ 2,451	$ 2,666	$ 3,571	$ 3,907	$ 4,290	$ 6,484	$ 8,678	$ 9,642	$ 10,458		**$ 8,258**

Exhibit C-5i
Distribution of Retired Members and Beneficiaries by Age and Retirement Year
as of June 30, 2021
Safety Plan C

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	-	-	1	1	2	$ 3,294
35-39	-	-	-	-	-	-	-	-	-	1	1	2	3,522
40-44	-	-	-	-	-	-	-	-	-	1	-	1	3,035
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	3	3	6	1,925
60-64	-	-	-	-	-	-	-	-	-	-	1	1	2,035
65-69	-	-	-	-	-	-	-	-	-	-	1	1	2,125
70-74	-	-	-	-	-	-	-	-	1	1	-	2	21,561
75-79	-	-	-	-	-	-	-	-	-	-	-	-	-
80-84	-	-	-	-	-	-	-	-	-	-	-	-	-
85-89	-	-	-	-	-	-	-	-	-	-	-	-	-
90-94	-	-	-	-	-	-	-	-	-	-	-	-	-
95-99	-	-	-	-	-	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Count	-	-	-	-	-	-	-	-	1	7	7	**15**	
Avg Monthly Benefit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18,749	$ 5,307	$ 2,799		**$ 5,033**

Appendix D Member Contribution Rates

This section illustrates the member normal contribution rates and the normal plus cost-of-living contribution rates by entry age.

Exhibit D-1
Normal Member Contribution Rates

	General					Safety		
Entry Age	Plan A	Plan B	Plan C	Plan D	Plan G	Plan A	Plan B	Plan C
16	2.68%	5.36%	4.57%	4.57%	7.33%	4.17%	8.34%	11.11%
17	2.74%	5.48%	4.66%	4.66%	7.33%	4.17%	8.34%	11.11%
18	2.80%	5.59%	4.76%	4.76%	7.33%	4.17%	8.34%	11.11%
19	2.86%	5.71%	4.87%	4.87%	7.33%	4.25%	8.50%	11.11%
20	2.92%	5.83%	4.97%	4.97%	7.33%	4.34%	8.67%	11.11%
21	2.98%	5.95%	5.07%	5.07%	7.33%	4.42%	8.85%	11.11%
22	3.04%	6.08%	5.18%	5.18%	7.33%	4.51%	9.03%	11.11%
23	3.10%	6.21%	5.29%	5.29%	7.33%	4.61%	9.21%	11.11%
24	3.17%	6.34%	5.40%	5.40%	7.33%	4.70%	9.40%	11.11%
25	3.24%	6.47%	5.52%	5.52%	7.33%	4.74%	9.48%	11.11%
26	3.30%	6.61%	5.63%	5.63%	7.33%	4.78%	9.55%	11.11%
27	3.37%	6.75%	5.75%	5.75%	7.33%	4.87%	9.75%	11.11%
28	3.45%	6.89%	5.87%	5.87%	7.33%	4.97%	9.95%	11.11%
29	3.52%	7.04%	6.00%	6.00%	7.33%	5.08%	10.15%	11.11%
30	3.59%	7.19%	6.12%	6.12%	7.33%	5.14%	10.28%	11.11%
31	3.67%	7.34%	6.25%	6.25%	7.33%	5.20%	10.40%	11.11%
32	3.75%	7.50%	6.38%	6.38%	7.33%	5.31%	10.61%	11.11%
33	3.83%	7.66%	6.52%	6.52%	7.33%	5.41%	10.83%	11.11%
34	3.91%	7.82%	6.66%	6.66%	7.33%	5.52%	11.04%	11.11%
35	3.99%	7.98%	6.80%	6.80%	7.33%	5.63%	11.27%	11.11%
36	4.07%	8.14%	6.95%	6.95%	7.33%	5.75%	11.49%	11.11%
37	4.15%	8.30%	7.10%	7.10%	7.33%	5.86%	11.72%	11.11%
38	4.23%	8.47%	7.25%	7.25%	7.33%	5.98%	11.95%	11.11%
39	4.32%	8.63%	7.40%	7.40%	7.33%	6.09%	12.19%	11.11%
40	4.40%	8.80%	7.55%	7.55%	7.33%	6.21%	12.43%	11.11%
41	4.49%	8.97%	7.70%	7.70%	7.33%	6.34%	12.67%	11.11%
42	4.57%	9.15%	7.85%	7.85%	7.33%	6.45%	12.91%	11.11%
43	4.66%	9.32%	8.01%	8.01%	7.33%	6.56%	13.12%	11.11%
44	4.75%	9.49%	8.17%	8.17%	7.33%	6.65%	13.30%	11.11%
45	4.83%	9.66%	8.33%	8.33%	7.33%	6.70%	13.40%	11.11%
46	4.91%	9.83%	8.49%	8.49%	7.33%	6.70%	13.40%	11.11%
47	4.99%	9.97%	8.66%	8.66%	7.33%	6.70%	13.40%	11.11%
48	5.04%	10.09%	8.82%	8.82%	7.33%	6.70%	13.40%	11.11%
49	5.09%	10.18%	8.98%	8.98%	7.33%	6.70%	13.40%	11.11%
50	5.12%	10.23%	9.14%	9.14%	7.33%	6.70%	13.40%	11.11%
51	5.13%	10.25%	9.30%	9.30%	7.33%	6.70%	13.40%	11.11%
52	5.13%	10.25%	9.43%	9.43%	7.33%	6.70%	13.40%	11.11%
53	5.13%	10.25%	9.54%	9.54%	7.33%	6.70%	13.40%	11.11%
54	5.13%	10.25%	9.63%	9.63%	7.33%	6.70%	13.40%	11.11%
55	5.13%	10.25%	9.68%	9.68%	7.33%	6.70%	13.40%	11.11%
56	5.13%	10.25%	9.70%	9.70%	7.33%	6.70%	13.40%	11.11%
57	5.13%	10.25%	9.70%	9.70%	7.33%	6.70%	13.40%	11.11%
58	5.13%	10.25%	9.70%	9.70%	7.33%	6.70%	13.40%	11.11%
59	5.13%	10.25%	9.70%	9.70%	7.33%	6.70%	13.40%	11.11%
60	5.13%	10.25%	9.70%	9.70%	7.33%	6.70%	13.40%	11.11%

Exhibit D-2
Normal Plus Cost-of-Living Member Contribution Rates

	General					Safety		
Entry Age	Plan A	Plan B	Plan C	Plan D	Plan G	Plan A	Plan B	Plan C
16	4.94%	6.75%	5.80%	5.76%	9.08%	7.80%	11.09%	14.33%
17	5.05%	6.90%	5.91%	5.87%	9.08%	7.80%	11.09%	14.33%
18	5.16%	7.04%	6.04%	5.99%	9.08%	7.80%	11.09%	14.33%
19	5.28%	7.19%	6.18%	6.13%	9.08%	7.95%	11.31%	14.33%
20	5.39%	7.34%	6.30%	6.26%	9.08%	8.12%	11.53%	14.33%
21	5.50%	7.49%	6.43%	6.39%	9.08%	8.27%	11.77%	14.33%
22	5.61%	7.65%	6.57%	6.52%	9.08%	8.44%	12.01%	14.33%
23	5.72%	7.82%	6.71%	6.66%	9.08%	8.63%	12.25%	14.33%
24	5.85%	7.98%	6.85%	6.80%	9.08%	8.80%	12.50%	14.33%
25	5.98%	8.15%	7.00%	6.95%	9.08%	8.87%	12.61%	14.33%
26	6.09%	8.32%	7.14%	7.09%	9.08%	8.95%	12.70%	14.33%
27	6.22%	8.50%	7.29%	7.24%	9.08%	9.11%	12.97%	14.33%
28	6.36%	8.67%	7.44%	7.39%	9.08%	9.30%	13.24%	14.33%
29	6.49%	8.86%	7.61%	7.56%	9.08%	9.51%	13.50%	14.33%
30	6.62%	9.05%	7.76%	7.71%	9.08%	9.62%	13.68%	14.33%
31	6.77%	9.24%	7.93%	7.87%	9.08%	9.73%	13.84%	14.33%
32	6.92%	9.44%	8.09%	8.03%	9.08%	9.94%	14.11%	14.33%
33	7.06%	9.64%	8.27%	8.21%	9.08%	10.12%	14.41%	14.33%
34	7.21%	9.85%	8.45%	8.39%	9.08%	10.33%	14.69%	14.33%
35	7.36%	10.05%	8.62%	8.56%	9.08%	10.54%	14.99%	14.33%
36	7.51%	10.25%	8.81%	8.75%	9.08%	10.76%	15.29%	14.33%
37	7.66%	10.45%	9.00%	8.94%	9.08%	10.97%	15.59%	14.33%
38	7.80%	10.66%	9.19%	9.13%	9.08%	11.19%	15.90%	14.33%
39	7.97%	10.87%	9.38%	9.32%	9.08%	11.40%	16.22%	14.33%
40	8.12%	11.08%	9.57%	9.51%	9.08%	11.62%	16.54%	14.33%
41	8.28%	11.29%	9.76%	9.70%	9.08%	11.87%	16.85%	14.33%
42	8.43%	11.52%	9.95%	9.89%	9.08%	12.07%	17.17%	14.33%
43	8.60%	11.73%	10.16%	10.09%	9.08%	12.28%	17.45%	14.33%
44	8.76%	11.95%	10.36%	10.29%	9.08%	12.45%	17.69%	14.33%
45	8.91%	12.16%	10.56%	10.49%	9.08%	12.54%	17.83%	14.33%
46	9.06%	12.38%	10.77%	10.69%	9.08%	12.54%	17.83%	14.33%
47	9.20%	12.55%	10.98%	10.91%	9.08%	12.54%	17.83%	14.33%
48	9.30%	12.70%	11.18%	11.11%	9.08%	12.54%	17.83%	14.33%
49	9.39%	12.82%	11.39%	11.31%	9.08%	12.54%	17.83%	14.33%
50	9.44%	12.88%	11.59%	11.51%	9.08%	12.54%	17.83%	14.33%
51	9.46%	12.90%	11.79%	11.71%	9.08%	12.54%	17.83%	14.33%
52	9.46%	12.90%	11.96%	11.88%	9.08%	12.54%	17.83%	14.33%
53	9.46%	12.90%	12.10%	12.01%	9.08%	12.54%	17.83%	14.33%
54	9.46%	12.90%	12.21%	12.13%	9.08%	12.54%	17.83%	14.33%
55	9.46%	12.90%	12.28%	12.19%	9.08%	12.54%	17.83%	14.33%
56	9.46%	12.90%	12.30%	12.22%	9.08%	12.54%	17.83%	14.33%
57	9.46%	12.90%	12.30%	12.22%	9.08%	12.54%	17.83%	14.33%
58	9.46%	12.90%	12.30%	12.22%	9.08%	12.54%	17.83%	14.33%
59	9.46%	12.90%	12.30%	12.22%	9.08%	12.54%	17.83%	14.33%
60	9.46%	12.90%	12.30%	12.22%	9.08%	12.54%	17.83%	14.33%

Appendix E Historical Information

This section presents historical statistical information on LACERA's membership and the calculated contribution rates.

Exhibit E-1
Active Membership Data

	General Members					Safety Members					Total Members				
Valuation Date (June 30)	Number	Annual Salary (in millions)	Average Age	Average Service	Average Monthly Salary	Number	Annual Salary (in millions)	Average Age	Average Service	Average Monthly Salary	Number	Annual Salary (in millions)	Average Age	Average Service	Average Monthly Salary
1998	65,782	$ 2,837	44.7	12.9	$ 3,594	10,947	$ 725	39.9	13.8	$ 5,519	76,729	$ 3,562	44.0	13.0	$ 3,870
1999	68,652	$ 3,105	44.6	12.7	$ 3,769	11,024	$ 753	40.0	13.7	$ 5,696	79,676	$ 3,858	43.9	12.8	$ 4,035
2000	71,940	$ 3,353	44.4	12.5	$ 3,884	11,264	$ 790	39.8	13.8	$ 5,849	83,204	$ 4,143	43.8	12.6	$ 4,150
2001	75,048	$ 3,608	44.5	12.3	$ 4,006	12,021	$ 860	39.6	13.0	$ 5,967	87,069	$ 4,468	43.9	12.4	$ 4,277
2002	77,062	$ 3,833	44.7	12.3	$ 4,145	12,190	$ 894	39.6	13.8	$ 6,115	89,252	$ 4,727	44.0	12.5	$ 4,414
2003	75,995	$ 3,954	45.2	12.7	$ 4,336	11,765	$ 899	40.1	13.7	$ 6,370	87,760	$ 4,853	44.5	12.9	$ 4,609
2004	74,826	$ 3,967	45.6	13.1	$ 4,418	11,409	$ 885	40.6	14.7	$ 6,467	86,235	$ 4,852	44.9	13.3	$ 4,689
2005	75,167	$ 4,046	45.8	13.2	$ 4,486	11,217	$ 905	41.0	14.9	$ 6,722	86,384	$ 4,951	45.2	13.4	$ 4,777
2006	77,167	$ 4,267	45.7	13.0	$ 4,608	11,464	$ 969	41.2	15.0	$ 7,047	88,631	$ 5,236	45.1	13.3	$ 4,924
2007	79,829	$ 4,673	45.7	12.8	$ 4,878	12,267	$ 1,104	40.8	14.4	$ 7,499	92,096	$ 5,777	45.1	13.0	$ 5,227
2008	81,664	$ 5,017	45.8	12.8	$ 5,119	12,828	$ 1,187	40.5	13.7	$ 7,714	94,492	$ 6,204	45.1	12.9	$ 5,471
2009	82,878	$ 5,348	46.1	13.1	$ 5,377	12,910	$ 1,240	40.8	14.0	$ 8,002	95,788	$ 6,588	45.4	13.2	$ 5,731
2010	81,413	$ 5,318	46.6	13.6	$ 5,444	12,997	$ 1,257	41.3	14.5	$ 8,062	94,410	$ 6,575	45.9	13.7	$ 5,804
2011	80,145	$ 5,295	47.0	14.0	$ 5,506	12,641	$ 1,240	41.9	15.1	$ 8,172	92,786	$ 6,535	46.3	14.2	$ 5,869
2012	79,467	$ 5,272	47.3	14.4	$ 5,528	12,485	$ 1,230	42.3	15.5	$ 8,209	91,952	$ 6,502	46.7	14.6	$ 5,892
2013	79,006	$ 5,253	47.6	14.8	$ 5,541	12,539	$ 1,235	42.3	15.7	$ 8,207	91,545	$ 6,488	46.9	14.9	$ 5,906
2014	79,943	$ 5,488	47.6	14.9	$ 5,720	12,523	$ 1,253	42.6	15.8	$ 8,337	92,466	$ 6,741	47.0	15.0	$ 6,075
2015	81,228	$ 5,706	47.6	14.8	$ 5,854	12,446	$ 1,300	42.8	16.0	$ 8,702	93,674	$ 7,006	46.9	15.0	$ 6,233
2016	82,916	$ 5,950	47.4	14.6	$ 5,980	12,528	$ 1,343	42.8	16.0	$ 8,931	95,444	$ 7,293	46.8	14.8	$ 6,367
2017	84,513	$ 6,290	47.3	14.5	$ 6,202	12,698	$ 1,388	42.5	15.6	$ 9,110	97,211	$ 7,678	46.7	14.6	$ 6,582
2018	85,703	$ 6,610	47.2	14.4	$ 6,428	12,771	$ 1,452	42.2	15.3	$ 9,471	98,474	$ 8,062	46.6	14.5	$ 6,822
2019	86,392	$ 6,816	47.3	14.4	$ 6,574	12,794	$ 1,540	42.0	15.1	$ 10,032	99,186	$ 8,356	46.6	14.5	$ 7,020
2020	86,930	$ 7,186	47.3	14.4	$ 6,889	13,178	$ 1,591	41.4	14.4	$ 10,058	100,108	$ 8,777	46.5	14.4	$ 7,306
2021	85,963	$ 7,438	47.5	14.6	$ 7,210	13,138	$ 1,651	41.4	14.2	$ 10,471	99,101	$ 9,088	46.7	14.5	$ 7,642

Exhibit E-2
Retired Membership Data

Valuation Date (June 30)	General Members: Number	General Members: Annual Allowance (in millions)	General Members: Average Age	General Members: Average Monthly Benefit	Safety Members: Number	Safety Members: Annual Allowance (in millions)	Safety Members: Average Age	Safety Members: Average Monthly Benefit	Total Members: Number	Total Members: Annual Allowance (in millions)	Total Members: Average Age	Total Members: Average Monthly Benefit
1998	35,462	$ 692	71.1	$ 1,626	7,425	$ 267	62.5	$ 3,001	42,887	$ 959	69.6	$ 1,864
1999	35,837	$ 725	71.4	$ 1,686	7,674	$ 291	63.1	$ 3,166	43,511	$ 1,016	70.0	$ 1,947
2000	36,596	$ 780	71.4	$ 1,778	8,032	$ 324	63.1	$ 3,358	44,628	$ 1,104	69.9	$ 2,062
2001	37,077	$ 890	71.6	$ 2,001	8,319	$ 382	63.4	$ 3,828	45,396	$ 1,272	70.1	$ 2,336
2002	37,618	$ 914	71.8	$ 2,025	8,624	$ 403	63.7	$ 3,892	46,242	$ 1,317	70.3	$ 2,374
2003	38,283	$ 984	71.9	$ 2,142	8,949	$ 443	63.9	$ 4,128	47,232	$ 1,427	70.4	$ 2,518
2004	39,097	$ 1,056	72.0	$ 2,250	9,235	$ 478	64.2	$ 4,318	48,332	$ 1,534	70.5	$ 2,645
2005	40,251	$ 1,138	72.1	$ 2,355	9,518	$ 514	64.6	$ 4,504	49,769	$ 1,652	70.7	$ 2,766
2006	41,309	$ 1,224	72.2	$ 2,469	9,683	$ 549	65.0	$ 4,728	50,992	$ 1,773	70.8	$ 2,898
2007	41,584	$ 1,280	72.2	$ 2,565	9,808	$ 578	65.4	$ 4,914	51,392	$ 1,858	70.9	$ 3,013
2008	42,298	$ 1,356	72.4	$ 2,671	10,052	$ 623	65.8	$ 5,167	52,350	$ 1,979	71.1	$ 3,150
2009	42,825	$ 1,423	72.6	$ 2,768	10,244	$ 663	66.3	$ 5,394	53,069	$ 2,086	71.4	$ 3,275
2010	43,752	$ 1,514	72.7	$ 2,883	10,444	$ 706	66.7	$ 5,638	54,196	$ 2,220	71.6	$ 3,414
2011	44,726	$ 1,597	72.9	$ 2,976	10,645	$ 746	67.0	$ 5,836	55,371	$ 2,343	71.7	$ 3,526
2012	45,899	$ 1,686	73.0	$ 3,061	10,871	$ 789	67.3	$ 6,049	56,770	$ 2,475	71.9	$ 3,633
2013	46,939	$ 1,774	73.2	$ 3,149	11,147	$ 837	67.5	$ 6,261	58,086	$ 2,611	72.1	$ 3,746
2014	47,867	$ 1,836	73.4	$ 3,196	11,362	$ 876	67.8	$ 6,427	59,229	$ 2,712	72.3	$ 3,816
2015	48,958	$ 1,898	73.5	$ 3,231	11,648	$ 914	68.0	$ 6,541	60,606	$ 2,813	72.5	$ 3,867
2016	50,034	$ 1,988	73.6	$ 3,311	11,880	$ 965	68.3	$ 6,766	61,914	$ 2,952	72.6	$ 3,974
2017	51,083	$ 2,079	73.8	$ 3,391	12,241	$ 1,030	68.4	$ 7,012	63,324	$ 3,109	72.7	$ 4,091
2018	52,292	$ 2,192	73.9	$ 3,493	12,588	$ 1,104	68.5	$ 7,308	64,880	$ 3,296	72.8	$ 4,233
2019	53,560	$ 2,316	73.9	$ 3,603	12,947	$ 1,184	68.6	$ 7,620	66,507	$ 3,500	72.9	$ 4,385
2020	54,693	$ 2,436	74.0	$ 3,712	13,319	$ 1,270	68.8	$ 7,946	68,012	$ 3,706	73.0	$ 4,541
2021	55,828	$ 2,552	74.1	$ 3,809	13,669	$ 1,350	68.8	$ 8,228	69,497	$ 3,902	73.0	$ 4,679

Exhibit E-3
Contribution Rates

	General Plans					Safety Plans					Total All Plans				
Valuation Date (June 30)	Calculated Normal Cost	Member Contributions	Net Employer Normal Cost	UAAL Rate	Total Employer Contribution	Calculated Normal Cost	Member Contributions	Net Employer Normal Cost	UAAL Rate	Total Employer Contribution	Calculated Normal Cost	Member Contributions	Net Employer Normal Cost	UAAL Rate	Total Employer Contribution
1998	10.27%	3.06%	7.21%	0.00%	7.21%	25.00%	8.70%	16.30%	0.00%	16.30%	13.27%	4.21%	9.06%	0.00%	9.06%
1999	10.98%	3.20%	7.78%	0.00%	7.78%	25.41%	9.12%	16.29%	0.00%	16.29%	13.81%	4.36%	9.45%	0.00%	9.45%
2000	10.91%	3.33%	7.58%	0.00%	7.58%	25.22%	9.44%	15.78%	0.00%	15.78%	13.66%	4.51%	9.15%	0.00%	9.15%
2001	11.27%	3.45%	7.82%	0.00%	7.82%	25.47%	9.27%	16.20%	0.00%	16.20%	14.01%	4.57%	9.44%	0.00%	9.44%
2002	12.04%	3.53%	8.51%	0.21%	8.72%	25.92%	9.37%	16.55%	0.21%	16.76%	14.66%	4.63%	10.03%	0.21%	10.24%
2003	12.25%	3.72%	8.53%	4.66%	13.19%	25.89%	9.55%	16.34%	4.66%	21.00%	14.80%	4.81%	9.99%	4.66%	14.65%
2004	12.20%	3.82%	8.38%	6.41%	14.79%	24.61%	9.61%	15.00%	6.41%	21.41%	14.48%	4.88%	9.60%	6.41%	16.01%
2005	12.22%	3.91%	8.31%	5.33%	13.64%	24.69%	9.68%	15.01%	5.33%	20.34%	14.50%	4.97%	9.53%	5.33%	14.86%
2006	12.22%	4.07%	8.15%	3.49%	11.64%	24.70%	9.70%	15.00%	3.49%	18.49%	14.54%	5.12%	9.42%	3.49%	12.91%
2007	13.15%	4.38%	8.77%	2.24%	11.01%	26.04%	10.18%	15.86%	2.24%	18.10%	15.67%	5.51%	10.16%	2.24%	12.40%
2008	13.18%	4.47%	8.71%	1.99%	10.70%	26.01%	10.22%	15.79%	1.99%	17.78%	15.68%	5.59%	10.09%	1.99%	12.08%
2009	13.29%	4.57%	8.72%	4.12%	12.84%	26.08%	10.21%	15.87%	4.12%	19.99%	15.75%	5.65%	10.10%	4.12%	14.22%
2010	13.32%	4.68%	8.64%	6.47%	15.11%	25.00%	10.19%	14.81%	6.47%	21.28%	15.59%	5.75%	9.84%	6.47%	16.31%
2011	13.36%	4.91%	8.45%	7.89%	16.34%	25.09%	10.50%	14.59%	7.89%	22.48%	15.65%	6.00%	9.65%	7.89%	17.54%
2012	13.50%	5.01%	8.49%	10.09%	18.58%	25.42%	10.52%	14.90%	10.09%	24.99%	15.81%	6.08%	9.73%	10.09%	19.82%
2013	13.25%	5.01%	8.24%	11.90%	20.14%	24.67%	10.26%	14.41%	11.90%	26.31%	15.47%	6.03%	9.44%	11.90%	21.34%
2014	13.14%	5.09%	8.05%	10.04%	18.09%	24.71%	10.23%	14.48%	10.04%	24.52%	15.37%	6.08%	9.29%	10.04%	19.33%
2015	13.28%	5.22%	8.06%	8.49%	16.55%	24.71%	10.26%	14.45%	8.49%	22.94%	15.46%	6.18%	9.28%	8.49%	17.77%
2016	14.51%	5.72%	8.79%	9.73%	18.52%	25.54%	10.57%	14.97%	9.73%	24.70%	16.62%	6.65%	9.97%	9.73%	19.70%
2017	14.62%	5.87%	8.75%	10.10%	18.85%	25.69%	10.56%	15.13%	10.10%	25.23%	16.70%	6.76%	9.94%	10.10%	20.04%
2018	14.77%	6.04%	8.73%	10.99%	19.72%	25.70%	10.59%	15.11%	10.99%	26.10%	16.80%	6.88%	9.92%	10.99%	20.91%
2019	16.24%	6.74%	9.50%	11.73%	21.23%	28.58%	11.78%	16.80%	11.73%	28.53%	18.54%	7.68%	10.86%	11.73%	22.59%
2020	16.31%	6.86%	9.45%	13.75%	23.20%	28.95%	11.88%	17.07%	13.75%	30.82%	18.69%	7.80%	10.89%	13.75%	24.64%
2021	16.35%	6.94%	9.41%	13.58%	22.99%	29.09%	11.88%	17.21%	13.58%	30.79%	18.75%	7.87%	10.88%	13.58%	24.46%

Exhibit E-4
Funded Status History

		Market Value Basis			Actuarial Value Basis						
Valuation Year	Actuarial Accrued Liability (AAL)	Market Value of Assets (MVA)[1]	Unfunded AAL (UAAL)/Surplus MVA Basis	Funded Ratio MVA Basis	Actuarial Value of Assets (AVA)[1]	Unfunded AAL (UAAL)/Surplus AVA Basis	Funded Ratio AVA Basis	Annual Total Payroll	Asset Smoothing Ratio (AVA / MVA)	Asset Volatility Ratio (MVA / Payroll)	Liability Volatility Ratio (AAL / Payroll)
1996 [2]	17,300	18,600	1,300	107.5%	17,700	400	102.3%	3,356	95.2%	5.5	5.2
1997 [2]	19,300	21,100	1,800	109.3%	19,600	300	101.6%	3,373	92.9%	6.3	5.7
1998	20,960	22,332	1,372	106.5%	20,851	(109)	99.5%	3,562	93.4%	6.3	5.9
1999	22,785	24,382	1,597	107.0%	23,536	751	103.3%	3,858	96.5%	6.3	5.9
2000	24,721	27,257	2,536	110.3%	25,427	706	102.9%	4,143	93.3%	6.6	6.0
2001	26,490	23,916	(2,574)	90.3%	26,490	-	100.0%	4,469	110.8%	5.4	5.9
2002	28,437	24,085	(4,352)	84.7%	28,262	(175)	99.4%	4,730	117.3%	5.1	6.0
2003	30,474	24,616	(5,858)	80.8%	26,564	(3,910)	87.2%	4,934	107.9%	5.0	6.2
2004	32,700	28,094	(4,606)	85.9%	27,089	(5,611)	82.8%	4,942	96.4%	5.7	6.6
2005	34,375	30,904	(3,471)	89.9%	29,497	(4,878)	85.8%	5,051	95.4%	6.1	6.8
2006	36,259	34,256	(2,003)	94.5%	32,820	(3,439)	90.5%	5,333	95.8%	6.4	6.8
2007	39,503	40,073	570	101.4%	37,042	(2,461)	93.8%	5,886	92.4%	6.8	6.7
2008	41,975	37,834	(4,141)	90.1%	39,662	(2,313)	94.5%	6,257	104.8%	6.0	6.7
2009	44,469	29,723	(14,746)	66.8%	39,542	(4,927)	88.9%	6,673	133.0%	4.5	6.7
2010	46,646	32,629	(14,017)	69.9%	38,839	(7,807)	83.3%	6,739	119.0%	4.8	6.9
2011	48,599	38,587	(10,012)	79.4%	39,194	(9,405)	80.6%	6,705	101.6%	5.8	7.2
2012	50,809	37,453	(13,356)	73.7%	39,039	(11,770)	76.8%	6,675	104.2%	5.6	7.6
2013	53,247	41,334	(11,913)	77.6%	39,932	(13,315)	75.0%	6,656	96.6%	6.2	8.0
2014	54,942	47,223	(7,719)	86.0%	43,654	(11,288)	79.5%	6,815	92.4%	6.9	8.1
2015	56,819	48,308	(8,511)	85.0%	47,328	(9,491)	83.3%	7,078	98.0%	6.8	8.0
2016	62,199	47,347	(14,852)	76.1%	49,358	(12,841)	79.4%	7,390	104.2%	6.4	8.4
2017	65,311	52,217	(13,094)	80.0%	52,166	(13,145)	79.9%	7,749	99.9%	6.7	8.4
2018	68,527	55,737	(12,790)	81.3%	55,233	(13,294)	80.6%	8,079	99.1%	6.9	8.5
2019	74,635	57,712	(16,923)	77.3%	57,617	(17,018)	77.2%	8,423	99.8%	6.9	8.9
2020	78,275	57,925	(20,350)	74.0%	59,763	(18,512)	76.3%	8,819	103.2%	6.6	8.9
2021	81,898	72,282	(9,616)	88.3%	64,909	(16,989)	79.3%	9,080	89.8%	8.0	9.0

1. *Asset values exclude non-valuation reserves*
2. *Only rounded values are available.*

Exhibit E-5
Reconciliation of Changes in Unfunded Actuarial Accrued Liability or Surplus

Valuation Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Prior Year UAAL	9,405	11,770	13,315	11,288	9,491	12,841	13,145	13,294	17,018	18,512
Normal Cost	1,237	1,430	1,163	1,068	1,118	1,246	1,243	1,352	1,553	1,634
Contributions	(1,646)	(1,455)	(1,824)	(1,936)	(1,902)	(1,880)	(2,116)	(2,303)	(2,459)	(2,774)
Interest	724	895	999	814	682	954	968	976	1,212	1,311
Changes in Assumptions/Methodology	457	511	-	-	2,922	-	-	2,528	-	-
Changes in Benefit Provisions	-	-	-	-	-	-	-	-	-	-
Expected Current Year UAAL	10,177	13,151	13,653	11,234	12,311	13,161	13,240	15,847	17,324	18,683
Actual Current Year UAAL	11,770	13,315	11,288	9,491	12,841	13,145	13,294	17,018	18,512	16,989
Total (Gain)/Loss on UAAL	1,593	164	(2,365)	(1,743)	530	(16)	54	1,171	1,188	(1,694)
Asset (Gains)/Losses	2,337	893	(1,664)	(1,263)	496	(421)	(411)	477	701	(2,039)
Salary Increases	(629)	(563)	(291)	79	162	277	223	486	388	484
All Other Actuarial (Gains)/Losses	(115)	(166)	(410)	(559)	(128)	128	242	208	99	(139)

Exhibit E-6
Reconciliation of Changes in Calculated Employer Contribution Rate

Valuation Year	Prior Year Contribution Rate	Changes in Existing Amortization Bases	Assumption/ Method Changes	Salary/Payroll Variations	Plan Amendments	Asset (Gains)/Losses	Demographic/Other (Gains)/Losses	Current Year Contribution Rate
2004	14.65%	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	16.01%
2005	16.01%	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	14.86%
2006	14.86%	-0.29%	0.00%	0.02%	0.00%	-1.82%	0.14%	12.91%
2007	12.91%	-0.28%	1.34%	0.61%	0.00%	-2.14%	-0.04%	12.40%
2008	12.40%	-0.17%	0.00%	0.21%	0.00%	-0.24%	-0.12%	12.08%
2009	12.08%	-0.04%	-1.76%	0.21%	0.00%	3.91%	-0.18%	14.22%
2010	14.22%	0.00%	-0.27%	-0.10%	0.00%	2.29%	0.17%	16.31%
2011	16.31%	0.00%	0.25%	-0.14%	0.00%	1.39%	-0.27%	17.54%
2012	17.54%	0.00%	0.54%	-0.11%	0.00%	1.92%	-0.07%	19.82%
2013	19.82%	0.00%	0.82%	-0.01%	0.00%	0.74%	-0.03%	21.34%
2014	21.34%	0.00%	0.00%	-0.15%	0.00%	-1.43%	-0.43%	19.33%
2015	19.33%	0.00%	0.00%	0.04%	0.00%	-1.04%	-0.56%	17.77%
2016	17.77%	0.00%	2.87%	0.20%	0.00%	0.39%	-0.02%	21.21%
2017	21.21%	0.00%	0.00%	0.05%	0.00%	-0.32%	0.06%	21.00%
2018	21.00%	0.00%	0.00%	0.04%	0.00%	-0.30%	0.17%	20.91%
2019	20.91%	0.00%	1.10%	0.20%	0.00%	0.42%	-0.04%	22.59%
2020	22.59%	0.00%	1.09%	0.04%	0.00%	0.58%	0.34%	24.64%
2021	24.64%	0.00%	1.10%	0.39%	0.00%	-1.69%	0.02%	24.46%

1. Data not available.

Exhibit E-7
Funding Policy History

	Description of changes, if any	Effective Date	Impact on Contribution Rate	Impact on Funded Ratio	Rationale
2009	Changed from 3-year to 5-year asset smoothing. Included STAR reserve as a valuation asset. Adopted 30-year layered amortization period.	June 30, 2009	-1.68% [1]	4.40%	See June 30, 2009 valuation report.
2010	Included STAR reserve as a valuation asset.	June 30, 2010	-0.52% [1]	1.40%	See June 30, 2010 valuation report.
2011	Included STAR reserve as a valuation asset.	June 30, 2011	-0.52% [1]	1.20%	See June 30, 2011 valuation report.
2012	Included STAR reserve as a valuation asset for 2012 and future valuations (adopted February 2013).	June 30, 2012	-0.53% [1]	1.20%	See June 30, 2012 valuation report.
2019	Adopted 20-year layered amortization period for new layers. Existing layers are set to be no greater than 22 years, so they are fully amortized no later than 2042.	June 30, 2019	0.30%	0.00%	See June 30, 2019 valuation report.

1. Note that savings due to inclusion of STAR reserve as valuation asset are not cumulative from year to year.

Exhibit E-8
History of Changes in Economic Assumptions

Valuation Year	Price Inflation	Wage Inflation	Real Wage Inflation[1]	Investment Return Assumption	Real Investment Return[2]	Effective Date	Change in Contribution Rate	Change in Funded Ratio
2004	3.50%	3.75%	0.25%	7.75%	4.25%	July 1, 2004	1.65%	N/A[3]
2007	3.50%	4.00%	0.50%	7.75%	4.25%	July 1, 2007	0.66%	-1.3%
2011	3.45%	3.95%	0.50%	7.70%	4.25%	July 1, 2011	0.25%	-0.3%
2012	3.35%	3.85%	0.50%	7.60%	4.25%	July 1, 2012	0.54%	-0.7%
2013	3.00%	3.50%	0.50%	7.50%	4.50%	July 1, 2013	0.37%	-0.1%
2016	2.75%	3.25%	0.50%	7.25%	4.50%	July 1, 2016	1.14%	-1.4%
2019	2.75%	3.25%	0.50%	7.00%	4.25%	July 1, 2019	2.20%	-2.3%

1. Excess of assumed wage inflation over price inflation.
2. Excess of assumed investment return over price inflation.
3. Information not available.

Exhibit E-9
History of Changes in Demographic and Other Non-Economic Assumptions

	Demographic Assumption Revisions	Effective Date	Change in Contribution Rate	Change in Funded Ratio	Rationale
2004	Mortality, merit salary scale, retirement, termination, probability of refund, probability of eligible survivor revised.	July 1, 2004	-0.63%	N/A[1]	Refer to the 2004 Investigation of Experience Report.
2007	Mortality, retirement, termination, probability of refund, merit salary scale for Safety members revised.	July 1, 2007	0.68%	N/A[1]	Refer to the 2007 Investigation of Experience Report.
2010	Mortality, retirement, termination, probability of refund, assumed benefit commencement age revised.	July 1, 2010	-0.27%	-0.1%	Refer to the 2010 Investigation of Experience Report.
2013	Mortality, retirement, termination, probability of refund, merit salary scale for Safety members, probability of eligible survivor, assumption for beneficiary age, reciprocity assumption revised.	July 1, 2013	0.45%	-0.6%	Refer to the 2013 Investigation of Experience Report.
2016	Mortality, retirement, termination, probability of eligible survivor, assumed benefit commencement age, reciprocity assumption revised.	July 1, 2016	1.73%	-2.5%	Refer to the 2016 Investigation of Experience Report.
2019	Mortality, retirement, termination, probability of refund, merit salary scale, assumed benefit commencement age.	July 1, 2019	0.80%	-0.4%	2019 Investigation of Experience.

1. Information not available.

Appendix F 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 LACERA and include terms used exclusively by LACERA. 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.

Contingency Reserve

Reserves accumulated for future earning deficiencies, investment losses, and other contingencies. Additions include investment income and other revenues; deductions include investment expense, administrative expense, interest allocated to other reserves, funding the STAR Reserve, and distributions to the Contribution Credit Reserve. Amounts are allocated to the Contingency Reserve to the extent there are positive recognized earnings to allocate. The California Government Code (Sections 31592 and 31592.2) requires the Contingency Reserve to be set at a minimum of 1.0% of the market value of total assets.

County Contribution Credit Reserve

The accumulated balance of the County's proportionate share of excess earnings as stipulated in the Retirement System Funding Agreement between LACERA and the County. Additions include distributions from excess earning during the fiscal years ending 1994 through 1998 and related earnings. Deductions include payments, as the County authorizes, for future employer contributions due LACERA and for funding a portion of the Retiree Healthcare Program under the provisions of Internal Revenue Code 401(h).

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 the funded status of the Plan. 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.

Funding Goal

The Funding Goal is the funded status the Board of Investments would like LACERA to achieve. The main goal is to provide benefit security for its members as well as to achieve and maintain stable employer contributions that are as low as possible. A Funded Ratio equal to 100% is the Funding Goal.

Layered Amortization Period

Payment of each year's change in the Unfunded Actuarial Accrued Liability (UAAL) is amortized over separate closed periods. For LACERA, the original UAAL as of June 30, 2009 is being amortized over a closed 30-year period. Subsequent changes in the UAAL were amortized over new closed 30-year periods. Effective with the June 30, 2019 valuation all existing layers with more than 22 years remaining as of June 30, 2020 were re-amortized over closed 22-year periods. All new UAAL layers thereafter are amortized over closed 20-year periods beginning with the date the contribution is first expected to be made. All amortization payments are based on a level percent of pay.

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, including the Contingency Reserve, the County Contribution Credit Reserve, and any other reserves specifically excluded by the Board of Investments.

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.

STAR Reserve

Reserves accumulated for the payment of cost-of-living benefits as defined in California Government Code Section 31874.3.

Supplemental Targeted Adjustment for Retirees (STAR) Benefits Supplemental cost-of-living payments to retired members to restore purchasing power at a specified percentage level, as described in California Government Code Section 31874.3.

Surplus Funding

The excess, if any, of the Actuarial Value of Assets over the Actuarial Accrued Liability. Standard actuarial terminology defines this as the “Funding Excess.” LACERA uses the term “Surplus Funding.”

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.

BOARD LETTER/MEMO
CLUSTER FACT SHEET

☒ Board Letter ☐ Board Memo ☐ Other

CLUSTER AGENDA REVIEW DATE	2/23/2022	
BOARD MEETING DATE	3/15/2022	
SUPERVISORIAL DISTRICT AFFECTED	☐ All ☐ 1st ☒ 2nd ☐ 3rd ☐ 4th ☐ 5th	
DEPARTMENT(S)	Treasurer Tax Collector	
SUBJECT	Issuance and Sale of Los Angeles County Regional Financing Authority Lease Revenue Refunding Bonds, Series 2022 (Vermont Manchester Social Services Refunding Project) (2022 Refunding Bonds)	
PROGRAM	N/A	
AUTHORIZES DELEGATED AUTHORITY TO DEPT	☒ Yes ☐ No (delegated to CEO)	
SOLE SOURCE CONTRACT	☐ Yes ☒ No	
	If Yes, please explain why:	
DEADLINES/ TIME CONSTRAINTS	March 15, 2022	
COST & FUNDING	Total cost: Not to exceed $70 million	Funding source: County General Fund
	TERMS (if applicable): Negotiated sale of the 2022 Refunding Bonds (not to exceed $70 million) over a 15-year period.	
	Explanation: The Treasurer and Tax Collector is requesting authorization to issue the Los Angeles County Regional Financing Authority (Authority) Lease Revenue Refunding Bonds, Series 2022 (Vermont Manchester Social Services Refunding Project) in an aggregate principal amount not to exceed $70 million. The proceeds of the 2022 Refunding Bonds will be used to redeem outstanding bonds issued to fund the Vermont Manchester Social Services Project (2005 Bonds) and pay costs of issuance.	
PURPOSE OF REQUEST	The proceeds from the sale of the 2022 Refunding Bonds will be used to fully refund the currently outstanding 2005 Bonds of $69.74 million and generate net present value savings to the County's General Fund of approximately $[14.3] million or [20.5]%.	
BACKGROUND (include internal/external issues that may exist including any related motions)	In July 2005, the Community Redevelopment Agency of the City of Los Angeles issued the 2005 Bonds to finance the construction of the Vermont Manchester Social Services Project, located at 8300-8400 South Vermont Avenue in the City of Los Angeles. The County intends to issue the 2022 Refunding Bonds using a standard lease revenue structure. The 2022 Refunding Bonds are secured by annual base rental payments from the County to the Authority, which are subject to annual Board appropriation. The Facility will continue to be managed and maintained by ICO Vermont, LP (ICO) pursuant to the Lease Agreement between the County and ICO, and as amended by the delegated authority of the CEO, at no change to ICO's existing compensation.	
EQUITY INDEX OR LENS WAS UTILIZED	☐ Yes ☒ No If Yes, please explain how:	
SUPPORTS ONE OF THE NINE BOARD PRIORITIES	☐ Yes ☒ No If Yes, please state which one(s) and explain how:	
DEPARTMENTAL CONTACTS	• Keith Knox, Treasurer and Tax Collector, (213) 974-2101, kknox@ttc.lacounty.gov • Elizabeth Buenrostro Ginsberg, Chief Deputy Treasurer and Tax Collector, (213) 974-0703, eginsberg@ttc.lacounty.gov • Daniel Wiles, Assistant Treasurer and Tax Collector, (213) 974-7175, dwiles@ttc.lacounty.gov	

KEITH KNOX
TREASURER AND TAX COLLECTOR

COUNTY OF LOS ANGELES
TREASURER AND TAX COLLECTOR

Kenneth Hahn Hall of Administration
500 West Temple Street, Room 437, Los Angeles, California 90012
Telephone: (213) 974-2101 Fax: (213) 626-1812
ttc.lacounty.gov and propertytax.lacounty.gov

March 15, 2022

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

The Honorable Board of Directors
Los Angeles County Regional Financing Authority
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

ISSUANCE AND SALE OF
LOS ANGELES COUNTY REGIONAL FINANCING AUTHORITY
LEASE REVENUE REFUNDING BONDS, SERIES 2022
(VERMONT MANCHESTER SOCIAL SERVICES REFUNDING PROJECT)
(SECOND DISTRICT) (4 VOTES)

SUBJECT

The Treasurer and Tax Collector (the "Treasurer") is requesting authorization to issue the Los Angeles County Regional Financing Authority (the "Authority") Lease Revenue Refunding Bonds, Series 2022 (Vermont Manchester Social Services Refunding Project) (the "2022 Refunding Bonds"), in an aggregate principal amount not to exceed $70 million.

IT IS RECOMMENDED THAT YOUR BOARD:

1. Adopt the resolution authorizing: a) the issuance and sale of the 2022 Refunding Bonds on a tax-exempt basis with a not to exceed par amount of $70 million to refinance the Community Redevelopment Agency of the City of Los Angeles, California Lease Revenue Bonds, Series 2005 (Vermont Manchester Social Services Project) (the "2005 Bonds") that were issued to finance the Vermont Manchester Social Services Project; and b) the execution and delivery of various

legal documents required to issue the 2022 Refunding Bonds and complete the proposed transaction.

2. Find that the proposed Lease Agreement Amendment and Sublease Amendment are exempt from the California Environmental Quality Act (CEQA) for the reasons stated in this Board Letter and in the record of the project.

3. Approve the form of the Lease Agreement Amendment between the County and ICO Vermont, LP and the Sublease Amendment between the County and ICO Vermont Retail, LLC.

4. Authorize and grant delegated authority to the Chief Executive Officer, or her designee, to negotiate and execute any additional amendments to the Lease Agreement and Sublease, and any ancillary documents required to complete the proposed transaction.

IT IS RECOMMENDED THAT YOUR BOARD, ACTING AS THE BOARD OF DIRECTORS OF THE LOS ANGELES COUNTY REGIONAL FINANCING AUTHORITY:

1. Adopt the resolution authorizing: a) the issuance and sale of the 2022 Refunding Bonds on a tax-exempt basis with a not to exceed par amount of $70 million to refinance the 2005 Bonds; and b) the execution and delivery of various legal documents required to issue the 2022 Refunding Bonds and complete the proposed transaction.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

Approval of the above recommendations will authorize the issuance of the 2022 Refunding Bonds, and the execution and delivery of all related documents.

2005 Bonds

In July 2005, the Community Redevelopment Agency of the City of Los Angeles (the "Agency") issued the 2005 Bonds in the principal amount of $98.92 million to finance the construction of the Vermont Manchester Social Services Project, located at 8300-8400 South Vermont Avenue in the City of Los Angeles. The proceeds from the sale of the 2005 Bonds were used to construct a four-story office building with approximately 200,000 square feet of office space, approximately 4,000 square feet of retail space, and approximately 6,000 square feet of childcare space (which is adjacent to approximately 7,500 square feet of outdoor play space) and a six-story parking structure with approximately 908 parking spaces ("Facility"). The Facility, which is managed and maintained by ICO Vermont, LP ("ICO") as successor to ICO Vermont, LLC pursuant to the Lease Agreement between the County and ICO, currently houses programs managed by the County's Department of Public Social Services (DPSS), Department of Children and Family Services (DCFS), Child Support Services Department (CSSD) and Department of Mental Health (DMH). There are currently $69.74 million of outstanding 2005 Bonds, with a final maturity on September 1, 2037. Pursuant to the Sublease, the County subleases approximately 4,000 square feet of retail space to ICO Vermont Retail, LLC.

2022 Refunding Bonds

The proceeds from the sale of the 2022 Refunding Bonds will be used to fully refund $69.74 million of currently outstanding 2005 Bonds originally issued by the Agency. The 2022 Refunding Bonds will be issued on a tax-exempt basis and are expected to result in a significant reduction in interest costs to the County General Fund. Based on current market conditions, the 2022 Refunding Bonds would achieve net present value savings of approximately $[14.3] million or [20.5]% savings from the 2005 Bonds. ICO will continue to manage and maintain the Facility under the terms of an operating agreement with the County.

Amendments to Lease and Sublease

Under the Lease Agreement, ICO is paid a management fee, a component of which equals 4% of the current amount of the base rent paid by the County. The proposed 2022 Refunding Bonds would lower the base rent paid by the County, thereby lowering the management fee paid to ICO. As ICO will continue to provide the same level of service to manage the Facility, our recommendations include amending the Lease Agreement and Sublease to maintain ICO's current level of compensation.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

This action supports the County's Strategic Plan Goal #III.3: Pursue Operational Effectiveness, Fiscal Responsibility, and Accountability by providing a cost-effective source of financing to fund the capital construction needs of the County.

FISCAL IMPACT/FINANCING

Based on current market conditions, the County expects to issue the 2022 Refunding Bonds with a par amount of $[53.0] million and generate an additional $[11.3] million of proceeds through bond premium. The total proceeds from the issuance of the 2022 Refunding Bonds, combined with the release of the Reserve Fund from the 2005 Bonds in the approximate amount of $[6.4] million will generate sufficient proceeds to redeem the $69.74 million of currently outstanding 2005 Bonds and pay the costs of issuance for the transaction. The Resolution being presented to your Board requires the 2022

Refunding Bonds to be issued at a true interest cost not to exceed 4.0%. Given the current interest rate environment, the actual borrowing costs should be significantly lower and result in a true interest cost to the County of approximately [2.40]%.

The Treasurer intends to market the 2022 Refunding Bonds and determine the interest rates soon after approval by your Board and close the transaction in early April 2022. The Treasurer is recommending that the 2022 Refunding Bonds be structured with level debt service payments, with a final maturity on December 1, 2037, which is three months later than the scheduled maturity date of the 2005 Bonds. Based on the County's strong credit profile and current market conditions, the 2022 Refunding Bonds would generate approximately $[14.3] million or [20.5] % of net present value savings, with average annual net present value savings to the County General Fund of approximately $[841,000]. The total and average annual debt service payments required from the County General Fund for the 2022 Refunding Bonds are currently estimated to be $[77.4] million and $[4.9] million, respectively, through the final maturity in December 2037.

The actual interest cost, debt service payments and savings to the County from the sale of the 2022 Refunding Bonds will depend on market conditions at the time of sale.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

In May 2005, your Board approved a capital lease by and between the County and ICO Vermont, LLC, as predecessor in interest to ICO, and a sublease by and between the County and ICO Vermont Retail, LLC, to facilitate the construction of the Facility and approved the sale of the 2005 Bonds by the Agency to finance the project. The County intends to refund all of the outstanding 2005 Bonds with the issuance of the 2022 Refunding Bonds to take advantage of lower interest rates and achieve significant savings in debt service costs to the County General Fund.

The 2022 Refunding Bonds will be issued pursuant to the Marks-Roos Local Bond Pooling Act of 1985 through the Authority using a standard lease revenue structure. To facilitate the issuance of the 2022 Refunding Bonds under this structure, the County will enter into a Lease Agreement Amendment with ICO and a Sublease Amendment with ICO Vermont Retail, LLC. The 2022 Refunding Bonds will be issued pursuant to the terms of an Indenture, by and among the Authority, the County, ICO and Zions Bancorporation, National Association, as the Trustee. The 2022 Refunding Bonds will be secured by annual base rental payments from the County to the Authority, which are subject to annual appropriation by your Board. The Facility will be pledged as collateral to provide additional security to bondholders for the repayment of the 2022 Refunding Bonds. Upon final maturity of the 2022 Refunding Bonds in December 2037, the County will obtain title to the Facility.

Environmental Documentation

This project is exempt from CEQA, as specified in Class 1 of the Environmental Document Reporting Procedures and Guidelines adopted by the Board, and section 15301 of the State CEQA Guidelines (Existing Facilities). The proposed amendments to the Lease and Sublease are within a class of projects that have been determined not to have a significant effect on the environment and meet the criteria set forth in section 15301 of the State CEQA Guidelines (Guidelines), and Class 1 of the County's Environmental Document Reporting Procedures and Guidelines, Appendix G. In addition, based on the project records, it will comply with all applicable regulations, and there are no cumulative impacts, unusual circumstances, damage to scenic highways, listing on hazardous waste site lists compiled pursuant to Government Code section 65962.5, or indications that it may cause a substantial adverse change in the significance of a historical resource that would make the exemption inapplicable.

Financing Team

Given the relative complexity of this transaction, the Treasurer is recommending that the sale of the Bonds be conducted on a negotiated basis. BofA Securities, Inc. and Barclays were selected by the Treasurer from the County's prequalified Underwriter Pool to be the senior managing underwriter and the co-senior managing underwriter, respectively, with Public Resources Advisory Group appointed as the Municipal Advisor for this transaction. Hawkins Delafield & Wood LLP was selected by County Counsel to serve as Bond Counsel and Disclosure Counsel.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

The issuance and sale of the 2022 Refunding Bonds will help provide cost-effective financing for the County's essential capital facilities, which will serve to enhance and facilitate the delivery of vital government services.

CONCLUSION

Upon approval of the attached Resolutions, it is requested that the Executive Officer of the Board return two originally executed copies to the Public Finance Office of the Treasurer.

Respectfully submitted,

KEITH KNOX
Treasurer and Tax Collector

Attachments

KK:EBG:DW:TG:ad

c: Chief Executive Officer
Executive Officer, Board of Supervisors
Auditor-Controller
County Counsel

County of Los Angeles
INTERNAL SERVICES DEPARTMENT
1100 North Eastern Avenue
Los Angeles, California 90063

SELWYN HOLLINS
Director

Telephone: **(323) 267-2101**
FAX: **(323) 264-7135**

"Trusted Partner and Provider of Choice"

February 7, 2022

To: Supervisor Holly J. Mitchell, Chair
Supervisor Hilda L. Solis
Supervisor Sheila Kuehl
Supervisor Janice Hahn
Supervisor Kathryn Barger

From: Selwyn Hollins SH
Director

QUARTERLY UPDATE – INVESTMENTS TO ACCELERATE DIGITAL EQUITY

On November 16, 2021, the Board of Supervisors (Board) approved a motion to invest in immediate and longer-term efforts to provide affordable and reliable high-speed internet services to underserved communities impacted by the digital divide (Board Agenda Item 19). The motion designated the Internal Services Department (ISD) as the lead department responsible for coordinating the County's efforts on all community broadband infrastructure and residential service initiatives to close the digital divide. The motion also included several directives and instructed the ISD Director to report back to the Board with quarterly progress updates.

Attached for your review is the first quarterly update.

If you have any questions, please contact me at (323) 267-2101.

SH:sh

c: Executive Office, Board of Supervisors
Chief Executive Office
County Counsel
Department of Public Works

COUNTY OF LOS ANGELES
INTERNAL SERVICES DEPARTMENT
INVESTMENTS TO ACCELERATE DIGITAL EQUITY

QUARTERLY PROGRESS REPORT
February 2022

On November 16, 2021, the Board of Supervisors (Board) approved a motion to invest in immediate and longer-term efforts to provide affordable and reliable high-speed internet services to underserved communities impacted by the digital divide (Board Agenda Item 19).[1] This report provides a progress update on efforts to achieve the directives stated in the motion.

Directive #1: Establish the County's lead department.	
Directive	Status
a. Designate the Internal Services Department (ISD) as the lead department responsible for ensuring the County's efforts on all community broadband infrastructure and residential service initiatives to close the Digital Divide are coordinated and aligned under the County's Digital Divide Action Team, which is comprised of representatives from all County Departments and the Chief Executive Officer's Chief Information Office (CIO).	Completed

a. Lead Department

In April 2021, the CIO established the Los Angeles County Digital Divide Action Team Committee to develop a digital divide action plan aggregating all existing and planned digital divide efforts among County departments. The committee is chaired by the CIO and governed by provisions of a written charter. Members include executives and senior managers representing most County departments. ISD has been a member of the committee since its inception.

On November 18, 2021, the CIO facilitated a regular meeting of the committee and included ISD on the agenda to discuss the directives of the Board motion. After this meeting, ISD engaged with several departments in aligning initiatives to facilitate broadband access to underserved communities impacted by the digital divide. Additionally, ISD has proactively engaged in broadband access planning with other public

[1] Los Angeles County Board of Supervisors, Statement of Proceedings for the Regular Meeting, November 16, 2021

agencies, private sectors, community-based organizations, and various regional consortia.

As the designated lead department, ISD has also responded to Federal and State requests for public comments on regulatory policies that will impact the availability of funding for investments in the County's broadband strategy. All comments were submitted in coordination with the CIO, County Counsel, and Chief Executive Office. The policies included:

- November 2021: Comments to the California Public Utilities Commission (CPUC) Rulemaking for Apportionment of Funds for Federal Funding Account Grant Program.

- December 2021: Comments to the Federal Communications Commission (FCC) Rulemaking for the Affordable Connectivity Program.

- February 2022: Comments to the National Telecommunications and Information Administration (NTIA) Rulemaking for the Infrastructure Investment and Jobs Act Implementation.

Directive #2: Conduct a Countywide campaign on financial subsidy programs.	
Directive	Status
a. Instruct the Chief Executive Office (CEO), in consultation with ISD, to identify funding for a countywide promotional campaign to inform and educate constituents about financial subsidy programs that will assist with the costs of computers and internet service.	Completed
b. Instruct ISD through the Delete The Divide initiative to coordinate the countywide promotional campaign and subsidy programs, specifically the Federal Emergency Broadband Benefit. Additionally, the campaign should encourage the participation of all County Departments and, as appropriate, collaborations with internet service providers, telecommunication companies, school districts, regional consortia, community-based organizations, non-profits, and ethnic and hyperlocal media. Outreach must be conducted in the County's multiple threshold languages.	Completed *Phase1: EBB promotion* In Progress *Phase 2: ACP and other subsidy promotions*

a. <u>Funding for Countywide Promotional Campaign</u>

The CEO has identified $3 million in one-time funding to support the countywide promotional campaign.

b. Promotional Campaign

On May 12, 2021, the Federal Communications Commission (FCC) launched the Emergency Broadband Benefit (EBB) Program to help families and households struggling to afford internet service during the COVID-19 pandemic. The $3.2 billion program provided qualifying households with a monthly subsidy up to $50 for broadband service and a one-time subsidy up to $100 for the purchase of a computer, laptop or tablet. Eligible households on Tribal lands could receive a total monthly discount of up to $75.

A member of a household needed to meet one of the following criteria for the household to be eligible:

- Income at or below 135% of the Federal Poverty Guidelines or participates in certain assistance programs, such as SNAP, Medicaid or Lifeline.
- Approved to receive benefits under the free and reduced-price school lunch program or school breakfast program.
- Received a Federal Pell Grant during the current award year.
- Experienced a substantial loss of income due to job loss or furlough since February 29, 2020 and the household had a total income in 2020 at or below $99,000 for single filers and $198,000 for joint filers.
- Met the eligibility criteria for participating providers' existing low-income or COVID-19 program.

The enrollment process required two steps: 1) Submit an application for approval from the FCC, and 2) Contact a preferred participating provider to select an eligible plan and have the discount applied to the monthly bill. The financial subsidy was limited to one monthly service discount and one device per household, and benefits are paid by the EBB program directly to the provider.

An estimated 822,000 households in Los Angeles County are eligible for EBB, but FCC data indicates that less than 45% of eligible households are currently enrolled in the program. A related study by the University of Southern California examined broadband affordability and explored awareness and adoption of the EBB program among low-income households in California. The findings indicated many potential beneficiaries of the program are deterred by lack of information about eligibility and the application procedures.[2]

[2] Galperin, H., Bar, F. & Le, T. (2021). Broadband Affordability and the Emergency Broadband Benefit in California. *Connected Communities and Inclusive Growth*

On December 6, 2021, ISD launched a countywide promotional campaign to increase awareness of the EBB and encourage residents to enroll in the program (2.5 weeks after Board approval of the motion on November 16, 2021). The campaign consisted of a targeted multimedia, multi-language effort with support from the Board of Supervisors, 19 County departments, and numerous community-based organizations, school districts, medical agencies, faith-based organizations, and local businesses. The campaign was limited in duration to only 3 weeks because the EBB enrollment deadline was December 30, 2021.

In consideration of the time constraints, ISD implemented the promotional campaign in partnership with the California Emerging Technology Fund (CETF). CETF is a non-profit organization established by the California Public Utilities Commission for the purpose of advancing broadband access to underserved communities throughout the State of California. This partnership helped to ensure the consistency of promotional communications by utilizing existing statewide marketing models, which also minimized the costs associated with planning, logistics, public outreach, messaging, and data collection.

The following are the major promotional activities of the campaign. It should be noted that many County departments and partner organizations added value beyond these activities by proactively marketing EBB through their communication networks and professional affiliations.

- Training – ISD hosted 4 virtual training sessions on the EBB and enrollment process. The training was facilitated by CETF to 95 representatives from different County departments and partner organizations responsible for advising constituents on public resources.

- Media Buys – Press statements and ad units were provided to various media outlets to publish, which included call center telephone numbers and websites to assist with the enrollment process. Media marketing generated over 16 million impressions:

Media	Impressions
Television	12,633,946
Radio	2,946,099
Print	889,800
Facebook	347,563
Google Search	2,710
Total	16,900,118

- Media Interviews and Press Releases – A news media event was hosted at ISD Headquarters to answer questions regarding the EBB as well as the County's Delete The Divide initiative. Participants included reporters from 17 television, radio and newspaper outlets, including hyper-local and ethnic media.

Additionally, op-ed articles authored by Board Supervisors and press releases were published among 38 targeted community media outlets. This news coverage generated over 5 million ethnic media impressions:

Media	Impressions
Chinese	2,847,800
Hispanic	820,593
Filipino	525,000
African-American[3]	516,270
Korean	450,000
Total	5,159,663

- Printed Materials – Printed flyers and tri-fold brochures were distributed to County departments and partner organizations for distribution to constituents at offices, field visits and community events. A total of 457,400 multi-language collateral materials were provided:

Brochures	
English	26,600
Spanish	24,800
Chinese	12,800
Korean	10,000
Vietnamese	6,400
Total	80,600

Flyers	
English/Spanish	148,350
English/Chinese	114,500
English/Korean	56,700
English/Vietnamese	57,250
Total	376,800

- Digital Marketing – County departments and partner organizations were provided with a social press toolkit with assets to post on social media sites. There were 1,377 landing page views and 67 social media posts and shares.

- Text Messaging – A text message was developed for County departments and partner organizations that have experience sending automated text notifications to constituents in the target population. A total of 113,407 texts were sent via school districts and healthcare agencies.

- Telephone Calls – A total of 16,476 pre-recorded telephone messages were disseminated by school districts.

- Electronic Mail – A total of 17,638 emails were transmitted by school districts.

- Call Centers – CETF provided support with telephonic call centers to assist constituents with questions and EBB enrollments. The intake process received more than 5,000 calls/leads generated from the County's promotional campaign:

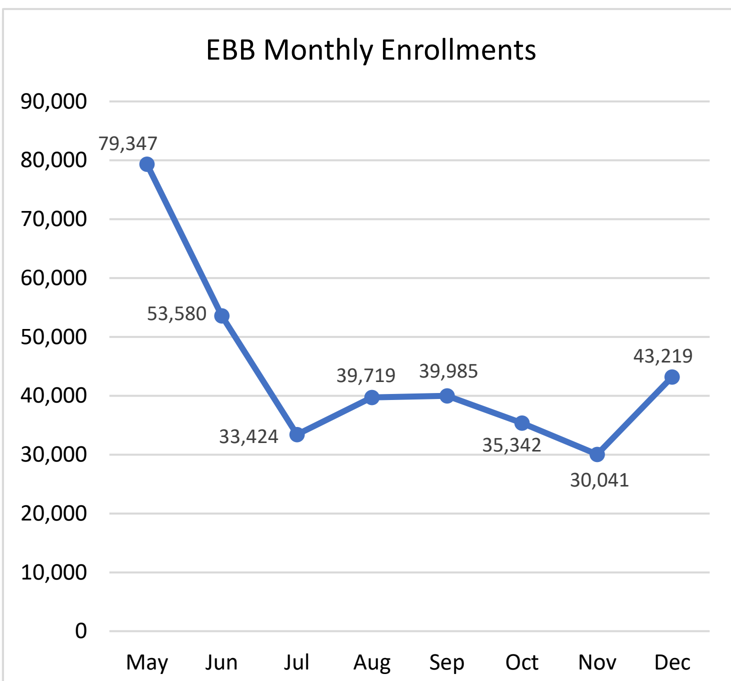
[3] Includes the general media market.

Media	Calls
Television	1,630
Radio	508
Print	133
Facebook	878
Google Search	32
Other Promotions	1,837
Total	5,018

Click on the following icon to view promotional materials and playback sample television and radio broadcasts:

DTD-EBB
Promotional Materi

FCC data based on zip codes indicate that new EBB enrollments in Los Angeles County reached 43,219 in December 2021.[4] This was a 43% increase from the previous month total of 30,041. It was also the highest monthly increase in new enrollments since the early stages of the program and reflects a spike among declining enrollments over the preceding months:



[4] Enrollments may vary from actual counts because some zip codes are shared by adjacent counties.

As of December 31, 2021, Los Angeles County had the largest number of household enrollments in the EBB program among counties within California:

County	Total Enrollments
Los Angeles	**354,657**
San Bernardino	112,097
San Diego	88,627
Riverside	84,256
Orange	71,903
All Other Counties	379,941
Total	1,091,511

On December 31, 2021, the EBB was replaced by the $14 billion Affordable Connectivity Program (ACP).[5] Under this new program, the monthly broadband benefit is reduced from $50 to $30. The monthly benefit will remain $75 for households on qualifying Tribal lands. Additionally, the income eligibility was raised from 135% to 200% of the Federal Poverty Line.

All households that enrolled in the EBB program will continue to receive their current monthly benefit up to $50 until March 1, 2022, after which the benefit will change to $30. EBB recipients do not need to take any action to continue receiving the monthly discount and will automatically transition to the ACP. However, households that qualified for EBB due to a substantial loss of income resulting from job loss or furlough since February 29, 2020 will need to requalify for ACP once the transition period ends on March 1, 2022. Similarly, households that met the eligibility criteria for a participating provider's COVID-19 program will need to requalify. In January 2022, these households were provided information about the steps they needed to take from the program administrator or their internet service provider.

More than 354,000 households are currently enrolled in the ACP (formerly EBB program), but this count is well below the estimated 822,000 households that are eligible. ISD is planning to launch a second phase of the promotional campaign to expand efforts in encouraging enrollments in the ACP as well as other financial subsidy programs. The second phase will begin in late February 2022 and continue for up to 9 months with a goal of enrolling more than 75% of eligible households. It will include a refined marketing strategy, disseminate information in more languages, and implement a workforce program with Digital Navigators. The Digital Navigators will be hired from within the targeted communities in close coordination with community-based organizations. All workers will be trained to provide constituents with in-person assistance in understanding and applying for subsidies, finding affordable devices, and technical support for accessing the internet.

[5] Affordable Connectivity Program website: https://www.fcc.gov/acp

ISD is currently planning a Digital Navigators program and will engage community-based organizations and existing practitioners to inform the program's design. In coordination with its consultant team, ISD will conduct outreach beginning in the month of February and interview several community-based organizations and/or existing practitioners. An RFC will also be released to obtain public feedback. The information collected will be used to develop a competitive solicitation process.

Additionally, ISD will seek more engagement from internet service providers and telecommunication companies in joining the County's efforts to promote and encourage new enrollments in the ACP.

Directive #3: Expand and/or enter into new agreements with the County's existing broadband and/or carrier agreements for public access and use.	
Directive	Status
a. Instruct and authorize ISD to negotiate agreements with assistance from County Counsel and input from the CEO, with internet service providers and telecommunication companies and if the proposed agreement can be shown by ISD to be in the County's best interest, return to the Board for approval to execute new agreements or amend existing agreements.	In Progress

a. <u>Negotiation of New and Existing Agreements</u>

ISD has engaged with some internet service providers and telecommunication companies regarding affordable and reliable high-speed internet service for households in underserved communities. The discussions have centered on reduced-rate service options if the County were to accept responsibility for direct payment of monthly fees to the service provider. Companies have suggested below market service plans with added incentives. However, as of the date of this report, ISD has not received a written proposal from any company or negotiated any agreements. Discussions are ongoing.

Directive #4: Provide options for internet solutions, including cost estimates and timeline, that meet the digital needs of our most vulnerable residents: affordability, sustainability, and connectivity to high speed, quality service.	
Directive	Status
a. Authorize ISD to amend its agreement, as needed, with the contractor that assisted in the development of its report to the Board in response to Item 45G of the August 31, 2021 Agenda, to perform additional analysis for the options identified in the aforementioned report and provide program development services for future solicitations.	Completed

Directive	Status
b. Instruct ISD to administer a competitive solicitation to acquire a Managed Service Provider to coordinate and manage implementation of the Community Wireless Network. The scope of work should include, but not be limited to, project management, infrastructure design, system integrations, performance requirements, equipment testing and maintenance, administration of resources, and customer support services.	In Progress
c. Instruct ISD to administer a competitive solicitation and negotiate agreements for public-private partnerships to construct and configure the Community Wireless Network.	In Progress
d. Instruct CEO, in consultation with ISD and DPW [Department of Public Works] to identify funding from Federal, State and/or County sources to support a five (5) year proof of concept model for a Community Wireless Network. Under the coordination of ISD, this pilot will utilize public-private partnerships and a Managed Service Provider for the deployment of a fully functional network of Citizen Broadband Radio Service and/or millimeter wave technologies to deliver reliable high-speed internet service to 12,500 households in digital divide target areas.	In Progress
e. Delegate authority to the CEO to hire a consultant to conduct a financial and technical feasibility study for a County-administered municipal broadband service. The study should assess capital costs and consumer pricing models that will enable reliable high-speed internet access for households in digital divide target areas. The study should also consider existing County assets and licensing agreements as well as the utilization of public and private fiber optic and wireless network infrastructures that can be included in the County-administered strategy.	In Progress

a. <u>Amend Contractor Agreement for Additional Analysis</u>

On December 21, 2021, ISD amended its original agreement with the contractor that assisted in the development of its report to the Board in response to Item 45G of the August 31, 2021 Agenda. The contractor will perform additional analysis for the options identified in the aforementioned report and provide program development services for future solicitations. Additionally, the contractor will support ISD in the sourcing of new Managed Service Providers and community-based organizations required for the Digital Navigator services, among other tasks aligned with this initiative.

b. Solicitation for Managed Service Provider(s)

The County is not currently equipped or positioned to carry out the logistics necessary to enable internet services in residential areas. Thus, ISD will be administering a competitive solicitation to onboard one or more Managed Service Providers to coordinate and manage implementation of a Community Wireless Network. The network is intended to be a 5-year pilot to provide free broadband access through public-private partnerships to 12,500 or more households in underserved communities in Los Angeles County.

Over the past several months, ISD conducted extensive market research of the technologies, logistics and administration required to deliver reliable, high-speed broadband services for a Community Wireless Network. ISD also commissioned a study to identify County assets and prospective service areas for offering residential broadband access. Additionally, ISD participated in discussions with GoldenStateNet on strategic designs of the middle-mile infrastructure that can facilitate cost and efficiency gains for last-mile connections.[6] GoldenStateNet is the name of the network created by CENIC's California Middle Mile Broadband Initiative (CCMMBI) to manage the development, acquisition, construction, maintenance, and operation of the statewide open-access middle-mile broadband network. CCMMBI was selected by the California Department of Technology as its third-party administrator to manage the statewide open-access middle-mile broadband network, which is funded through Governor Gavin Newsom's $6 billion "Broadband For All" legislation (Senate Bill No. 156).

In the interest of an inclusive process, ISD also issued a Request For Comments (RFC) from January 7, 2022 through January 21, 2022. The purpose was to obtain input from market participants to inform the solicitation requirements, network structure, technical specifications, evaluation metrics, and any other topics that will be instructive to facilitating a competitive solicitation. The RFC was widely disseminated to different industry sectors, public agencies and community-based organizations.

The RFC resulted in 33 written submissions from various entities, including service providers, equipment providers, community-based organizations, consortia, constituents, and an academic institution. In parallel, ISD's consultant outreached directly to 38 active firms in the wireless broadband industry to conduct market research interviews. These firms included managed service providers, original equipment manufacturers, and priority access license owners.

The interviews provided valuable information, such as potential technical approaches, data requirements, partnership structures, and evaluation parameters necessary to facilitate a competitive Request for Statement of Qualifications (RFSQ). The RFSQ is designed as a bench contract that will pre-qualify one or more managed services providers to compete for future work orders to deploy broadband networks in communities

[6] The California Department of Technology defines middle-mile as the physical mid-section of the infrastructure required to enable internet connectivity for homes, businesses, and community institutions. The middle-mile is made up of high-capacity fiber lines that carry large amounts of data at high speeds over long distances between local networks and global internet networks.

impacted by the digital divide. The RFSQ approach promotes competition amongst providers during the pilot phase and allows the County to expand the project's scope as new communities are identified for deployment.

The competitive solicitation is targeted for release in March 2022.

c. Solicitation for Public-Private Partnerships

In coordination with the solicitation discussed in 4(b) above, ISD will seek Board approval to execute public-private partnerships upon award and execution of the agreement with one or more Managed Service Providers. ISD is reviewing the feasibility and interest in the market for potential public-private partnerships with utilities and other owners of assets that would support the project. Recently, the County and City of Los Angeles signed a Memorandum of Understanding (MOU) that established a working partnership to commit resources towards digital equity and inclusion that will ensure residents and businesses have access to reliable high-speed internet. Both agencies will deploy their competitive advantages (including assets and operations) to bring new public connectivity infrastructure to communities and encourage collaboration on projects and funding opportunities that maximize efficiencies and public impact while reducing duplication of efforts and building toward a comprehensive regional strategy. This MOU was developed in consultation with County Counsel and City Attorney, and is in the interest of collaboration and alignment. Formal agreements may be negotiated should the need arise due to specific obligations, such as matters involving costs and indemnifications. ISD will seek Board approval to execute any formal agreements.

d. Funding for Community Wireless Network

The CEO, ISD, and DPW continue to explore Federal, State, and County funding sources. Updates will be provided in future report backs.

e. Feasibility Study for County-Administered Broadband Service

The CEO will utilize market research of the technologies, logistics and administration required to deliver reliable, high-speed broadband networks to develop the requirements for a competitive solicitation to hire a consultant to conduct a financial and technical feasibility study for a County-administered municipal broadband service.

INVESTMENTS TO **ACCELERATE DIGITAL EQUITY** FOR THE RESIDENTS OF THE COUNTY OF LOS ANGELES

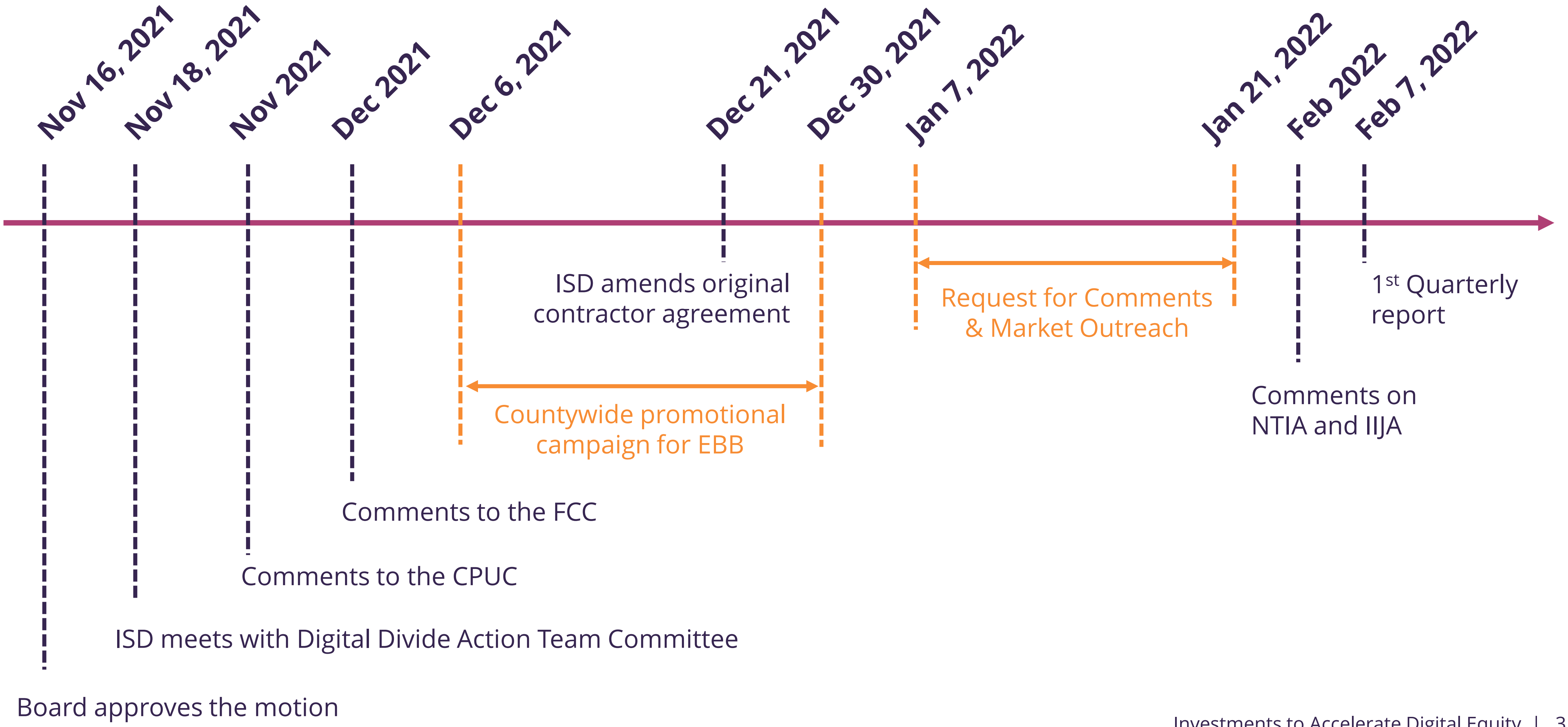
Operations Cluster Presentation

February 23, 2022

On November 16, 2021, the Board of Supervisors unanimously approved a motion to:

- Invest in efforts to provide affordable and reliable high-speed internet services to underserved communities impacted by the digital divide
- Designate ISD as the lead department responsible for coordinating community broadband infrastructure and residential service initiatives to close the digital divide
- ISD will update the Board quarterly with progress updates. The first quarterly update was submitted on February 7, 2022.

Progress Overview



Progress Overview

No.	Directive	Status
1 a.	Designate ISD as the lead department	Complete
2 a.	CEO in consultation with ISD to identify funding for a countywide promotional campaign about financial subsidy programs that will assist with the costs of computers and internet service	Complete
2 b.	ISD to coordinate the countywide promotional campaign and subsidy programs	Partial
3 a.	ISD to negotiate agreements with internet service providers and telecommunication companies	Ongoing
4 a.	ISD to amend its agreement, as needed, with the contractor	Complete
4 b.	ISD to administer a competitive solicitation to acquire a Managed Service Provider to coordinate and manage implementation of the Community Wireless Network	Ongoing
4 c.	ISD to administer a competitive solicitation and negotiate agreements for public-private partnerships to construct and configure the Community Wireless Network	Ongoing
4 d.	CEO, in consultation with ISD and DPW to identify funding to support a five-year proof of concept model for a Community Wireless Network	Ongoing
4 e.	CEO to hire a consultant to conduct a financial and technical feasibility study for a County administered municipal broadband service	Ongoing

Directive #1

Establish the County's Lead Department

ISD is engaging with multiple departments, agencies, and CBOs to align broadband initiatives. ISD also provided regulatory guidance to Federal and State authorities.

November 2021	Comments to the CPUC Rulemaking for Apportionment of Funds for Federal Funding Account Grant Program
December 2021	Comments to the Federal Communications Commission (FCC) Rulemaking for the Affordable Connectivity Program
February 2022	Comments to the National Telecommunications and Information Administration (NTIA) Rulemaking for the Infrastructure Investment and Jobs Act (IIJA) Implementation

Directive #2

Countywide Promotional Campaign

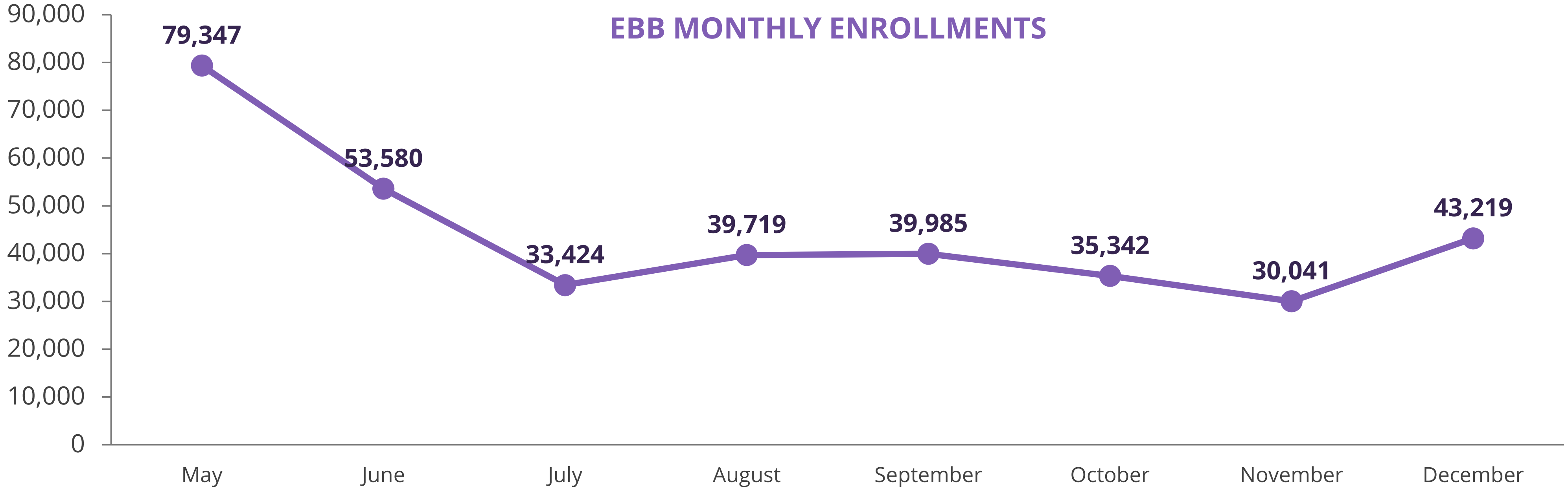
The CEO identified **$3 million** in one-time funding to promote EBB and ACP adoption; phase one launched in December 2021 and included:

- media buys
- press releases
- virtual training sessions
- print and digital marketing
- text messaging, telephone calls, email marketing
- call center

Directive #2

Countywide Promotional Campaign

The FCC reported a **43% increase** in EBB enrollments during the month of December. Los Angeles now has the most enrolled households among counties within California.



Directive #3

Negotiation of Carrier Agreements

ISD engaged with ISPs and telecommunication companies regarding affordable and reliable high-speed internet service for households in underserved communities.

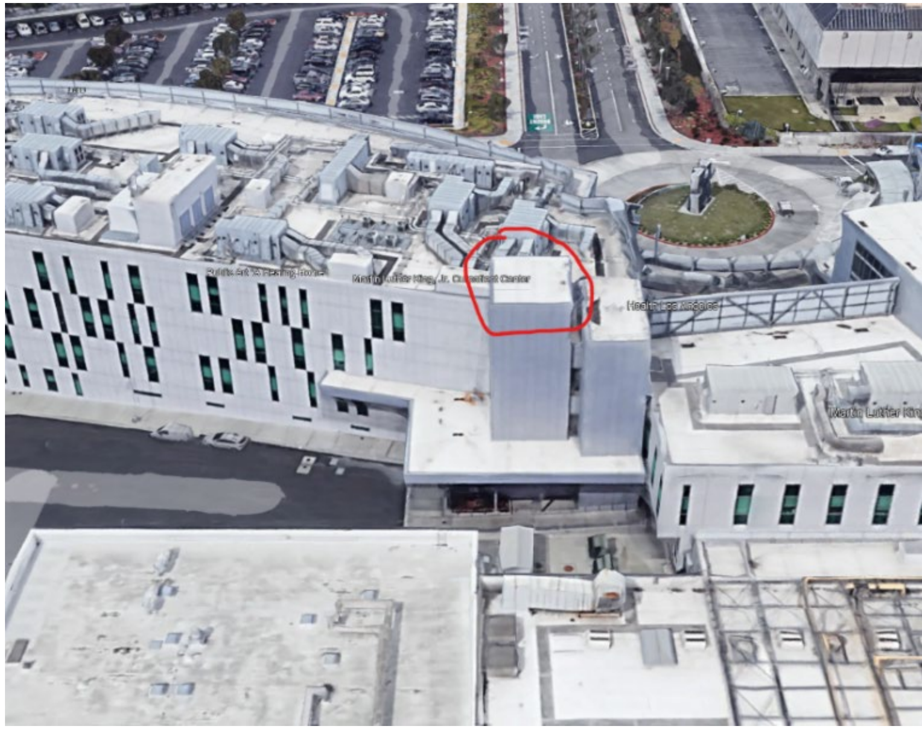
- Exploring reduced-rate service if the County were to directly pay monthly fees
- Companies have suggested below market service plans with added incentives
- No written proposals received to date

Directive #4

Developing a Community Network

ISD amended contract with its consultant to perform analysis to prepare a competitive solicitation of a Managed Services Provider (MSP)

- Conducted 20+ interviews with market participants
- Issued a public Request for Comments and reviewed 33 written responses
- Conducted site visits to identify viable County assets



Directive #4

Developing a Community Network

ISD plans to release a competitive solicitation to establish a bench of pre-qualified MSPs in **March 2022**.

- Pre-qualified MSPs will compete for future work orders to deploy broadband networks in communities impacted by the digital divide.
- RFSQ requires minimum speeds of **100 Mbps / 20 Mbps** with technology scalable to **100 Mbps / 100 Mbps**, aligning with Federal and State funding guidelines.
- ISD will seek Board approval to execute public-private partnerships with one or more MSPs

Directive #4

Developing a Community Network

ISD signed a **MOU with the City of Los Angeles**

- Established a working partnership to commit resources towards digital equity and inclusion initiatives
- Both agencies will deploy their assets and operations to bring new public connectivity infrastructure to communities
- Collaborating on projects and funding opportunities to maximize efficiencies and public impact while reducing duplication of efforts

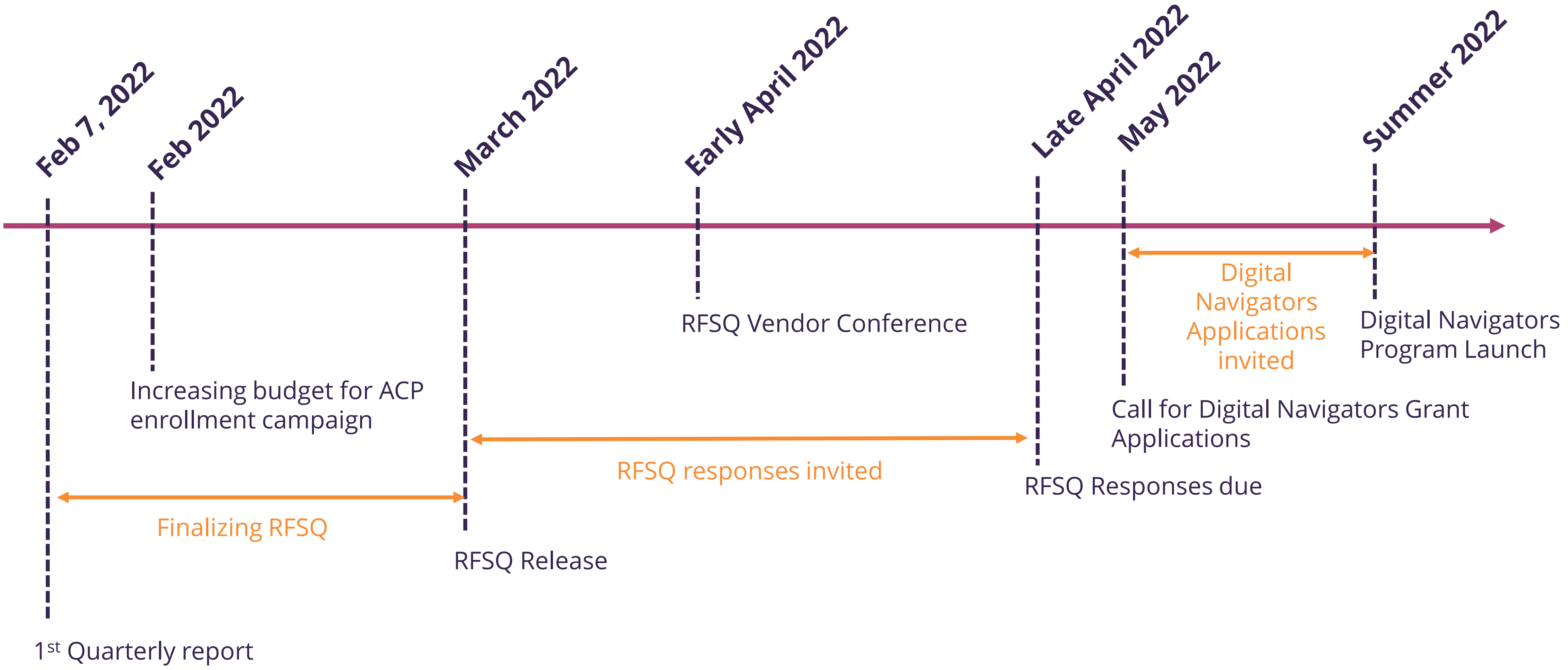
Directive #4

Developing a Community Network

The CEO will hire a consultant to conduct a **financial and technical feasibility study** for a County-administered municipal broadband service

- Utilize market research of potential technologies
- Develop requirements for a competitive solicitation

Next Steps


Feb 7, 2022
Feb 2022
March 2022
Early April 2022
Late April 2022
May 2022
Summer 2022
1st Quarterly report
Increasing budget for ACP enrollment campaign
Finalizing RFSQ
RFSQ Release
RFSQ responses invited
RFSQ Vendor Conference
RFSQ Responses due
Call for Digital Navigators Grant Applications
Digital Navigators Applications invited
Digital Navigators Program Launch

Questions?