

Alameda County Employees' Retirement Association (ACERA)

Governmental Accounting Standards Board Statement 68 (GASB 68) Actuarial Valuation

Actuarial Valuation Based on December 31, 2020
Measurement Date for Employer Reporting
as of June 30, 2021



This report has been prepared at the request of the Board of Retirement to assist the sponsors of the Fund in preparing their financial report for their liabilities associated with the ACERA pension plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Retirement and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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June 4, 2021

Board of Retirement
Alameda County Employees' Retirement Association
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Dear Board Members:

We are pleased to submit this Governmental Accounting Standards Board Statement 68 (GASB 68) Actuarial Valuation based on a December 31, 2020 measurement date for employer reporting as of June 30, 2021. It contains various information that will need to be disclosed in order for ACERA employers to comply with GASB 68.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist the sponsors in preparing their financial report for their liabilities associated with the ACERA pension plan. The census and financial information on which our calculations were based were provided by ACERA. That assistance is gratefully acknowledged.

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

The actuarial calculations were completed under the supervision of Eva Yum, FSA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the Retirement Association.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal

A handwritten signature in black ink that reads "Andy Yeung".

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

A handwritten signature in black ink that reads "Eva Yum".

Eva Yum, FSA, MAAA, EA
Senior Actuary

JB/jl

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards Board Statement 68 (GASB 68) for employer reporting as of June 30, 2021. The results used in preparing this GASB 68 report are comparable to those used in preparing the Governmental Accounting Standards Board (GASB) Statement 67 report for the plan based on a reporting date and a measurement date as of December 31, 2020. This valuation is based on:

- The benefit provisions of ACERA, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of November 30, 2019, provided by ACERA;¹
- The assets of the Plan as of December 31, 2020, provided by ACERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the December 31, 2020 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the December 31, 2020 valuation.

General observations on GASB 68 actuarial valuation

1. It is important to note that Governmental Accounting Standards Board (GASB) rules only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans develop and adopt funding policies under current practices.
2. When measuring pension liability, GASB uses the same actuarial cost method (Entry Age method) and the same type of discount rate (expected return on assets) as ACERA uses for funding. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on generally the same basis as ACERA's Actuarial Accrued Liability (AAL) measure for funding. We note that the same is generally true for the Normal Cost component of the annual plan cost for funding and financial reporting.

¹ It should be noted that starting with this year's valuation, we have also reflected the actual COLA granted by the Board on the April 1 immediately after the December 31, 2019 actuarial valuation that is used to roll forward the liabilities to determine the December 31, 2020 Net Pension Liability. In the past, we had used the expected COLA in the calculation.

Section 1: Actuarial Valuation Summary

3. The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the fair value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis.

Highlights of the valuation

1. For this report, the reporting dates for the employers are June 30, 2021 and June 30, 2020. The NPLs measured as of December 31, 2020 and 2019 have been determined by rolling forward the TPL as of December 31, 2019 and 2018, respectively. The Plan's Fiduciary Net Positions were valued as of the measurement dates. In addition, any changes in actuarial assumptions or plan provisions that occurred between the valuation date and the measurement date have been reflected. Consistent with the provisions of GASB 68, the assets and liabilities measured as of December 31, 2020 and 2019 are not adjusted or rolled forward to the June 30, 2021 and June 30, 2020 reporting dates, respectively.
2. As we disclosed in our December 31, 2020 funding valuation report, the 7.00% investment return assumption that the Board approved on October 15, 2020 for determining the liabilities for funding purposes and used for establishing the employer and employee contribution rates has continued to be developed without considering the impact of any future 50/50 excess earnings allocation. This is based on our understanding that Article 5.5 of the Statute, which authorizes the allocation of 50% of excess earnings to the SRBR, does not allow for the use of a different investment return for funding than is used for interest crediting. This would appear in effect to preclude the prefunding of the SRBR through the use of an assumption lower than the market earnings assumption of 7.00%.

As required by the Actuarial Standard of Practice (ASOP) No. 4 ("Measuring Pension Obligations and Determining Pension Plan Costs or Contributions"), we performed a stochastic model to estimate the impact of the 50% allocation of future excess earnings to the SRBR. The results of our model indicated that the 50/50 allocation of future excess earnings would have about the same impact as an "outflow" (i.e., assets not available to fund the benefits included in the determination of the TPL) that would average approximately 0.65% of assets over time. This approximated outflow was incorporated into our GASB crossover test¹ (Appendix A), along with the additional future employer contributions that would result from those future allocations of excess earnings to the SRBR under ACERA's funding policy.

3. The NPL measured as of December 31, 2020 was determined by rolling forward the TPL for the funded benefits as of December 31, 2019. Similar to last year, we have included in the TPL as of December 31, 2020 the non-OPEB unlimited

¹ The purpose of the GASB crossover test is to determine if the full expected return (or 7.00% in this case) can be used as the discount rate to determine the TPL and the NPL. That is, if there is no crossover point where the projected benefit payments would exceed the Plan's Fiduciary Net Position, then the full expected return assumption can be used. As detailed later in this report, ACERA does pass the crossover test, which means that the full 7.00% investment rate of return assumption can be used as the discount rate to determine the TPL and the resulting NPL.

Section 1: Actuarial Valuation Summary

Actuarial Accrued Liability (AAL) of \$116.4 million, which was calculated by rolling forward the total unlimited non-OPEB AAL as of December 31, 2019.

4. The results of this valuation reflect an experience study of the actuarial assumptions based on the experience during the period December 1, 2016 through November 30, 2019. Based on that study and the recommendations provided in our report dated September 9, 2020, the Board adopted updated actuarial assumptions for use in this valuation.
5. We have also continued the practice of adjusting the Plan's Fiduciary Net Position as of December 31, 2020 to include the \$41.7 million set aside by the Retirement Board in the SRBR reserve to pay non-vested Supplemental COLA and retired member death benefits¹ as of December 31, 2020. It should be noted that as of December 31, 2020, the deferred investment gain for the entire Plan was \$643.3 million. Consequently, after first replenishing the Contingency Reserve from \$69.0 million to \$98.7 million (1% of total assets), we have added to the Plan's Fiduciary Net Position the proportionate share of one-half of the net deferred investment gain that is commensurate with the size of the non-OPEB SRBR reserve, or \$13.8 million. The net effect of the adjustments to the Plan's Fiduciary Net Position as of December 31, 2020 for non-OPEB SRBR benefits was an addition of \$55.5 million.

Note that the proportionate share of one-half of the net deferred market gain as of December 31, 2020 for the Pension Plan was equal to \$306.4 million, and in calculating the Plan's Fiduciary Net Position we have adjusted the Pension Plan's valuation value of assets in the funding valuation to reflect that amount.

6. The \$60.9 million difference between the \$116.4 million added to the TPL and the net \$55.5 million added to the Plan's Fiduciary Net Position as of December 31, 2020 represents the NPL attributable to non-OPEB SRBR benefits.
7. In 2019, the Alameda County Office of Education (ACOE) made a lump sum contribution of \$750,000 to partially pay off their UAAL. That lump sum is greater than the amount that ACOE would have to make on an installment basis over 20 years. The non-OPEB SRBR NPL is allocated to the employers in proportion to the total employer contributions made by those employers to the Pension Plan. In order to have a more level allocation of the NPL to ACOE, ACERA approved an approach outlined in our March 2, 2020 letter to determine ACOE's proportionate share of the non-OPEB SRBR NPL by using the total annual UAAL contribution ACOE would have made of \$138,832 in 2020 if they did not make the additional contribution to partially pay off their UAAL.
8. The NPL increased from \$2,141 million as of December 31, 2019 to \$2,194 million as of December 31, 2020 primarily as a result of the changes in the actuarial assumptions (which increased the NPL by about \$237 million), offset somewhat by the favorable investment return during calendar year 2020 of about \$193 million² more than assumed. Changes in these values during the last

¹ We have excluded the liability and the assets associated with the OPEB component of the SRBR reserve account because it is our understanding that those amounts are reportable under GASB 74/75.

² This amount represents the investment income on the Plan's Fiduciary Net Position for the Pension Plan and non-OPEB SRBR that is above the assumed earnings (at 7.25%) for the year ending December 31, 2020.

Section 1: Actuarial Valuation Summary

two fiscal years ending December 31, 2019 and December 31, 2020 can be found in *Section 2, Schedule of Changes in Net Pension Liability* on page 20.

9. There was a decrease in the total employer pension expense from \$420.5 million calculated last year to \$271.8 million calculated this year. The primary cause of the decrease was due to the full recognition of: (a) expense from assumption changes implemented in the December 31, 2014 valuation and (b) investment loss from the December 31, 2015 valuation used in developing last year's pension expense.
10. The discount rates used to measure the TPL and NPL as of December 31, 2020 and December 31, 2019 were 7.00% and 7.25%, respectively, following the same assumptions used by ACERA in the pension funding valuations as of December 31, 2020 and December 31, 2019, respectively. As the Board adopted new actuarial assumptions (which includes a new discount rate of 7.00% along with other new demographic assumptions) for use in the pension funding valuation as of December 31, 2020, we have estimated the impact of these assumption changes by revaluing the TPL as of December 31, 2019 and rolling forward those results from December 31, 2019 to December 31, 2020. The detailed calculations used in the derivation of the discount rate of 7.00% as of December 31, 2020 can be found in *Section 3, Appendix A*. Various other information that is required to be disclosed can be found throughout *Section 2*.
11. It is important to note that this actuarial valuation is based on plan assets as of December 31, 2020. Due to the COVID-19 pandemic, market conditions have changed significantly since the onset of the Public Health Emergency. The plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after December 31, 2020. While it is impossible to determine how the pandemic will affect market conditions and other demographic experience of the plan in future valuations, Segal is available to prepare projections of potential outcomes upon request.
12. On July 30, 2020, the California Supreme Court issued a decision in the case of Alameda County Deputy Sheriff's Association et. al. v. Alameda County Employees' Retirement Association and Board of Retirement of ACERA. We were informed that the decision will not affect the Additional Cashout pay elements for Legacy members. Also, ACERA further indicated that they "will await the Trial Court ruling to determine any future changes which should be minor and only impact a few pay items." In early March 2021, ACERA informed us that there were no new updates on the Trial Court ruling. It should be noted that neither the December 31, 2020 assets provided by ACERA nor the liabilities we calculated using the membership data provided by ACERA reflect the financial impact of the Supreme Court decision, if any.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

Reporting Date for Employer under GASB 68 ¹		June 30, 2021	June 30, 2020
Measurement Date for Employer under GASB 68		December 31, 2020	December 31, 2019
Disclosure elements for fiscal year ending December 31:	• Service cost ²	\$221,824,117	\$215,625,191
	• Total Pension Liability	10,639,300,371	9,959,791,606
	• Plan's Fiduciary Net Position ³	8,444,884,496	7,819,098,646
	• Net Pension Liability	2,194,415,875	2,140,692,960
	• Pension expense	271,828,215	420,460,898
Schedule of contributions For plan year ending December 31:	• Actuarially determined contributions	\$309,758,947	\$298,526,950
	• Actual contributions ⁴	309,752,998	298,526,950
	• Contribution deficiency / (excess)	5,949	0
Demographic data for plan year ending December 31: ⁵	• Number of retired members and beneficiaries	10,292	10,078
	• Number of inactive vested members ⁶	3,028	2,821
	• Number of active members	11,322	11,336
Key assumptions as of December 31:	• Investment rate of return	7.00%	7.25%
	• Inflation rate	2.75%	3.00%
	• Projected salary increases ⁷	General: 8.35% to 3.65% and Safety: 11.25% to 4.05%	General: 8.30% to 3.90% and Safety: 11.30% to 4.30%

¹ The reporting date and measurement date for the plan are December 31, 2020 and December 31, 2019, respectively.

² The Service Cost is based on the previous year's valuation, meaning the December 31, 2020 and December 31, 2019 measurement date values are based on the valuations as of December 31, 2019 and December 31, 2018, respectively. Both service costs have been calculated using the assumptions shown in the December 31, 2019 measurement date column, as there had been no changes in the actuarial assumptions between the December 31, 2018 and December 31, 2019 valuations.

³ For the December 31, 2020 measurement date, the Plan's Fiduciary Net Position amount shown (\$8,444,884,496) includes the net fair value of assets (\$9,629,767,350) less OPEB-related SRBR assets (\$1,184,882,854). The OPEB-related SRBR assets include \$882,528,291 in the SRBR-OPEB reserve (after reducing the reserve by the \$7,548,683 SRBR implicit subsidy transfer), and \$9,051,620 in the 401(h) reserve, plus a proportionate share of one half of the deferred market gains (after adjustment to replenish the balance in the Contingency Reserve) commensurate with the size of the OPEB to total SRBR and 401(h) reserve to valuation and 401(h) reserves (\$293,302,943). For the December 31, 2019 measurement date, the Plan's Fiduciary Net Position amount shown (\$7,819,098,646) includes the net fair value of assets (\$8,789,279,051) less OPEB-related SRBR assets (\$970,180,405). The OPEB-related SRBR assets include \$877,769,175 in the SRBR-OPEB reserve (after reducing the reserve by the \$6,510,876 SRBR implicit subsidy transfer), and \$10,415,538 in the 401(h) reserve, plus a proportionate share of one half of the deferred market gains (after adjustment to replenish the balance in the Contingency Reserve) commensurate with the size of the OPEB to total SRBR and 401(h) reserve to valuation and 401(h) reserves (\$81,995,692). Note that amounts may not total properly due to rounding.

⁴ Employer contributions are on a net basis after (i) considering the total cash contributions made by the employers, (ii) reducing by the employer contributions made to the 401(h) account, and (iii) increasing by the amount of transfer from the SRBR to the Employers Advance Reserve for employer contributions made to the 401(h) account in (ii). For the year ending December 31, 2020, the actual employer contributions are less than the actuarially determined contributions by \$5,949 due to an underpayment by the Alameda County Office of Education in 2020.

⁵ Data as of December 31, 2019 is used in the measurement of the TPL as of December 31, 2020.

⁶ Includes members who left their contributions on deposit even though they have less than five years of service.

⁷ For measurement dates December 31, 2020 and December 31, 2019, includes inflation at 2.75% and 3.00%, respectively, plus real across-the-board salary increase of 0.50% plus merit and promotion increases.

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

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

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

Plan of Benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan of benefits.
Participant Data	An actuarial valuation for a plan is based on data provided to the actuary by ACERA. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	This valuation is based on the fair value of assets as of the measurement date, as provided by ACERA.
Actuarial Assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets or, if there are no assets, a rate of return based on a yield or index rate of 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 1: Actuarial Valuation Summary

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

The valuation is prepared at the request of the Board to assist the sponsors of the Fund in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

If ACERA is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

As Segal has no discretionary authority with respect to the management or assets of ACERA, it is not a fiduciary in its capacity as actuaries and consultants with respect to ACERA.

Section 2: GASB 68 Information

General information about the pension plan

Plan Description

Plan administration. The Alameda County Employees' Retirement Association (ACERA) was established by the Alameda County Board of Supervisors in 1947. ACERA is administered by the Board of Retirement and governed by the County Employees' Retirement Law of 1937 (California Government Code Section 31450 et. seq.). ACERA is a cost-sharing, multiple employer, defined benefit, public employee retirement system whose main function is to provide service retirement, disability, death, and survivor benefits to the General and Safety members employed by the County of Alameda. ACERA also provides retirement benefits to the employee members of First 5 Alameda County, Housing Authority of the County of Alameda, Alameda Health System, Livermore Area Recreation and Park District (LARPD), Superior Court of California—County of Alameda, and Alameda County Office of Education (ACOE).

The management of ACERA is vested with the ACERA Board of Retirement. The Board consists of nine members and two alternates. The County Treasurer is a member of the Board of Retirement by law and is elected by the general public. Four members are appointed by the Board of Supervisors, one of whom may be a County Supervisor. Two active members are elected by the General members; one active member and one alternate are elected by the Safety members; one retired member and one alternate are elected by the retired members. All members of the Board of Retirement serve terms of three years except for the County Treasurer whose term runs concurrent with his term as County Treasurer.

Plan membership. At December 31, 2020, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	10,292
Inactive vested members entitled to but not yet receiving benefits ¹	3,028
Active members	<u>11,322</u>
Total	24,642

Note: Data as of December 31, 2020 is not used in the measurement of the TPL as of December 31, 2020.

¹ Includes terminated members due a refund of member contributions.

Section 2: GASB 68 Information

Benefits provided. ACERA provides service retirement, disability, death, and survivor benefits to eligible employees. The first date of ACERA membership varies by employer, as follows:

- Alameda County, Alameda Health System and Alameda Superior Court Employees: Membership for these employees is effective on the first day of the second pay period following the employee's hire date in an ACERA covered position. This is the date of entry into ACERA membership. As of the date of entry, payroll deductions for retirement contributions begin and service credit for each hour worked is earned. During the short period between the beginning of employment and the ACERA plan date of entry, the employee does not pay contributions or earn service credit. A member may purchase this service credit (referred to as "days prior to entry") any time before retirement without changing the membership, but date of entry does not change.
- Housing Authority and Livermore Area Recreation and Park District Employees: Membership for these employees is effective on the first day of employee's hire in an ACERA covered position. The first date of employment is the date of entry into ACERA membership. As of this date of entry, payroll deductions for retirement contributions begin and service credit for each hour work is earned.
- First 5 Employees: Membership for these employees is effective on the first day of the second pay period following the employee's hire date.
- Office of Education Employees: This is a closed plan with no more active employees (i.e., there is no new ACERA membership. However, the employer does retain retired members and beneficiaries in the Retirement Association as of the December 31, 2020 valuation date).

There are separate retirement benefits for General and Safety members. Safety membership is extended to those involved in active law enforcement, deferred firefighters, or positions that have been designated as Safety by the Board of Retirement (e.g. Juvenile Hall Group Counselor, Probation Officer, etc.). All other employees are classified as General members.

Any new member who becomes a member on or after January 1, 2013 is placed into Tier 4 and is subject to the provisions of California Public Employees' Pension Reform Act of 2013 (PEPRA), California Government Code 7522 et seq. and Assembly Bill (AB) 197.

General members enrolled in Tiers 1, 2, or 3 are eligible to retire once they attain the age of 70 regardless of service or at age 50 with five or more years of retirement service credit and a total of 10 years of qualifying membership. A non-Tier 4 General member with 30 years of service is eligible to retire regardless of age. General members enrolled in Tier 4 are eligible to retire once they have attained the age of 52 and have acquired five years of retirement service credit, or at age 70 regardless of service.

Safety members enrolled in Tiers 1, 2, 2C, or 2D are eligible to retire once they attain the age of 70 regardless of service or at age 50 with five or more years of retirement service credit and a total of 10 years of qualifying membership. A non-Tier 4 Safety member with 20 years of service is eligible to retire regardless of age. Safety members enrolled in Tier 4 are eligible to retire once they have attained the age of 50 and have acquired five years of retirement service credit, or at age 70 regardless of service.

The retirement benefit the member will receive is based upon age at retirement, final average compensation, years of retirement service credit and retirement plan and tier.

The tiers and their basic provisions are listed below:

Section 2: GASB 68 Information

Tier Name	Service Retirement Governing Code Section	Effective Date	Basic Provisions	Final Average Salary Period	Plan Sponsors
General Tier 1	§31676.12	Various	2.0% at 57; maximum 3% COLA	Highest 1-year	All
General Tier 2	§31676.1	June 30, 1983*	2.0% at 61; maximum 2% COLA	Highest 3-years	All except LARPD
General Tier 3	§31676.18	October 1, 2008	2.5% at 55; maximum 3% COLA	Highest 1-year	LARPD
General Tier 4	§7522.20(a)	January 1, 2013	2.5% at 67; maximum 2% COLA	Highest 3-years	All
Safety Tier 1	§31664.1	Various	3.0% at 50; maximum 3% COLA	Highest 1-year	County
Safety Tier 2	§31664.1	June 30, 1983	3.0% at 50; maximum 2% COLA	Highest 3-years	County
Safety Tier 2C	§31664	October 17, 2010	2.6% at 55; maximum 2% COLA	Highest 3-years	County
Safety Tier 2D	§31664.2	October 17, 2010	3.0% at 55; maximum 2% COLA	Highest 3-years	County
Safety Tier 4	§7522.25(d)	January 1, 2013	2.7% at 57; maximum 2% COLA	Highest 3-years	County

* For Housing Authority members, the effective date is September 30, 2011.

For members enrolled in Tiers 1, 2, 2C, 2D, or 3, the maximum monthly retirement allowance is 100% of final compensation. There is no maximum for members enrolled in Tier 4.

The member may elect an unmodified retirement allowance, or choose an optional retirement allowance. The unmodified retirement allowance provides the highest monthly benefit and a 60% continuance to an eligible surviving spouse or domestic partner. An eligible surviving spouse or domestic partner is one married to or registered with the member one year prior to the effective retirement date. There are four optional retirement allowances the member may choose. Each of the optional retirement allowances requires a reduction in the unmodified retirement allowance in order to allow the member the ability to provide certain benefits to a surviving spouse, domestic partner, or named beneficiary having an insurable interest in the life of the member.

Section 2: GASB 68 Information

ACERA provides an annual cost-of-living benefit to all retirees. The cost-of-living adjustment, based upon the Consumer Price Index for the San Francisco-Oakland-Hayward Area (with 1982-84 as the base period), is capped at 3.0% for General Tiers 1 and 3 and Safety Tier 1, and at 2.0% for General Tiers 2 and 4 and Safety Tiers 2, 2C, 2D, and 4.

The County of Alameda and the other participating agencies contribute to the retirement plan based upon actuarially determined contribution rates adopted by the Board of Retirement. Employer contribution rates are adopted annually based upon recommendations received from ACERA's actuary after the completion of the annual actuarial valuation. The average employer contribution rate as of December 31, 2020 for 2020 (based on the December 31, 2018 valuation for the second half of 2019/2020 and on the December 31, 2019 valuation for the first half of 2020/2021) was 27.86% of compensation.

Members are required to make contributions to ACERA regardless of the retirement plan or tier in which they are included. The average member contribution rate as of December 31, 2020 for 2020 (based on the December 31, 2018 valuation for the second half of 2019/2020 and on the December 31, 2019 valuation for the first half of 2020/2021) was 9.54% of compensation.

Section 2: GASB 68 Information

Net Pension Liability

Reporting Date for Employer under GASB 68	June 30, 2021	June 30, 2020
Measurement Date for Employer under GASB 68	December 31, 2020	December 31, 2019
Components of the Net Pension Liability		
Total Pension Liability	\$10,639,300,371	\$9,959,791,606
Plan's Fiduciary Net Position	(8,444,884,496)	(7,819,098,646)
Net Pension Liability	\$2,194,415,875	\$2,140,692,960
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	79.37%	78.51%

The Net Pension Liability (NPL) was measured as of December 31, 2020 and 2019. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement date and the Total Pension Liability (TPL) was determined based upon rolling forward the TPL from actuarial valuations as of December 31, 2019 and 2018, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of December 31, 2020 and 2019 are the same as those used in the ACERA actuarial valuations as of December 31, 2020 and 2019, respectively.

Actuarial assumptions. The TPL as of December 31, 2020 that was determined by an actuarial valuation as of December 31, 2019, was re-valued as of December 31, 2019 (before roll forward) using the following actuarial assumptions, which were based on the results of an experience study for the period December 1, 2016 through November 30, 2019. This revalued TPL was then rolled forward to December 31, 2020 to determine the final TPL as of December 31, 2020. The actuarial assumptions are the same assumptions used in the December 31, 2020 funding valuation for ACERA and they are applied to all periods included in the measurement.

Inflation	2.75%
Salary Increases	General: 8.35% to 3.65% and Safety: 11.25% to 4.05%, vary by service, including inflation
Investment Rate of Return	7.00%, net of pension plan investment expense, including inflation
Other Assumptions	See analysis of actuarial experience during the period December 1, 2016 through November 30, 2019

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The TPL as of December 31, 2019, that was determined by an actuarial valuation as of December 31, 2018, used the following actuarial assumptions, which were based on the results of an experience study for the period December 1, 2013 through November 30, 2016, applied to all periods included in the measurement. They are the same assumptions used in the December 31, 2019 funding valuation for ACERA.

Inflation	3.00%
Salary Increases	General: 8.30% to 3.90% and Safety: 11.30% to 4.30%, vary by service, including inflation
Investment Rate of Return	7.25%, net of pension plan investment expense, including inflation
Other Assumptions	See analysis of actuarial experience during the period December 1, 2013 through November 30, 2016

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Determination of discount rate and investment rates of return

The long-term expected rate of return on pension plan investments¹ was determined in 2020 using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation (approved by the Board) and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expenses are shown in the following table. This information was used in the derivation of the long-term expected investment rate of return assumption for the December 31, 2020 actuarial valuation. This information will be subject to change every three years based on the results of an actuarial experience study.

Asset Class	Target Allocation	Long-Term Expected Arithmetic Real Rate of Return
US Large Cap Equity	22.40%	5.43%
US Small Cap Equity	2.50%	6.21%
International Developed Equity	17.00%	6.67%
International Small Cap Equity	3.00%	7.36%
Emerging Markets Equity	5.00%	8.58%
Core Plus Fixed Income	11.50%	1.10%
High Yield Bonds	1.60%	2.91%
Global Fixed Income	3.00%	-0.63%
Private Equity	10.50%	10.00%
Core Real Estate	8.00%	4.58%
Commodities	0.75%	3.46%
Infrastructure	1.75%	7.80%
Private Credit	4.00%	8.50%
Absolute Return	9.00%	3.70%
Total	100.00%	5.56%

¹ Note that the investment return assumption for funding purposes was developed net of both investment and administrative expenses; however, the same investment return assumption was used for financial reporting purposes, and it was considered gross of administrative expenses for financial reporting purposes. (This resulted in an increase in the margin for adverse deviation when using that investment return assumption for financial reporting.)

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Discount rate. The discount rate used to measure the Total Pension Liability (TPL) was 7.00% as of December 31, 2020 and 7.25% as of December 31, 2019. Our understanding is that Article 5.5 of the Statute, which authorizes the allocation of 50% of excess earnings to the SRBR, does not allow for the use of a different investment return assumption for funding than is used for interest crediting. In order to reflect the provisions of Article 5.5, we have treated future allocations to the SRBR as an additional outflow against the Plan's Fiduciary Net Position in the GASB crossover test, as mentioned earlier in Section 1. Again, we are estimating that the additional outflow would average approximately 0.65% of assets over time, based on the results of our stochastic modeling of the 50% allocation of future excess earnings to the SRBR.

The projection of cash flows used to determine the discount rate assumes plan member contributions will be made at the current contribution rates and that employer contributions will be made at rates equal to the actuarially determined contribution rates¹ plus additional future contributions that would follow from the future allocation of excess earnings to the SRBR. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the pension plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability as of both December 31, 2020 and December 31, 2019.

¹ For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included.

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Discount rate sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the NPL as of December 31, 2020, calculated using the discount rate of 7.00%, as well as what the NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate:

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Alameda County	\$2,759,833,375	\$1,724,179,473	\$871,981,795
Health System	620,723,870	356,559,512	138,078,254
Superior Court	141,475,480	81,267,099	31,470,817
First 5	15,198,435	8,730,366	3,380,849
Housing Authority	15,133,873	8,693,280	3,366,487
LARPD	21,973,172	14,126,234	7,768,341
ACOE	<u>1,262,525</u>	<u>859,911</u>	<u>509,335</u>
Total for all Employers	\$3,575,600,730	\$2,194,415,875	\$1,056,555,878

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Schedule of changes in Net Pension Liability — Last two plan years

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Total Pension Liability		
• Service cost	\$221,824,117	\$215,625,191
• Interest	718,926,969	688,654,389
• Change of benefit terms	0	0
• Differences between expected and actual experience	33,007,683	24,548,056
• Changes of assumptions	236,513,333	0
• Benefit payments, including refunds of member contributions	(530,763,337)	(504,184,139)
Net change in Total Pension Liability	\$679,508,765	\$424,643,497
Total Pension Liability – beginning	9,959,791,606	9,535,148,109
Total Pension Liability – ending	<u>\$10,639,300,371</u>	<u>\$9,959,791,606</u>
Plan’s Fiduciary Net Position		
• Contributions – employer ¹	\$309,752,998	\$298,526,950
• Contributions – member	106,104,226	103,117,022
• Net investment income	755,501,876	1,165,766,104
• Benefit payments, including refunds of member contributions	(530,763,337)	(504,184,139)
• Administrative expense	(14,809,913)	(15,273,425)
• Other	0	0
Net change in Plan’s Fiduciary Net Position	\$625,785,850	\$1,047,952,512
Plan’s Fiduciary Net Position² – beginning	7,819,098,646	6,771,146,134
Plan’s Fiduciary Net Position² – ending	<u>\$8,444,884,496</u>	<u>\$7,819,098,646</u>
Net Pension Liability – ending	<u>\$2,194,415,875</u>	<u>\$2,140,692,960</u>
Plan’s Fiduciary Net Position as a percentage of the Total Pension Liability	79.37%	78.51%
Covered payroll³	\$1,111,848,569	\$1,081,586,887
Plan Net Pension Liability as percentage of covered payroll	197.37%	197.92%

¹ Employer contributions are on a net basis after (i) considering the total cash contributions made by the employers, (ii) reducing by the employer contributions made to the 401(h) account, and (iii) increasing by the amount of transfer from the SRBR to the Employers Advance Reserve for employer contributions made to the 401(h) account in (ii).

² See footnote (3) on page 8 for a discussion on the development of the December 31, 2020 measurement date “Plan’s Fiduciary Net Position – beginning” amount of \$7,819,098,646 and the December 31, 2020 measurement date “Plan’s Fiduciary Net Position – ending” amount of \$8,444,884,496.

³ Covered payroll represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based.

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Schedule of employer contributions — Last ten plan years

Year Ended December 31	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency / (Excess)	Covered Payroll ¹	Contributions as a Percentage of Covered Payroll ¹
2011	\$162,879,221	\$162,879,221	\$0	\$837,482,162	19.45%
2012	179,648,812	179,648,812	0	845,932,592	21.24%
2013	191,180,146	191,180,146	0	853,349,657	22.40%
2014	213,254,775	213,254,775	0	886,924,862	24.04%
2015	224,607,104	224,607,104	0	945,858,017 ²	23.75%
2016	241,728,451	241,728,451	0	947,567,631	25.51%
2017	247,063,550	247,063,550	0	995,178,209	24.83%
2018	269,684,809	269,684,809	0	1,046,033,851	25.78%
2019	298,526,950	298,526,950	0	1,081,586,887	27.60%
2020	309,758,947	309,752,998	5,949 ³	1,111,848,569	27.86%

¹ For years ended December 31, 2017 and later, covered payroll represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based. For the years ended before December 31, 2017, covered payroll was referred to as covered-employee payroll and only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits was included.

² ACERA indicated that this amount is based on 27 pay periods for 2015.

³ Actuarially Determined Contribution for the Alameda County Office of Education of \$78,000 less actual contributions paid of \$72,051.

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Notes to Schedule:

Methods and assumptions used to establish “actuarially determined contribution” rates:

Valuation Date:	Actuarially determined contribution rates for the first six months of calendar year 2020 (or the second half of fiscal year 2019/2020) are calculated based on the December 31, 2018 valuation. Actuarially determined contribution rates for the last six months of calendar year 2020 (or the first half of fiscal year 2020/2021) are calculated based on the December 31, 2019 valuation.
Actuarial Cost Method:	Entry Age Actuarial Cost Method
Amortization Method	Level percent of payroll (3.50% payroll growth assumed in the December 31, 2019 valuation and 3.50% payroll growth assumed in the December 31, 2018 valuation)
Remaining Amortization Period:	<p><u>December 31, 2018 valuation</u></p> <p>Prior to January 1, 2012, the total UAAL was amortized on a 30-year decreasing period, with 21 years remaining as of December 31, 2011 (and 14 years remaining as of December 31, 2018). On or after January 1, 2012, any new UAAL resulting from plan amendments are amortized over separate decreasing 15-year periods; early retirement incentive programs (ERIPs) are amortized over separate decreasing 5-year periods; assumption and method changes are amortized over separate decreasing 20-year periods; and experience gains/losses are also amortized over separate decreasing 20-year periods.</p> <p><u>December 31, 2019 valuation</u></p> <p>Prior to January 1, 2012, the total UAAL was amortized on a 30-year decreasing period, with 21 years remaining as of December 31, 2011 (and 13 years remaining as of December 31, 2019). On or after January 1, 2012, any new UAAL resulting from plan amendments are amortized over separate decreasing 15-year periods; early retirement incentive programs (ERIPs) are amortized over separate decreasing 5-year periods; assumption and method changes are amortized over separate decreasing 20-year periods; and experience gains/losses are also amortized over separate decreasing 20-year periods.</p>
Asset Valuation Method:	The actuarial value of assets is determined by recognizing any difference between the actual and the expected market return over 10 six-month interest crediting periods. The actuarial value of assets is further adjusted, if necessary, to be within 40% of the market value of assets. The valuation value of assets is the actuarial value of assets reduced by the value of the non-valuation reserves.

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Actuarial assumptions		
Valuation Date	December 31, 2018 Valuation	December 31, 2019 Valuation
Investment rate of return:	7.25%, net of pension plan administrative and investment expense, including inflation	7.25%, net of pension plan administrative and investment expense, including inflation
Inflation rate:	3.00%	3.00%
Real across-the-board salary increase:	0.50%	0.50%
Projected salary increases:	General: 8.30% to 3.90% and Safety: 11.30% to 4.30%, vary by service, including inflation	General: 8.30% to 3.90% and Safety: 11.30% to 4.30%, vary by service, including inflation
Cost of living adjustments:	3.00% of retirement income for General Tiers 1 and 3, and Safety Tier 1; 2.00% for General Tiers 2 and 4, and Safety Tiers 2, 2C, 2D, and 4	3.00% of retirement income for General Tiers 1 and 3, and Safety Tier 1; 2.00% for General Tiers 2 and 4, and Safety Tiers 2, 2C, 2D, and 4
Other assumptions:	Same as those used in the December 31, 2018 funding actuarial valuation	Same as those used in the December 31, 2019 funding actuarial valuation

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Determination of proportionate share

Schedule of Employer Allocations as of December 31, 2019

Actual Employer Contributions by Employer and Membership Class January 1, 2019 to December 31, 2019

Employer	General Members, Excluding ACOE and LARP		General ACOE Members Only		General LARP Members Only		All General Members Combined	
	Contributions	Percentage ¹	Contributions	Percentage	Contributions	Percentage	Contributions	Percentage
Alameda County	\$124,398,408	64.606%	\$0	0.000%	\$0	0.000%	\$124,398,408	63.924%
Health System	54,239,577	28.169%	0	0.000%	0	0.000%	54,239,577	27.872%
Superior Court	11,501,609	5.973%	0	0.000%	0	0.000%	11,501,609	5.910%
First 5	1,200,993	0.624%	0	0.000%	0	0.000%	1,200,993	0.617%
Housing Authority	1,208,258	0.628%	0	0.000%	0	0.000%	1,208,258	0.621%
LARP	0	0.000%	0	0.000%	1,306,574	100.000%	1,306,574	0.671%
ACOE	0	0.000%	750,000	100.000%	0	0.000%	750,000	0.385%
Total for all Employers	\$192,548,845	100.000%	\$750,000	100.000%	\$1,306,574	100.000%	\$194,605,419	100.000%

Actual Employer Contributions by Employer and Membership Class January 1, 2019 to December 31, 2019

Employer	Safety Members		Total		Adjusted Total ²	
	Contributions	Percentage	Contributions	Percentage	Contributions	Percentage ¹
Alameda County	\$103,921,531	100.000%	\$228,319,939	76.482%	\$228,319,939	76.639%
Health System	0	0.000%	54,239,577	18.169%	54,239,577	18.207%
Superior Court	0	0.000%	11,501,609	3.853%	11,501,609	3.861%
First 5	0	0.000%	1,200,993	0.402%	1,200,993	0.403%
Housing Authority	0	0.000%	1,208,258	0.405%	1,208,258	0.406%
LARP	0	0.000%	1,306,574	0.438%	1,306,574	0.439%
ACOE	0	0.000%	750,000	0.251%	132,883 ²	0.045%
Total for all Employers	\$103,921,531	100.000%	\$298,526,950	100.000%	\$297,909,833	100.000%

¹ The unrounded percentages are used in the allocation of the NPL amongst the employers.

² ACOE made a lump sum contribution of \$750,000 in 2019 to partially pay off their UAAL. That lump sum is greater than the amount that ACOE would have to make on an installment basis over 20 years. In order to have a more level allocation of the NPL to ACOE, ACERA approved an approach outlined in our March 2, 2020 letter to determine ACOE's proportionate share of the non-OPEB SRBR NPL by using the total annual UAAL contribution ACOE would have made of \$132,883 in 2019 if they did not make the additional contribution to partially pay off their UAAL.

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Schedule of Employer Allocations as of December 31, 2019

Allocation of December 31, 2019 Net Pension Liability

Employer	General NPL, Excluding ACOE and LARPD (Excl. non-OPEB SRBR NPL)		General ACOE NPL Only (Excl. non-OPEB SRBR NPL)		General LARPD NPL Only (Excl. non-OPEB SRBR NPL)		Total General NPL (Excl. non-OPEB SRBR NPL)	
	NPL	Percentage ¹	NPL	Percentage ¹	NPL	Percentage ¹	NPL	Percentage
Alameda County	\$750,950,156	64.606%	\$0	0.000%	\$0	0.000%	\$750,950,156	63.849%
Health System	327,425,563	28.169%	0	0.000%	0	0.000%	327,425,563	27.838%
Superior Court	69,431,235	5.973%	0	0.000%	0	0.000%	69,431,235	5.903%
First 5	7,249,979	0.624%	0	0.000%	0	0.000%	7,249,979	0.616%
Housing Authority	7,293,836	0.628%	0	0.000%	0	0.000%	7,293,836	0.620%
LARPD	0	0.000%	0	0.000%	13,024,823	100.000%	13,024,823	1.107%
ACOE	0	0.000%	793,504	100.000%	0	0.000%	793,504	0.067%
Total for all Employers	\$1,162,350,769	100.000%	\$793,504	100.000%	\$13,024,823	100.000%	\$1,176,169,096	100.000%

Allocation of December 31, 2019 Net Pension Liability

Employer	Safety NPL (Excl. non-OPEB SRBR NPL)		General & Safety Total (Excl. non-OPEB SRBR NPL)		General & Safety Non-OPEB SRBR NPL		Total	
	NPL	Percentage ¹	NPL	Percentage	NPL	Percentage ²	NPL	Percentage
Alameda County	\$810,219,254	100.000%	\$1,561,169,410	78.594%	\$118,260,007	76.639%	\$1,679,429,417	78.452%
Health System	0	0.000%	327,425,563	16.483%	28,093,792	18.207%	355,519,355	16.608%
Superior Court	0	0.000%	69,431,235	3.495%	5,957,344	3.861%	75,388,579	3.522%
First 5	0	0.000%	7,249,979	0.365%	622,063	0.403%	7,872,042	0.368%
Housing Authority	0	0.000%	7,293,836	0.367%	625,826	0.406%	7,919,662	0.370%
LARPD	0	0.000%	13,024,823	0.656%	676,750	0.439%	13,701,573	0.640%
ACOE	0	0.000%	793,504	0.040%	68,828	0.045%	862,332	0.040%
Total for all Employers	\$810,219,254	100.000%	\$1,986,388,350	100.000%	\$154,304,610	100.000%	\$2,140,692,960	100.000%

¹ Allocated based on the actual employer contributions within each membership class.

² Allocated based on the actual employer contributions in total, with an adjustment to reflect the total annual UAAL contribution ACOE would have made of \$132,883 in 2019 if they did not make the additional contribution to partially pay off their UAAL. This approach is outlined in our March 2, 2020 letter and is approved by ACERA.

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Notes regarding determination of proportionate share as of December 31, 2019 measurement date

Based on the January 1, 2019 through December 31, 2019 employer contributions as provided by ACERA.

Pension (excluding non-OPEB SRBR)

The Net Pension Liability (NPL) for each membership class is the Total Pension Liability (TPL) minus the Plan's Fiduciary Net Position (plan assets). The Total Pension Liability for each membership class is obtained from internal valuation results. The Plan's Fiduciary Net Position for each membership class is obtained by allocating the total Plan's Fiduciary Net Position for Pension (excluding non-OPEB SRBR) proportionally based on the valuation value of assets for each membership class relative to the total valuation value of assets for all membership classes.¹ The total Plan's Fiduciary Net Position for pension as of December 31, 2019 includes the net fair value of assets less SRBR assets. The SRBR assets include the SRBR-OPEB reserve (after reducing the reserve by the SRBR implicit subsidy transfer), the 401(h) reserve, and the non-OPEB SRBR reserve, plus a proportionate share of one half of the deferred market gains (after adjustment to replenish the balance in the Contingency Reserve) commensurate with the size of those SRBR reserves and 401(h) reserve to valuation and 401(h) reserves.

The General ACOE membership class has only one employer (ACOE), so all of the NPL for General ACOE is allocated to the ACOE. The General LARPD membership class has only one employer (LARPD), so all of the NPL for General LARPD is allocated to LARPD. The Safety membership class also has only one employer (County), so all of the NPL for Safety is allocated to the County.

For General excluding ACOE and LARPD, the NPL is allocated based on the actual employer contributions within the General membership class excluding any contributions made by ACOE and LARPD. The steps used for the allocation are as follows:

- First calculate the ratio of the employer's contributions to the total contributions for the membership class.
- This ratio is multiplied by the NPL for the membership class to determine the employer's proportionate share of the NPL for the membership class.

Non-OPEB SRBR

The non-OPEB SRBR assets include the non-OPEB SRBR reserve, plus a proportionate share of one half of the deferred market gains (after adjustment to replenish the balance in the Contingency Reserve) commensurate with the size of the non-OPEB to total SRBR reserves.

For non-OPEB SRBR, the NPL is allocated based on the actual employer contributions in total.² The steps used for the allocation are as follows:

- First calculate the ratio of the employer's total contributions to the total contributions for all employers.
- This ratio is multiplied by the NPL for the non-OPEB SRBR to determine the employer's proportionate share of the NPL for the non-OPEB SRBR.

Total

The employer's total allocated NPL is the sum of its allocated pension NPL from each membership class and the non-OPEB SRBR. The proportionate share of the total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers.

¹ As of December 31, 2019, the total Plan's Fiduciary Net Position for Pension (excluding non-OPEB SRBR) is \$174.9 million **higher** than the valuation value of assets as of the same date due to the inclusion of deferred market **gains**.

² Includes an adjustment to reflect the total annual UAAL contribution ACOE would have made of \$132,883 in 2019 if they did not make the additional contribution to partially pay off their UAAL. This approach is outlined in our March 2, 2020 letter and is approved by ACERA.

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Schedule of Employer Allocations as of December 31, 2020

Actual Employer Contributions by Employer and Membership Class January 1, 2020 to December 31, 2020

Employer	General Members, Excluding ACOE and LARP		General ACOE Members Only		General LARP Members Only		All General Members Combined	
	Contributions	Percentage ¹	Contributions	Percentage	Contributions	Percentage	Contributions	Percentage
Alameda County	\$129,742,973	65.180%	\$0	0.000%	\$0	0.000%	\$129,742,973	64.672%
Health System	54,283,769	27.271%	0	0.000%	0	0.000%	54,283,769	27.059%
Superior Court	12,372,365	6.216%	0	0.000%	0	0.000%	12,372,365	6.167%
First 5	1,329,139	0.668%	0	0.000%	0	0.000%	1,329,139	0.663%
Housing Authority	1,323,493	0.665%	0	0.000%	0	0.000%	1,323,493	0.660%
LARP	0	0.000%	0	0.000%	1,490,917	100.000%	1,490,917	0.743%
ACOE	0	0.000%	72,051	100.000%	0	0.000%	72,051	0.036%
Total for all Employers	\$199,051,739	100.000%	\$72,051	100.000%	\$1,490,917	100.000%	\$200,614,707	100.000%

Actual Employer Contributions by Employer and Membership Class January 1, 2020 to December 31, 2020

Employer	Safety Members		Total		Adjusted Total ²	
	Contributions	Percentage	Contributions	Percentage	Contributions	Percentage ¹
Alameda County	\$109,138,291	100.000%	\$238,881,264	77.121%	\$238,881,264	77.104%
Health System	0	0.000%	54,283,769	17.525%	54,283,769	17.521%
Superior Court	0	0.000%	12,372,365	3.994%	12,372,365	3.993%
First 5	0	0.000%	1,329,139	0.429%	1,329,139	0.429%
Housing Authority	0	0.000%	1,323,493	0.427%	1,323,493	0.427%
LARP	0	0.000%	1,490,917	0.481%	1,490,917	0.481%
ACOE	0	0.000%	72,051	0.023%	138,832 ²	0.045%
Total for all Employers	\$109,138,291	100.000%	\$309,752,998	100.000%	\$309,819,779	100.000%

¹ The unrounded percentages are used in the allocation of the NPL amongst the employers.

² ACOE made a lump sum contribution of \$750,000 in 2019 to partially pay off their UAAL. That lump sum is greater than the amount that ACOE would have to make on an installment basis over 20 years. In order to have a more level allocation of the NPL to ACOE, ACERA approved an approach outlined in our March 2, 2020 letter to determine ACOE's proportionate share of the non-OPEB SRBR NPL by using ACOE's required contributions determined in our December 31, 2018 valuation in the amount of \$78,000 based on an April 1, 2020 payment date plus the amortization of the remaining balance of the original \$750,000 lump sum amount (an amount of \$60,832 which represents the additional UAAL contribution ACOE would have been required to pay if they did not make the additional lump sum contribution in 2019). Note that in 2020, the actual contribution made by ACOE is \$72,051 which is \$5,949 less than the required contribution. Since \$5,949 is part of the required contributions, we included this amount for purposes of determining ACOE's proportionate share of the non-OPEB SRBR NPL.

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Schedule of Employer Allocations as of December 31, 2020

Allocation of December 31, 2020 Net Pension Liability

Employer	General NPL, Excluding ACOE and LARPD (Excl. non-OPEB SRBR NPL)		General ACOE NPL Only (Excl. non-OPEB SRBR NPL)		General LARPD NPL Only (Excl. non-OPEB SRBR NPL)		Total General NPL (Excl. non-OPEB SRBR NPL)	
	NPL	Percentage ¹	NPL	Percentage ¹	NPL	Percentage ¹	NPL	Percentage
Alameda County	\$826,710,745	65.180%	\$0	0.000%	\$0	0.000%	\$826,710,745	64.436%
Health System	345,891,373	27.271%	0	0.000%	0	0.000%	345,891,373	26.959%
Superior Court	78,835,615	6.216%	0	0.000%	0	0.000%	78,835,615	6.145%
First 5	8,469,156	0.668%	0	0.000%	0	0.000%	8,469,156	0.660%
Housing Authority	8,433,180	0.665%	0	0.000%	0	0.000%	8,433,180	0.657%
LARPD	0	0.000%	0	0.000%	13,833,231	100.000%	13,833,231	1.078%
ACOE	0	0.000%	832,627	100.000%	0	0.000%	832,627	0.065%
Total for all Employers	\$1,268,340,069	100.000%	\$832,627	100.000%	\$13,833,231	100.000%	\$1,283,005,927	100.000%

Allocation of December 31, 2020 Net Pension Liability

Employer	Safety NPL (Excl. non-OPEB SRBR NPL)		General & Safety Total (Excl. non-OPEB SRBR NPL)		General & Safety Non-OPEB SRBR NPL		Total	
	NPL	Percentage ¹	NPL	Percentage	NPL	Percentage ²	NPL	Percentage
Alameda County	\$850,522,497	100.000%	\$1,677,233,242	78.614%	\$46,946,231	77.104%	\$1,724,179,473	78.572%
Health System	0	0.000%	345,891,373	16.212%	10,668,139	17.521%	356,559,512	16.248%
Superior Court	0	0.000%	78,835,615	3.695%	2,431,484	3.993%	81,267,099	3.703%
First 5	0	0.000%	8,469,156	0.397%	261,210	0.429%	8,730,366	0.398%
Housing Authority	0	0.000%	8,433,180	0.395%	260,100	0.427%	8,693,280	0.396%
LARPD	0	0.000%	13,833,231	0.648%	293,003	0.481%	14,126,234	0.644%
ACOE	0	0.000%	832,627	0.039%	27,284	0.045%	859,911	0.039%
Total for all Employers	\$850,522,497	100.000%	\$2,133,528,424	100.000%	\$60,887,451	100.000%	\$2,194,415,875	100.000%

¹ Allocated based on the actual employer contributions within each membership class.

² Allocated based on the actual employer contributions in total, with an adjustment to reflect the total annual UAAL contribution ACOE would have been required to make of \$138,832 in 2020 if they did not make the additional contribution in 2019 to partially pay off their UAAL. This approach is outlined in our March 2, 2020 letter and is approved by ACERA.

Section 2: GASB 68 Information

Notes regarding determination of proportionate share as of December 31, 2020 measurement date

Based on the January 1, 2020 through December 31, 2020 employer contributions as provided by ACERA.

Pension (excluding non-OPEB SRBR)

The Net Pension Liability (NPL) for each membership class is the Total Pension Liability (TPL) minus the Plan's Fiduciary Net Position (plan assets). The Total Pension Liability for each membership class is obtained from internal valuation results. The Plan's Fiduciary Net Position for each membership class is obtained by allocating the total Plan's Fiduciary Net Position for Pension (excluding non-OPEB SRBR) proportionally based on the valuation value of assets for each membership class relative to the total valuation value of assets for all membership classes.¹ The total Plan's Fiduciary Net Position for pension as of December 31, 2020 includes the net fair value of assets less SRBR assets. The SRBR assets include the SRBR-OPEB reserve (after reducing the reserve by the SRBR implicit subsidy transfer), the 401(h) reserve, and the non-OPEB SRBR reserve, plus a proportionate share of one half of the deferred market gains (after adjustment to replenish the balance in the Contingency Reserve) commensurate with the size of those SRBR reserves and 401(h) reserve to valuation and 401(h) reserves.

The General ACOE membership class has only one employer (ACOE), so all of the NPL for General ACOE is allocated to the ACOE. The General LARPD membership class has only one employer (LARPD), so all of the NPL for General LARPD is allocated to LARPD. The Safety membership class also has only one employer (County), so all of the NPL for Safety is allocated to the County.

For General excluding ACOE and LARPD, the NPL is allocated based on the actual employer contributions within the General membership class excluding any contributions made by ACOE and LARPD. The steps used for the allocation are as follows:

- First calculate the ratio of the employer's contributions to the total contributions for the membership class.
- This ratio is multiplied by the NPL for the membership class to determine the employer's proportionate share of the NPL for the membership class.

Non-OPEB SRBR

The non-OPEB SRBR assets include the non-OPEB SRBR reserve, plus a proportionate share of one half of the deferred market gains (after adjustment to replenish the balance in the Contingency Reserve) commensurate with the size of the non-OPEB to total SRBR reserves.

For non-OPEB SRBR, the NPL is allocated based on the actual employer contributions in total.² The steps used for the allocation are as follows:

- First calculate the ratio of the employer's total contributions to the total contributions for all employers.
- This ratio is multiplied by the NPL for the non-OPEB SRBR to determine the employer's proportionate share of the NPL for the non-OPEB SRBR.

Total

The employer's total allocated NPL is the sum of its allocated pension NPL from each membership class and the non-OPEB SRBR. The proportionate share of the total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers.

¹ As of December 31, 2020, the total Plan's Fiduciary Net Position for Pension (excluding non-OPEB SRBR) is \$306.4 million **higher** than the valuation value of assets as of the same date due to the inclusion of deferred market **gains**. The total Plan's Fiduciary Net Position also includes the Contingency Reserve and the deferred market gains for replenishing the Contingency Reserve from \$69.0 million to \$98.7 million.

² Includes an adjustment to reflect the total annual UAAL contribution ACOE would have been required to make of \$138,832 in 2020 if they did not make the additional contribution to partially pay off their UAAL. This approach is outlined in our March 2, 2020 letter and is approved by ACERA.

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The following items are allocated based on the corresponding proportionate share within each membership class:

- a. Net Pension Liability
- b. Service cost
- c. Interest on the Total Pension Liability
- d. Current-period benefit changes
- e. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability
- f. Expensed portion of current-period changes of assumptions or other inputs
- g. Member contributions
- h. Projected earnings on plan investments
- i. Expensed portion of current-period differences between actual and projected earnings on plan investments
- j. Administrative expense
- k. Recognition of beginning of year deferred outflows of resources as pension expense
- l. Recognition of beginning of year deferred inflows of resources as pension expense

Section 2: GASB 68 Information

Pension expense

Total for All Employers

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
• Service cost	\$221,824,117	\$215,625,191
• Interest on the Total Pension Liability	718,926,969	688,654,390
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	6,275,224	4,571,332
• Expensed portion of current-period changes of assumptions or other inputs	44,964,513	0
• Member contributions	(106,104,226)	(103,117,022)
• Projected earnings on plan investments	(562,182,446)	(486,637,351)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(38,663,887)	(135,825,750)
• Administrative expense	14,809,913	15,273,425
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	255,647,833	382,022,415
• Recognition of beginning of year deferred inflows of resources as pension expense	(283,669,795)	(160,105,732)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$271,828,215	\$420,460,898

Section 2: GASB 68 Information

Pension expense (continued)

Alameda County

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
• Service cost	\$164,523,259	\$159,236,640
• Interest on the Total Pension Liability	535,739,051	510,276,761
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	1,568,554	1,180,474
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	4,487,316	3,459,048
• Expensed portion of current-period changes of assumptions or other inputs	33,332,427	0
• Member contributions	(78,710,319)	(76,031,473)
• Projected earnings on plan investments	(412,635,729)	(354,645,313)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(28,493,313)	(98,960,399)
• Administrative expense	10,859,641	11,119,868
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	192,315,762	283,996,588
• Recognition of beginning of year deferred inflows of resources as pension expense	(206,690,070)	(115,169,093)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(12,958)</u>	<u>(666,854)</u>
Pension Expense	\$216,283,621	\$323,796,247

Section 2: GASB 68 Information

Pension expense (continued)

Health System

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
• Service cost	\$44,093,982	\$44,033,928
• Interest on the Total Pension Liability	139,741,027	138,387,364
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(2,443,667)	(2,049,027)
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	1,355,788	643,663
• Expensed portion of current-period changes of assumptions or other inputs	8,942,262	0
• Member contributions	(21,072,616)	(21,137,887)
• Projected earnings on plan investments	(114,224,879)	(102,473,282)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(7,780,291)	(28,628,281)
• Administrative expense	3,016,814	3,224,607
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	47,441,395	75,664,473
• Recognition of beginning of year deferred inflows of resources as pension expense	(58,729,215)	(34,791,215)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>275,133</u>	<u>2,093,505</u>
Pension Expense	\$40,615,733	\$74,967,848

Section 2: GASB 68 Information

Pension expense (continued)

Superior Court

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
• Service cost	\$10,049,907	\$9,337,481
• Interest on the Total Pension Liability	31,849,796	29,345,313
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	647,023	927,309
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	309,011	136,489
• Expensed portion of current-period changes of assumptions or other inputs	2,038,122	0
• Member contributions	(4,802,874)	(4,482,331)
• Projected earnings on plan investments	(26,034,152)	(21,729,661)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(1,773,285)	(6,070,683)
• Administrative expense	687,593	683,784
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	10,812,850	16,044,800
• Recognition of beginning of year deferred inflows of resources as pension expense	(13,385,572)	(7,377,546)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(163,893)</u>	<u>(1,326,349)</u>
Pension Expense	\$10,234,526	\$15,488,606

Section 2: GASB 68 Information

Pension expense (continued)

First 5

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
• Service cost	\$1,079,642	\$975,015
• Interest on the Total Pension Liability	3,421,561	3,064,225
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	117,913	95,915
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	33,197	14,252
• Expensed portion of current-period changes of assumptions or other inputs	218,951	0
• Member contributions	(515,963)	(468,043)
• Projected earnings on plan investments	(2,796,798)	(2,269,002)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(190,500)	(633,898)
• Administrative expense	73,867	71,400
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	1,161,603	1,675,391
• Recognition of beginning of year deferred inflows of resources as pension expense	(1,437,985)	(770,360)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>163,900</u>	<u>40,516</u>
Pension Expense	\$1,329,388	\$1,795,411

Section 2: GASB 68 Information

Pension expense (continued)

Housing Authority

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
• Service cost	\$1,075,056	\$980,914
• Interest on the Total Pension Liability	3,407,027	3,082,761
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	100,112	(167,260)
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	33,056	14,339
• Expensed portion of current-period changes of assumptions or other inputs	218,021	0
• Member contributions	(513,772)	(470,874)
• Projected earnings on plan investments	(2,784,918)	(2,282,728)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(189,692)	(637,733)
• Administrative expense	73,553	71,832
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	1,156,669	1,685,526
• Recognition of beginning of year deferred inflows of resources as pension expense	(1,431,878)	(775,021)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(218,468)</u>	<u>(90,687)</u>
Pension Expense	\$924,766	\$1,411,069

Section 2: GASB 68 Information

Pension expense (continued)

LARPD

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
• Service cost	\$1,000,053	\$1,059,073
• Interest on the Total Pension Liability	4,443,764	4,174,391
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	10,017	5,123
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	43,636	288,337
• Expensed portion of current-period changes of assumptions or other inputs	213,402	0
• Member contributions	(488,682)	(526,414)
• Projected earnings on plan investments	(3,441,580)	(3,011,917)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(221,404)	(834,913)
• Administrative expense	91,219	95,324
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	2,418,917	2,630,272
• Recognition of beginning of year deferred inflows of resources as pension expense	(1,929,587)	(1,216,880)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(26,320)</u>	<u>(24,821)</u>
Pension Expense	\$2,113,435	\$2,637,575

Section 2: GASB 68 Information

Pension expense (continued)

ACOE

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
• Service cost	\$2,218	\$2,140
• Interest on the Total Pension Liability	324,743	323,575
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	48	7,466
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	13,220	15,204
• Expensed portion of current-period changes of assumptions or other inputs	1,328	0
• Member contributions	0	0
• Projected earnings on plan investments	(264,390)	(225,448)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(15,402)	(59,843)
• Administrative expense	7,226	6,610
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	340,637	325,365
• Recognition of beginning of year deferred inflows of resources as pension expense	(65,488)	(5,617)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(17,394)</u>	<u>(25,310)</u>
Pension Expense	\$326,746	\$364,142

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources

Total For All Employers

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$22,668,662	\$17,675,162
• Changes of assumptions or other inputs	387,601,485	213,019,224
• Net difference between projected and actual earnings on pension plan investments	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>57,035,893</u>	<u>38,769,435</u>
• Total Deferred Outflows of Resources	\$467,306,040	\$269,463,821
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$22,668,662	\$17,675,162
• Changes of assumptions or other inputs	94,791,810	26,949,122
• Net difference between projected and actual earnings on pension plan investments	391,562,982	344,235,653
• Difference between expected and actual experience in the Total Pension Liability	<u>11,359,831</u>	<u>25,328,827</u>
• Total Deferred Inflows of Resources	\$520,383,285	\$414,188,764
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2021	N/A	\$(28,021,962)
2022	\$(21,109,397)	(33,685,247)
2023	58,035,448	45,459,598
2024	(117,592,877)	(130,168,727)
2025	14,267,250	1,691,395
2026	13,322,331	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Alameda County

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$11,520,977	\$6,558,962
• Changes of assumptions or other inputs	293,037,119	163,207,471
• Net difference between projected and actual earnings on pension plan investments	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>42,239,675</u>	<u>29,709,753</u>
• Total Deferred Outflows of Resources	\$346,797,771	\$199,476,186
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$2,547,465	\$4,280,444
• Changes of assumptions or other inputs	73,087,610	20,653,973
• Net difference between projected and actual earnings on pension plan investments	286,812,664	248,325,745
• Difference between expected and actual experience in the Total Pension Liability	<u>7,854,374</u>	<u>17,068,065</u>
• Total Deferred Inflows of Resources	\$370,302,113	\$290,328,227
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2021	N/A	\$(14,167,610)
2022	\$(9,334,580)	(19,997,698)
2023	46,128,394	35,078,873
2024	(83,156,747)	(93,482,224)
2025	12,617,642	1,716,618
2026	10,240,949	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Health System

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$3,818,149	\$6,333,639
• Changes of assumptions or other inputs	72,609,580	38,885,514
• Net difference between projected and actual earnings on pension plan investments	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>8,559,363</u>	<u>3,236,186</u>
• Total Deferred Outflows of Resources	\$84,987,092	\$48,455,339
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$17,345,961	\$9,176,298
• Changes of assumptions or other inputs	16,608,548	4,906,548
• Net difference between projected and actual earnings on pension plan investments	80,123,553	74,608,604
• Difference between expected and actual experience in the Total Pension Liability	<u>2,621,704</u>	<u>6,184,756</u>
• Total Deferred Inflows of Resources	\$116,699,766	\$94,876,206
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2021	N/A	\$(11,363,434)
2022	\$(10,878,079)	(11,317,932)
2023	6,639,380	6,807,158
2024	(29,061,271)	(30,026,678)
2025	(454,844)	(519,981)
2026	2,042,140	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Superior Court

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$5,881,353	\$4,077,438
• Changes of assumptions or other inputs	16,549,187	8,245,750
• Net difference between projected and actual earnings on pension plan investments	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>1,950,851</u>	<u>686,240</u>
• Total Deferred Outflows of Resources	\$24,381,391	\$13,009,428
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$1,987,380	\$3,103,677
• Changes of assumptions or other inputs	3,785,423	1,040,443
• Net difference between projected and actual earnings on pension plan investments	18,261,773	15,820,901
• Difference between expected and actual experience in the Total Pension Liability	<u>597,539</u>	<u>1,311,490</u>
• Total Deferred Inflows of Resources	\$24,632,115	\$21,276,511
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2021	N/A	\$(2,631,873)
2022	\$(1,516,698)	(2,634,423)
2023	3,109,815	1,823,355
2024	(4,238,541)	(5,217,750)
2025	1,616,218	393,608
2026	778,482	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

First 5

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$923,064	\$591,593
• Changes of assumptions or other inputs	1,777,847	861,018
• Net difference between projected and actual earnings on pension plan investments	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>209,576</u>	<u>71,657</u>
• Total Deferred Outflows of Resources	\$2,910,487	\$1,524,268
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$10,197	\$17,133
• Changes of assumptions or other inputs	406,661	108,643
• Net difference between projected and actual earnings on pension plan investments	1,961,827	1,652,012
• Difference between expected and actual experience in the Total Pension Liability	<u>64,192</u>	<u>136,945</u>
• Total Deferred Inflows of Resources	\$2,442,877	\$1,914,733
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2021	N/A	\$(93,805)
2022	\$41,081	(119,900)
2023	484,836	293,376
2024	(375,179)	(510,896)
2025	220,659	40,760
2026	96,213	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Housing Authority

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$438,903	\$43,631
• Changes of assumptions or other inputs	1,770,295	866,226
• Net difference between projected and actual earnings on pension plan investments	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>208,686</u>	<u>72,090</u>
• Total Deferred Outflows of Resources	\$2,417,884	\$981,947
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$693,125	\$942,801
• Changes of assumptions or other inputs	404,933	109,300
• Net difference between projected and actual earnings on pension plan investments	1,953,493	1,662,004
• Difference between expected and actual experience in the Total Pension Liability	<u>63,919</u>	<u>137,773</u>
• Total Deferred Inflows of Resources	\$3,115,470	\$2,851,878
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2021	N/A	\$(477,732)
2022	\$(353,404)	(499,082)
2023	130,495	(41,117)
2024	(671,191)	(795,422)
2025	105,202	(56,578)
2026	91,312	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

LARPD

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$59,936	\$34,430
• Changes of assumptions or other inputs	1,809,278	934,042
• Net difference between projected and actual earnings on pension plan investments	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>3,162,181</u>	<u>4,084,482</u>
• Total Deferred Outflows of Resources	\$5,031,395	\$5,052,954
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$45,153	\$88,639
• Changes of assumptions or other inputs	456,158	118,194
• Net difference between projected and actual earnings on pension plan investments	2,342,976	2,128,324
• Difference between expected and actual experience in the Total Pension Liability	<u>156,944</u>	<u>489,776</u>
• Total Deferred Inflows of Resources	\$3,001,231	\$2,824,933
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2021	N/A	\$454,777
2022	\$681,181	631,897
2023	1,282,243	1,236,861
2024	(157,483)	(204,093)
2025	154,785	108,579
2026	69,438	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

ACOE

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$26,280	\$35,469
• Changes of assumptions or other inputs	48,179	19,203
• Net difference between projected and actual earnings on pension plan investments	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>705,561</u>	<u>909,027</u>
• Total Deferred Outflows of Resources	\$780,020	\$963,699
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$39,381	\$66,170
• Changes of assumptions or other inputs	42,477	12,021
• Net difference between projected and actual earnings on pension plan investments	106,696	38,063
• Difference between expected and actual experience in the Total Pension Liability	<u>1,159</u>	<u>22</u>
• Total Deferred Inflows of Resources	\$189,713	\$116,276
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2021	N/A	\$257,715
2022	\$251,102	251,891
2023	260,285	261,092
2024	67,535	68,336
2025	7,588	8,389
2026	3,797	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

There are changes in each employer's proportionate share of the total NPL during the measurement period ended December 31, 2020. The net effect of the change on the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources for the current period (i.e., 2020) is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through ACERA which is 5.26 years determined as of December 31, 2019 (the beginning of the measurement period ended December 31, 2020). This is described in Paragraph 33a. of GASB 68.

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended December 31, 2020 is recognized over the same period.

The net effects of the change on the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources for prior periods are continued to be recognized based on the expected remaining service lives of all employees calculated as of those prior measurement dates.

The average of the expected service lives of all employees is determined by:

- Calculating each active employees' expected remaining service life as the present value of \$1 per year of future service at zero percent interest.
- Setting the remaining service life to zero for each nonactive or retired member.
- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability

Total for All Employers

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered payroll ¹	Proportionate share of the Net Pension Liability as a percentage of its covered payroll	Plan's Fiduciary Net Position as a percentage of the Total Pension Liability
2014	100.000%	\$1,282,020,543	\$853,349,657	150.23%	81.62%
2015	100.000%	1,740,642,540	886,924,862	196.26%	77.26%
2016	100.000%	2,118,448,018	945,858,017	223.97%	73.43%
2017	100.000%	2,243,194,227	947,567,631	236.73%	73.33%
2018	100.000%	2,013,675,939	995,178,209	202.34%	77.93%
2019	100.000%	2,764,001,975	1,046,033,851	264.24%	71.01%
2020	100.000%	2,140,692,960	1,081,586,887	197.92%	78.51%
2021	100.000%	2,194,415,875	1,111,848,569	197.37%	79.37%

¹ For reporting dates on or after June 30, 2018, covered payroll shown represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based. For reporting dates before June 30, 2018, covered payroll was referred to as covered-employee payroll and only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits was included.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Alameda County

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered payroll ¹	Proportionate share of the Net Pension Liability as a percentage of its covered payroll	Plan's Fiduciary Net Position as a percentage of the Total Pension Liability
2014	79.664%	\$1,021,302,378	\$597,886,511	170.82%	80.13%
2015	78.293%	1,362,794,384	624,890,234	218.09%	75.95%
2016	77.434%	1,640,381,401	669,324,559	245.08%	72.23%
2017	77.697%	1,742,898,513	670,675,915	259.87%	72.10%
2018	78.526%	1,581,250,705	696,359,743	227.07%	76.50%
2019	76.913%	2,125,856,592	728,698,264	291.73%	69.77%
2020	78.452%	1,679,429,417	757,563,567	221.69%	77.25%
2021	78.572%	1,724,179,473	784,654,614	219.74%	78.25%

¹ For reporting dates on or after June 30, 2018, covered payroll shown represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based. For reporting dates before June 30, 2018, covered payroll was referred to as covered-employee payroll and only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits was included.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Health System

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered payroll ¹	Proportionate share of the Net Pension Liability as a percentage of its covered payroll	Plan's Fiduciary Net Position as a percentage of the Total Pension Liability
2014	15.499%	\$198,700,381	\$197,865,572	100.42%	85.92%
2015	16.779%	292,060,821	205,303,352	142.26%	81.06%
2016	17.436%	369,372,264	217,863,121	169.54%	76.89%
2017	17.285%	387,733,901	216,685,931	178.94%	76.88%
2018	16.959%	341,501,682	239,207,087	142.76%	81.93%
2019	18.147%	501,587,358	255,247,270	196.51%	74.56%
2020	16.608%	355,519,355	257,591,438	138.02%	82.22%
2021	16.248%	356,559,512	257,126,856	138.67%	82.77%

¹ For reporting dates on or after June 30, 2018, covered payroll shown represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based. For reporting dates before June 30, 2018, covered payroll was referred to as covered-employee payroll and only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits was included.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Superior Court

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered payroll ¹	Proportionate share of the Net Pension Liability as a percentage of its covered payroll	Plan's Fiduciary Net Position as a percentage of the Total Pension Liability
2014	3.554%	\$45,564,584	\$45,426,844	100.30%	85.92%
2015	3.695%	64,323,516	44,783,132	143.63%	81.06%
2016	3.880%	82,205,987	45,883,436	179.16%	76.89%
2017	3.806%	85,372,076	46,866,752	182.16%	76.88%
2018	3.413%	68,718,793	46,437,348	147.98%	81.93%
2019	3.507%	96,943,208	48,293,563	200.74%	74.56%
2020	3.522%	75,388,579	52,163,782	144.52%	82.22%
2021	3.703%	81,267,099	55,376,411	146.75%	82.77%

¹ For reporting dates on or after June 30, 2018, covered payroll shown represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based. For reporting dates before June 30, 2018, covered payroll was referred to as covered-employee payroll and only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits was included.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

First 5

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered payroll ¹	Proportionate share of the Net Pension Liability as a percentage of its covered payroll	Plan's Fiduciary Net Position as a percentage of the Total Pension Liability
2014	0.321%	\$4,116,118	\$4,191,989	98.19%	85.92%
2015	0.326%	5,674,306	3,957,401	143.38%	81.06%
2016	0.349%	7,383,341	4,239,645	174.15%	76.89%
2017	0.358%	8,035,666	4,416,769	181.94%	76.88%
2018	0.334%	6,731,962	4,562,701	147.54%	81.93%
2019	0.366%	10,129,093	4,952,333	204.53%	74.56%
2020	0.368%	7,872,042	5,423,220	145.15%	82.22%
2021	0.398%	8,730,366	5,953,576	146.64%	82.77%

¹ For reporting dates on or after June 30, 2018, covered payroll shown represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based. For reporting dates before June 30, 2018, covered payroll was referred to as covered-employee payroll and only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits was included.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Housing Authority

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered payroll ¹	Proportionate share of the Net Pension Liability as a percentage of its covered payroll	Plan's Fiduciary Net Position as a percentage of the Total Pension Liability
2014	0.423%	\$5,418,947	\$4,112,203	131.78%	85.92%
2015	0.428%	7,455,335	4,002,650	186.26%	81.06%
2016	0.455%	9,644,104	4,272,082	225.75%	76.89%
2017	0.460%	10,314,924	4,354,275	236.89%	76.88%
2018	0.409%	8,244,509	4,299,288	191.76%	81.93%
2019	0.435%	12,014,705	4,512,036	266.28%	74.56%
2020	0.370%	7,919,662	4,347,895	182.15%	82.22%
2021	0.396%	8,693,280	4,675,355	185.94%	82.77%

¹ For reporting dates on or after June 30, 2018, covered payroll shown represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based. For reporting dates before June 30, 2018, covered payroll was referred to as covered-employee payroll and only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits was included.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

LARPD

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered payroll ¹	Proportionate share of the Net Pension Liability as a percentage of its covered payroll	Plan's Fiduciary Net Position as a percentage of the Total Pension Liability
2014	0.532%	\$6,824,150	\$3,796,820	179.73%	78.70%
2015	0.471%	8,203,447	3,919,778	209.28%	76.82%
2016	0.438%	9,288,497	4,203,012	221.00%	75.39%
2017	0.385%	8,644,696	4,487,952	192.62%	77.76%
2018	0.359%	7,228,288	4,312,042	167.63%	82.99%
2019	0.572%	15,804,862	4,330,385	364.98%	72.74%
2020	0.640%	13,701,573	4,496,985	304.68%	77.82%
2021	0.644%	14,126,234	4,061,757	347.79%	78.44%

¹ For reporting dates on or after June 30, 2018, covered payroll shown represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based. For reporting dates before June 30, 2018, covered payroll was referred to as covered-employee payroll and only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits was included.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

ACOE

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered payroll ¹	Proportionate share of the Net Pension Liability as a percentage of its covered payroll	Plan's Fiduciary Net Position as a percentage of the Total Pension Liability
2014	0.007%	\$93,985	\$69,718	134.81%	85.92%
2015	0.008%	130,731	68,314	191.37%	81.06%
2016	0.008%	172,424	72,162	238.94%	76.89%
2017	0.009%	194,451	80,037	242.95%	76.88%
2018	0.000%	0	0	N/A	N/A
2019	0.060%	1,666,157	0	N/A	63.63%
2020	0.040%	862,332	0	N/A	81.56%
2021	0.039%	859,911	0	N/A	81.63%

¹ For reporting dates on or after June 30, 2018, covered payroll shown represents Compensation Earnable and Pensionable Compensation and is defined as the payroll on which contributions to the pension plan are based. For reporting dates before June 30, 2018, covered payroll was referred to as covered-employee payroll and only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits was included.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability

Total for All Employer

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Reconciliation of Net Pension Liability	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Beginning Net Pension Liability	\$2,140,692,960	\$2,764,001,975
• Pension Expense	271,828,215	420,460,898
• Employer Contributions	(309,752,998)	(298,526,950)
• New Net Deferred Inflows/Outflows	63,625,736	(523,326,280)
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion ¹	0	0
• Recognition of Prior Deferred Inflows/Outflows	28,021,962	(221,916,683)
• Recognition of Prior Deferred Flows Due to Change in Proportion ¹	<u>0</u>	<u>0</u>
Ending Net Pension Liability	\$2,194,415,875	\$2,140,692,960

¹ Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Alameda County

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Reconciliation of Net Pension Liability	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Beginning Net Pension Liability	\$1,679,429,417	\$2,125,856,592
• Pension Expense	216,283,621	323,796,247
• Employer Contributions	(238,881,264)	(228,319,939)
• New Net Deferred Inflows/Outflows	47,138,849	(380,725,563)
• Change in Allocation of Prior Deferred Inflows/Outflows	(860,452)	1,824,055
• New Net Deferred Flows Due to Change in Proportion ¹	6,682,036	5,158,666
• Recognition of Prior Deferred Inflows/Outflows	14,374,308	(168,827,495)
• Recognition of Prior Deferred Flows Due to Change in Proportion ¹	<u>12,958</u>	<u>666,854</u>
Ending Net Pension Liability	\$1,724,179,473	\$1,679,429,417

¹ Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Health System

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Reconciliation of Net Pension Liability	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Beginning Net Pension Liability	\$355,519,355	\$501,587,358
• Pension Expense	40,615,733	74,967,848
• Employer Contributions	(54,283,769)	(54,239,577)
• New Net Deferred Inflows/Outflows	12,748,527	(111,700,315)
• Change in Allocation of Prior Deferred Inflows/Outflows	1,356,999	(3,174,953)
• New Net Deferred Flows Due to Change in Proportion ¹	(10,410,020)	(8,954,244)
• Recognition of Prior Deferred Inflows/Outflows	11,287,820	(40,873,257)
• Recognition of Prior Deferred Flows Due to Change in Proportion ¹	<u>(275,133)</u>	<u>(2,093,505)</u>
Ending Net Pension Liability	\$356,559,512	\$355,519,355

¹ Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Superior Court

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Reconciliation of Net Pension Liability	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Beginning Net Pension Liability	\$75,388,579	\$96,943,208
• Pension Expense	10,234,526	15,488,606
• Employer Contributions	(12,372,365)	(11,501,609)
• New Net Deferred Inflows/Outflows	2,905,646	(23,686,271)
• Change in Allocation of Prior Deferred Inflows/Outflows	(382,220)	1,433,208
• New Net Deferred Flows Due to Change in Proportion ¹	2,756,319	4,052,343
• Recognition of Prior Deferred Inflows/Outflows	2,572,721	(8,667,255)
• Recognition of Prior Deferred Flows Due to Change in Proportion ¹	<u>163,893</u>	<u>1,326,349</u>
Ending Net Pension Liability	\$81,267,099	\$75,388,579

¹ Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

First 5

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Reconciliation of Net Pension Liability	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Beginning Net Pension Liability	\$7,872,042	\$10,129,093
• Pension Expense	1,329,388	1,795,411
• Employer Contributions	(1,329,139)	(1,200,993)
• New Net Deferred Inflows/Outflows	312,148	(2,473,310)
• Change in Allocation of Prior Deferred Inflows/Outflows	(68,863)	148,241
• New Net Deferred Flows Due to Change in Proportion ¹	502,307	419,147
• Recognition of Prior Deferred Inflows/Outflows	276,383	(905,031)
• Recognition of Prior Deferred Flows Due to Change in Proportion ¹	(163,900)	(40,516)
Ending Net Pension Liability	\$8,730,366	\$7,872,042

¹ Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Housing Authority

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Reconciliation of Net Pension Liability	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Beginning Net Pension Liability	\$7,919,662	\$12,014,705
• Pension Expense	924,766	1,411,069
• Employer Contributions	(1,323,493)	(1,208,258)
• New Net Deferred Inflows/Outflows	310,822	(2,488,271)
• Change in Allocation of Prior Deferred Inflows/Outflows	(58,633)	(258,841)
• New Net Deferred Flows Due to Change in Proportion ¹	426,480	(730,924)
• Recognition of Prior Deferred Inflows/Outflows	275,208	(910,505)
• Recognition of Prior Deferred Flows Due to Change in Proportion ¹	<u>218,468</u>	<u>90,687</u>
Ending Net Pension Liability	\$8,693,280	\$7,919,662

¹ Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

LARPD

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Reconciliation of Net Pension Liability	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Beginning Net Pension Liability	\$13,701,573	\$15,804,862
• Pension Expense	2,113,435	2,637,575
• Employer Contributions	(1,490,917)	(1,306,574)
• New Net Deferred Inflows/Outflows	209,374	(2,079,619)
• Change in Allocation of Prior Deferred Inflows/Outflows	13,106	11,513
• New Net Deferred Flows Due to Change in Proportion ¹	42,672	22,387
• Recognition of Prior Deferred Inflows/Outflows	(489,329)	(1,413,392)
• Recognition of Prior Deferred Flows Due to Change in Proportion ¹	<u>26,320</u>	<u>24,821</u>
Ending Net Pension Liability	\$14,126,234	\$13,701,573

¹ Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

ACOE

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Reconciliation of Net Pension Liability	June 30, 2021 December 31, 2020	June 30, 2020 December 31, 2019
Beginning Net Pension Liability	\$862,332	\$1,666,157
• Pension Expense	326,746	364,142
• Employer Contributions	(72,051)	(750,000)
• New Net Deferred Inflows/Outflows	370	(172,931)
• Change in Allocation of Prior Deferred Inflows/Outflows	63	16,777
• New Net Deferred Flows Due to Change in Proportion ¹	206	32,625
• Recognition of Prior Deferred Inflows/Outflows	(275,149)	(319,748)
• Recognition of Prior Deferred Flows Due to Change in Proportion ¹	<u>17,394</u>	<u>25,310</u>
Ending Net Pension Liability	\$859,911	\$862,332

¹ Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of recognition of changes in total Net Pension Liability

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience on Total Pension Liability

Reporting Date for Employer Under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:							
			2020	2021	2022	2023	2024	2025	2026	2027
2015	\$(85,378,608)	5.68	\$(10,221,383)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	(31,964,793)	5.64	(5,667,516)	(3,627,213)	0	0	0	0	0	0
2017	(68,175,766)	5.60	(12,174,244)	(12,174,244)	(7,304,546)	0	0	0	0	0
2018	17,516,316	5.47	3,202,252	3,202,252	3,202,252	1,505,056	0	0	0	0
2019	13,710,084	5.43	2,524,878	2,524,878	2,524,878	2,524,878	1,085,694	0	0	0
2020	24,548,055	5.37	4,571,332	4,571,332	4,571,332	4,571,332	4,571,332	1,691,395	0	0
2021	33,007,683	5.26	<u>N/A</u>	<u>6,275,224</u>	<u>6,275,224</u>	<u>6,275,224</u>	<u>6,275,224</u>	<u>6,275,224</u>	<u>1,631,563</u>	<u>0</u>
Net increase (decrease) in pension expense			\$(17,764,681)	\$772,229	\$9,269,140	\$14,876,490	\$11,932,250	\$7,966,619	\$1,631,563	\$0

As described in the Schedule of Deferred Outflows of Resources and Deferred Inflows of Resources, for the current period, the average of the expected remaining service lives of all employees that are provided with pensions through ACERA (active and inactive employees) determined as of December 31, 2019 (the beginning of the measurement period ending December 31, 2020) is 5.26 years.

Amortization amounts prior to June 30, 2020 have been omitted from this schedule. Those amounts can be found in prior years' GASB 68 Reports.

Section 2: GASB 68 Information

Schedule of recognition of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition
of the Effects of Assumption Changes

Reporting Date for Employer Under GASB 68 Year Ended June 30	Effects of Assumption Changes	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:							
			2020	2021	2022	2023	2024	2025	2026	2027
2015	\$431,863,478	5.68	\$51,701,968	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	0	5.64	0	0	0	0	0	0	0	0
2017	150,676,929	5.60	26,906,594	26,906,594	16,143,959	0	0	0	0	0
2018	316,727,508	5.47	57,902,653	57,902,653	57,902,653	27,214,243	0	0	0	0
2019	0	5.43	0	0	0	0	0	0	0	0
2020	0	5.37	0	0	0	0	0	0	0	0
2021	236,513,333	5.26	<u>N/A</u>	<u>44,964,513</u>	<u>44,964,513</u>	<u>44,964,513</u>	<u>44,964,513</u>	<u>44,964,513</u>	<u>11,690,768</u>	<u>0</u>
Net increase (decrease) in pension expense			\$136,511,215	\$129,773,760	\$119,011,125	\$72,178,756	\$44,964,513	\$44,964,513	\$11,690,768	\$0

As described in the Schedule of Deferred Outflows of Resources and Deferred Inflows of Resources, for the current period, the average of the expected remaining service lives of all employees that are provided with pensions through ACERA (active and inactive employees) determined as of December 31, 2019 (the beginning of the measurement period ending December 31, 2020) is 5.26 years.

Amortization amounts prior to June 30, 2020 have been omitted from this schedule. Those amounts can be found in prior years' GASB 68 Reports.

Section 2: GASB 68 Information

Schedule of recognition of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Projected and Actual Earnings on Pension Plan Investments

Reporting Date for Employer Under GASB 68 Year Ended June 30	Differences between Projected and Actual Earnings	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:							
			2020	2021	2022	2023	2024	2025	2026	2027
2015	\$121,984,072	5.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	396,219,729	5.00	79,243,945	0	0	0	0	0	0	0
2017	16,987,820	5.00	3,397,564	3,397,564	0	0	0	0	0	0
2018	(601,849,317)	5.00	(120,369,864)	(120,369,864)	(120,369,861)	0	0	0	0	0
2019	727,349,183	5.00	145,469,836	145,469,836	145,469,836	145,469,839	0	0	0	0
2020	(679,128,753)	5.00	(135,825,750)	(135,825,750)	(135,825,750)	(135,825,750)	(135,825,753)	0	0	0
2021	(193,319,430)	5.00	<u>N/A</u>	<u>(38,663,887)</u>	<u>(38,663,887)</u>	<u>(38,663,887)</u>	<u>(38,663,887)</u>	<u>(38,663,882)</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			\$(28,084,269)	\$(145,992,101)	\$(149,389,662)	\$(29,019,798)	\$(174,489,640)	\$(38,663,882)	\$0	\$0

The differences between projected and actual earnings on pension plan investments are recognized over a five-year period per Paragraph 33b. of GASB 68.

Amortization amounts prior to June 30, 2020 have been omitted from this schedule. Those amounts can be found in prior years' GASB 68 Reports.

Section 2: GASB 68 Information

Schedule of recognition of changes in total Net Pension Liability (continued)

Total Increase (Decrease) in Pension Expense

Reporting Date for Employer Under GASB 68 Year Ended June 30	Total Differences and Changes	Reporting Date for Employer under GASB 68 Year Ended June 30:									
		2020	2021	2022	2023	2024	2025	2026	2027		
2015	\$468,468,942	\$41,480,585	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2016	364,254,936	73,576,429	(3,627,213)	0	0	0	0	0	0	0	
2017	99,488,983	18,129,914	18,129,914	8,839,413	0	0	0	0	0	0	
2018	(267,605,493)	(59,264,959)	(59,264,959)	(59,264,956)	28,719,299	0	0	0	0	0	
2019	741,059,267	147,994,714	147,994,714	147,994,714	147,994,717	1,085,694	0	0	0	0	
2020	(654,580,698)	(131,254,418)	(131,254,418)	(131,254,418)	(131,254,418)	(131,254,421)	1,691,395	0	0	0	
2021	76,201,586	<u>N/A</u>	<u>12,575,850</u>	<u>12,575,850</u>	<u>12,575,850</u>	<u>12,575,850</u>	<u>12,575,855</u>	<u>13,322,331</u>	<u>0</u>	<u>0</u>	
Net increase (decrease) in pension expense		\$90,662,265	\$(15,446,112)	\$(21,109,397)	\$58,035,448	\$(117,592,877)	\$14,267,250	\$13,322,331	\$0	\$0	

Amortization amounts prior to June 30, 2020 have been omitted from this schedule. Those amounts can be found in prior years' GASB 68 Reports.

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability

In addition to the amounts shown in the Schedule of Recognition of Changes in Total Net Pension Liability, there are changes in each employer's proportionate share of the total Net Pension Liability (NPL) during the measurement period ending on December 31, 2020. The net effect of the change in the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources is also recognized over the average of the expected remaining service lives of all employees shown above. The difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ending on December 31, 2020 is recognized over the same periods. These amounts are shown on the following table, with the corresponding amounts for the measurement periods ending on December 31 beginning in 2015 shown on the following pages. While these amounts are different for each employer, they sum to zero over the entire ACERA.

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2020

	Total Change to be Recognized	Recognition Period (Years)	2021	2022	2023	2024	2025	2026	Thereafter
Alameda County	\$8,250,590	5.26	\$1,568,554	\$1,568,554	\$1,568,554	\$1,568,554	\$1,568,554	\$407,820	\$0
Health System	(12,853,687)	5.26	(2,443,667)	(2,443,667)	(2,443,667)	(2,443,667)	(2,443,667)	(635,352)	0
Superior Court	3,403,342	5.26	647,023	647,023	647,023	647,023	647,023	168,227	0
First 5	620,220	5.26	117,913	117,913	117,913	117,913	117,913	30,655	0
Housing Authority	526,592	5.26	100,112	100,112	100,112	100,112	100,112	26,032	0
LARPD	52,689	5.26	10,017	10,017	10,017	10,017	10,017	2,604	0
ACOE	<u>254</u>	5.26	<u>48</u>	<u>48</u>	<u>48</u>	<u>48</u>	<u>48</u>	<u>14</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2019

	Total Change to be Recognized	Recognition Period (Years)	2020	2021	2022	2023	2024	2025	Thereafter
Alameda County	\$6,339,140	5.37	\$1,180,474	\$1,180,474	\$1,180,474	\$1,180,474	\$1,180,474	\$436,770	\$0
Health System	(11,003,271)	5.37	(2,049,027)	(2,049,027)	(2,049,027)	(2,049,027)	(2,049,027)	(758,136)	0
Superior Court	4,979,652	5.37	927,309	927,309	927,309	927,309	927,309	343,107	0
First 5	515,062	5.37	95,915	95,915	95,915	95,915	95,915	35,487	0
Housing Authority	(898,184)	5.37	(167,260)	(167,260)	(167,260)	(167,260)	(167,260)	(61,884)	0
LARPD	27,510	5.37	5,123	5,123	5,123	5,123	5,123	1,895	0
ACOE	<u>40,091</u>	5.37	<u>7,466</u>	<u>7,466</u>	<u>7,466</u>	<u>7,466</u>	<u>7,466</u>	<u>2,761</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2018

	Total Change to be Recognized	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	Thereafter
Alameda County	\$1,738,127	5.43	\$320,097	\$320,097	\$320,097	\$320,097	\$320,097	\$137,642	\$0
Health System	680,885	5.43	125,393	125,393	125,393	125,393	125,393	53,920	0
Superior Court	(2,537,099)	5.43	(467,238)	(467,238)	(467,238)	(467,238)	(467,238)	(200,909)	0
First 5	175,250	5.43	32,275	32,275	32,275	32,275	32,275	13,875	0
Housing Authority	(46,967)	5.43	(8,649)	(8,649)	(8,649)	(8,649)	(8,649)	(3,722)	0
LARPD	(10,196)	5.43	(1,878)	(1,878)	(1,878)	(1,878)	(1,878)	(806)	0
ACOE	<u>0</u>	5.43	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2017

	Total Change to be Recognized	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	Thereafter
Alameda County	\$(9,479,381)	5.47	\$(1,732,979)	\$(1,732,979)	\$(1,732,979)	\$(1,732,979)	\$(1,732,979)	\$(814,486)	\$0
Health System	13,073,831	5.47	2,390,097	2,390,097	2,390,097	2,390,097	2,390,097	1,123,346	0
Superior Court	(2,908,250)	5.47	(531,672)	(531,672)	(531,672)	(531,672)	(531,672)	(249,890)	0
First 5	(37,941)	5.47	(6,936)	(6,936)	(6,936)	(6,936)	(6,936)	(3,261)	0
Housing Authority	(403,509)	5.47	(73,767)	(73,767)	(73,767)	(73,767)	(73,767)	(34,674)	0
LARPD	(98,213)	5.47	(17,954)	(17,954)	(17,954)	(17,954)	(17,954)	(8,443)	0
ACOE	<u>(146,537)</u>	5.47	<u>(26,789)</u>	<u>(26,789)</u>	<u>(26,789)</u>	<u>(26,789)</u>	<u>(26,789)</u>	<u>(12,592)</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2016

	Total Change to be Recognized	Recognition Period (Years)	2017	2018	2019	2020	2021	2022	Thereafter
Alameda County	\$773,839	5.60	\$138,186	\$138,185	\$138,185	\$138,185	\$138,185	\$82,913	\$0
Health System	(286,750)	5.60	(51,206)	(51,205)	(51,205)	(51,205)	(51,205)	(30,724)	0
Superior Court	(657,369)	5.60	(117,388)	(117,387)	(117,387)	(117,387)	(117,387)	(70,433)	0
First 5	178,251	5.60	31,831	31,830	31,830	31,830	31,830	19,100	0
Housing Authority	115,948	5.60	20,705	20,705	20,705	20,705	20,705	12,423	0
LARPD	(132,463)	5.60	(23,653)	(23,654)	(23,654)	(23,654)	(23,654)	(14,194)	0
ACOE	<u>8,544</u>	5.60	<u>1,525</u>	<u>1,526</u>	<u>1,526</u>	<u>1,526</u>	<u>1,526</u>	<u>915</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2015

	Total Change to be Recognized	Recognition Period (Years)	2016	2017	2018	2019	2020	2021	Thereafter
Alameda County	\$716,115	5.64	\$126,970	\$126,970	\$126,970	\$126,970	\$126,970	\$81,265	\$0
Health System	(1,234,870)	5.64	(218,949)	(218,949)	(218,949)	(218,949)	(218,949)	(140,125)	0
Superior Court	221,160	5.64	39,213	39,213	39,213	39,213	39,213	25,095	0
First 5	95,336	5.64	16,904	16,904	16,904	16,904	16,904	10,816	0
Housing Authority	92,578	5.64	16,415	16,415	16,415	16,415	16,415	10,503	0
LARPD	106,148	5.64	18,821	18,821	18,821	18,821	18,821	12,043	0
ACOE	<u>3,533</u>	5.64	<u>626</u>	<u>626</u>	<u>626</u>	<u>626</u>	<u>626</u>	<u>403</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

Section 3: Actuarial Assumptions and Methods and Appendices

Actuarial assumptions and methods

For December 31, 2020 Measurement Date and Employer Reporting as of June 30, 2021

Rationale for Assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the December 1, 2016 through November 30, 2019 Actuarial Experience Study report dated September 9, 2020. Unless otherwise noted, all actuarial assumptions and methods shown below apply to all tiers. These assumptions were adopted by the Board.
<u>Economic Assumptions</u>	
Net Investment Return:	7.00%, net of investment expenses.
Employee Contribution Crediting Rate:	7.00%, compounded semi-annually.
Consumer Price Index:	Increase of 2.75% per year. Retiree COLA increases due to CPI are subject to a 2.75% maximum change per year for General Tier 1, General Tier 3, and Safety Tier 1, and 2% maximum change per year for General Tier 2, General Tier 4, Safety Tier 2, Safety Tier 2C, Safety Tier 2D, and Safety Tier 4. (For General Tier 1, General Tier 3, and Safety Tier 1 members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3% per year.) The actual COLA granted by ACERA on April 1, 2020 has been reflected in the December 31, 2019 valuation.
Payroll Growth:	Inflation of 2.75% per year plus real “across the board” salary increases of 0.50% per year, used to amortize the Unfunded Actuarial Accrued Liability as a level percentage of payroll.
Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:	Increase of 2.75% per year from the valuation date.
Increase in Section 7522.10 Compensation Limit:	Increase of 2.75% per year from the valuation date.

Section 3: Actuarial Assumptions and Methods and Appendices

Salary Increases:

The annual rate of compensation increase includes:

- Inflation at 2.75%, plus
- “Across the board” salary increases of 0.50% per year, plus
- The following merit and promotion increases:

Years of Service	Rate (%)	
	General	Safety
0-1	5.10	8.00
1-2	5.10	8.00
2-3	4.50	8.00
3-4	2.90	4.90
4-5	2.10	3.70
5-6	1.60	2.10
6-7	1.50	1.30
7-8	1.50	1.20
8-9	1.00	0.90
9-10	0.90	0.90
10-11	0.70	0.80
11 & Over	0.40	0.80

Additional Cashout Assumptions:

Additional pay elements are expected to be received during a member’s final average earnings period. The percentages, added to the final average salary, used in this valuation are:

	Service Retirement	Disability Retirement
General Tier 1	7.5%	6.5%
General Tier 2	3.0%	1.4%
General Tier 3	7.5%	6.5%
General Tier 4	N/A	N/A
Safety Tier 1	7.5%	6.4%
Safety Tier 2	2.5%	1.9%
Safety Tier 2C	2.5%	1.9%
Safety Tier 2D	2.5%	1.9%
Safety Tier 4	N/A	N/A

Section 3: Actuarial Assumptions and Methods and Appendices

Demographic Assumptions:

Post-Retirement Mortality Rates:

Healthy

- **General Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.
- **Safety Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

Disabled

- **General Members:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates decreased by 10% for females, projected generationally with the two-dimensional mortality improvement scale MP-2019.
- **Safety Members:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2019.

Beneficiaries

- **All Beneficiaries:** Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2019.

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

Section 3: Actuarial Assumptions and Methods and Appendices

Pre-Retirement Mortality Rates:

- **General Members:** Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.
- **Safety Members:** Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

Age	Rate (%)			
	General ¹		Safety ¹	
	Male	Female	Male	Female
20	0.04	0.01	0.04	0.02
25	0.02	0.01	0.03	0.02
30	0.04	0.01	0.04	0.02
35	0.04	0.02	0.04	0.03
40	0.06	0.03	0.05	0.04
45	0.09	0.05	0.07	0.06
50	0.13	0.08	0.10	0.08
55	0.19	0.11	0.15	0.11
60	0.28	0.17	0.23	0.15
65	0.41	0.27	0.35	0.20

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

¹ Generational projections beyond the base year (2010) are not reflected in the above mortality rates.

Mortality Rates for Member Contributions:

- **General Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 30% male and 70% female.
- **Safety Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 75% male and 25% female.

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Optional Forms of Benefit:

Service Retirement and All Beneficiaries

- **General Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 30% male and 70% female.
- **General Beneficiaries:** Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 70% male and 30% female.
- **Safety Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 75% male and 25% female.
- **Safety Beneficiaries:** Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 25% male and 75% female.

Disability Retirement

- **General Members:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates decreased by 10% for females, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 30% male and 70% female.
- **Safety Members:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 75% male and 25% female.

Disability Incidence:

Age	Rate (%)	
	General	Safety
20	0.00	0.00
25	0.01	0.03
30	0.03	0.26
35	0.07	0.64
40	0.09	1.22
45	0.16	1.50
50	0.26	2.10
55	0.33	2.65
60	0.38	3.80

65% of General disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected disabilities.

100% of Safety disabilities are assumed to be service connected disabilities.

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Termination:

Years of Service	Rate (%)	
	General	Safety
0-1	12.00	4.00
1-2	9.00	4.00
2-3	8.00	4.00
3-4	6.00	3.50
4-5	6.00	3.00
5-6	6.00	2.00
6-7	5.25	1.80
7-8	4.25	1.70
8-9	3.75	1.60
9-16	3.50	1.50
16-17	3.40	1.40
17-18	3.30	1.30
18-19	3.20	1.20
19-20	3.10	1.10
20 or more	3.00	1.00

For members with less than five years of service, 55% of all terminated members are assumed to choose a refund of contributions and the other 45% are assumed to choose a deferred vested benefit. For members with five or more years of service, 30% of all terminated members are assumed to choose a refund of contributions and the other 70% are assumed to choose a deferred vested benefit.

No termination is assumed after a member is eligible for retirement.

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Retirement Rates:

Age	Rate (%) ¹									
	General					Safety				
	Tier 1	Tier 2 ²		Tier 3	Tier 4	Tier 1 ³	Tier 2, 2D ²		Tier 2C ³	Tier 4
< 30		30+	< 30				30+			
49	0.0	0.0	0.0	0.0	0.0	0.0	12.0	18.0	0.0	0.0
50	2.0	2.0	4.0	10.0	0.0	35.0	12.0	18.0	4.0	4.0
51	4.0	2.0	4.0	10.0	0.0	30.0	10.0	24.0	2.0	2.0
52	4.0	2.0	4.0	10.0	4.0	25.0	10.0	24.0	2.0	2.0
53	5.0	2.0	4.0	10.0	2.0	35.0	10.0	25.0	3.0	3.0
54	5.0	2.0	4.0	10.0	2.0	45.0	12.0	27.0	6.0	6.0
55	6.0	2.0	4.0	12.0	5.0	45.0	12.0	29.0	10.0	10.0
56	10.0	2.5	4.5	14.0	2.5	45.0	14.0	32.0	12.0	12.0
57	12.0	4.0	5.0	16.0	3.5	45.0	16.0	32.0	20.0	20.0
58	12.0	4.0	5.0	18.0	3.5	45.0	18.0	30.0	10.0	10.0
59	14.0	4.5	8.0	20.0	4.5	45.0	18.0	30.0	15.0	15.0
60	20.0	8.0	8.5	20.0	5.0	45.0	25.0	30.0	60.0	60.0
61	20.0	9.0	13.5	20.0	5.0	45.0	25.0	30.0	60.0	60.0
62	35.0	15.0	22.5	30.0	18.0	45.0	25.0	30.0	60.0	60.0
63	30.0	15.0	22.5	25.0	15.0	45.0	25.0	30.0	60.0	60.0
64	30.0	18.0	27.0	25.0	17.0	45.0	30.0	30.0	60.0	60.0
65	30.0	25.0	27.5	50.0	25.0	100.0	100.0	100.0	100.0	100.0
66	30.0	30.0	33.0	50.0	30.0	100.0	100.0	100.0	100.0	100.0
67	30.0	30.0	33.0	50.0	30.0	100.0	100.0	100.0	100.0	100.0
68	30.0	30.0	33.0	50.0	30.0	100.0	100.0	100.0	100.0	100.0
69	35.0	35.0	38.5	50.0	35.0	100.0	100.0	100.0	100.0	100.0
70	40.0	40.0	40.0	65.0	25.0	100.0	100.0	100.0	100.0	100.0
71	40.0	40.0	40.0	65.0	25.0	100.0	100.0	100.0	100.0	100.0
72	40.0	40.0	40.0	65.0	25.0	100.0	100.0	100.0	100.0	100.0
73	40.0	40.0	40.0	65.0	25.0	100.0	100.0	100.0	100.0	100.0
74	40.0	40.0	40.0	65.0	25.0	100.0	100.0	100.0	100.0	100.0
75 & Over	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ The retirement rates only apply to members that are eligible to retire at the age shown.

² Different retirement rates are assumed for General Tier 2 and Safety Tier 2 & 2D members who have accrued less than 30 years of service and those who have accrued at least 30 years of service.

³ Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Section 3: Actuarial Assumptions and Methods and Appendices

Retirement Age and Benefit for Deferred Vested Members:	<p>General Retirement Age: 61 Safety Retirement Age: 55</p> <p>Future deferred vested members who terminate with less than five years of service and are not vested are assumed to retire at age 70 for both General and Safety if they decide to leave their contributions on deposit. 25% of future General and 50% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 3.65% and 4.05% compensation increases are assumed per annum for General and Safety, respectively.</p>
Future Benefit Accruals:	1.0 year of service per year of employment, plus 0.003 years of additional service for General members and 0.007 years of additional service for Safety members, to anticipate conversion of unused sick leave for each year of employment.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Inclusion of Deferred Vested Members:	All deferred vested members are included in the valuation.
Data Adjustment:	Data as of November 30 has been adjusted to December 31 by adding one month of age and, for active members, one month of service.
Form of Payment:	All active and inactive vested members are assumed to elect the unmodified option at retirement.
Percent Married:	70% of male members; 50% of female members.
Age and Gender of Spouse:	For all active and inactive members, male members are assumed to have a female spouse who is 3 years younger than the member and female members are assumed to have a male spouse who is 2 years older than the member.
<u>Actuarial Funding Policy</u>	
Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the age on the valuation date minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation.
Expected Remaining Service Lives:	<p>The average of the expected service lives of all employees is determined by:</p> <ul style="list-style-type: none"> • Calculating each active employee's expected remaining service life as the present value of \$1 per year of future service at zero percent interest. • Setting the remaining service life to zero for each nonactive or retired member. <p>Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.</p>

Section 3: Actuarial Assumptions and Methods and Appendices

Changed Actuarial Assumptions:	Based on the December 1, 2016 through November 30, 2019 Actuarial Experience Study report dated September 9, 2020, various actuarial assumptions were updated. The prior actuarial assumptions are shown below.
Prior Actuarial Assumptions:	Prior assumptions were based on the December 1, 2013 through November 30, 2016 Actuarial Experience Study report dated September 6, 2017.
<u>Economic Assumptions</u>	
<i>Net Investment Return:</i>	7.25%; net of investment expenses.
<i>Employee Contribution Crediting Rate:</i>	7.25%, compounded semi-annually.
<i>Consumer Price Index:</i>	Increase of 3.00% per year. Retiree COLA increases due to CPI are subject to a 3% maximum change per year for General Tier 1, General Tier 3, and Safety Tier 1, and 2% maximum change per year for General Tier 2, General Tier 4, Safety Tier 2, Safety Tier 2C, Safety Tier 2D, and Safety Tier 4.
<i>Payroll Growth:</i>	Inflation of 3.00% per year plus real “across the board” salary increases of 0.50% per year, used to amortize the Unfunded Actuarial Accrued Liability as a level percentage of payroll.
<i>Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:</i>	Increase of 3.00% per year from the valuation date.
<i>Increase in Section 7522.10 Compensation Limit:</i>	Increase of 3.00% per year from the valuation date.

Section 3: Actuarial Assumptions and Methods and Appendices

Prior Actuarial Assumptions (continued):

Prior assumptions were based on the December 1, 2013 through November 30, 2016 Actuarial Experience Study report dated September 6, 2017.

Economic Assumptions (continued)

Salary Increases:

The annual rate of compensation increase includes:

- Inflation at 3.00%, plus
- “Across the board” salary increases of 0.50% per year, plus
- The following merit and promotion increases:

Years of Service	Rate (%)	
	General	Safety
0-1	4.80	7.80
1-2	4.80	7.80
2-3	3.90	7.00
3-4	2.40	4.40
4-5	1.90	3.50
5-6	1.60	2.30
6-7	1.50	1.60
7-8	1.10	1.00
8-9	0.80	1.00
9-10	0.80	0.90
10-11	0.50	0.80
11 & Over	0.40	0.80

Additional Cashout Assumptions:

Additional pay elements are expected to be received during a member’s final average earnings period. The percentages, added to the final average salary, used in this valuation are:

	Service Retirement	Disability Retirement
General Tier 1	8.0%	6.5%
General Tier 2	3.0%	1.4%
General Tier 3	8.0%	6.5%
General Tier 4	N/A	N/A
Safety Tier 1	8.5%	6.4%
Safety Tier 2	3.5%	2.1%
Safety Tier 2C	3.5%	2.1%
Safety Tier 2D	3.5%	2.1%
Safety Tier 4	N/A	N/A

Section 3: Actuarial Assumptions and Methods and Appendices

Prior Actuarial Assumptions (continued):

Prior assumptions were based on the December 1, 2013 through November 30, 2016 Actuarial Experience Study report dated September 6, 2017.

Demographic Assumptions

Post-Retirement Mortality Rates:

Healthy

- **General Members and All Beneficiaries:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, with no setback for males and females, projected generationally with the two-dimensional MP-2016 projection scale.
- **Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, with no setback for males and females, projected generationally with the two-dimensional MP-2016 projection scale.

Disabled

- **General Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, set forward seven years for males and set forward four years for females, projected generationally with the two-dimensional MP-2016 projection scale.
- **Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, set forward two years for males and with no set forward for females, projected generationally with the two-dimensional MP-2016 projection scale.

The RPH-2014 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Pre-Retirement Mortality Rates:

- **General and Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Employee Mortality Tables multiplied by 80%, projected generationally with the two-dimensional MP-2016 projection scale.

Age	Rate (%)			
	General ¹		Safety ¹	
	Male	Female	Male	Female
20	0.05	0.02	0.05	0.02
25	0.05	0.02	0.05	0.02
30	0.05	0.02	0.05	0.02
35	0.05	0.03	0.05	0.03
40	0.06	0.04	0.06	0.04
45	0.10	0.07	0.10	0.07
50	0.17	0.11	0.17	0.11
55	0.27	0.17	0.27	0.17
60	0.45	0.24	0.45	0.24
65	0.78	0.36	0.78	0.36

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

¹ Generational projections beyond the base year (2014) are not reflected in the above mortality rates.

Section 3: Actuarial Assumptions and Methods and Appendices

Prior Actuarial Assumptions (continued):

Prior assumptions were based on the December 1, 2013 through November 30, 2016 Actuarial Experience Study report dated September 6, 2017.

Demographic Assumptions (continued)

Mortality Rates for Member Contributions:

- **General Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, with no setback for males and females, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, weighted 30% male and 70% female.
- **Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, with no setback for males and females, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, weighted 75% male and 25% female.

Optional Forms of Benefit:

Service Retirement and All Beneficiaries

- **General Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, with no setback for males and females, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, weighted 30% male and 70% female.
- **General Beneficiaries:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, with no setback for males and females, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, weighted 70% male and 30% female.
- **Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, with no setback for males and females, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, weighted 75% male and 25% female.
- **Safety Beneficiaries:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, with no setback for males and females, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, weighted 25% male and 75% female.

Disability Retirement

- **General Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, set forward seven years for males and set forward four years for females, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, weighted 30% male and 70% female.
- **Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, set forward two years for males and with no set forward for females, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, weighted 75% male and 25% female.

Section 3: Actuarial Assumptions and Methods and Appendices

**Prior Actuarial Assumptions
(continued):**

Prior assumptions were based on the December 1, 2013 through November 30, 2016 Actuarial Experience Study report dated September 6, 2017.

**Demographic Assumptions
(continued)**

Disability Incidence:

Age	Rate (%)	
	General	Safety
20	0.00	0.00
25	0.01	0.03
30	0.03	0.26
35	0.05	0.58
40	0.08	0.73
45	0.19	0.78
50	0.31	1.52
55	0.38	2.00
60	0.43	2.60

60% of General disabilities are assumed to be service connected disabilities. The other 40% are assumed to be non-service connected disabilities.

100% of Safety disabilities are assumed to be service connected disabilities.

Section 3: Actuarial Assumptions and Methods and Appendices

Prior Actuarial Assumptions (continued):

Prior assumptions were based on the December 1, 2013 through November 30, 2016 Actuarial Experience Study report dated September 6, 2017.

Demographic Assumptions (continued)

Termination:

Less Than Five Years of Service

Years of Service	Rate (%)	
	General	Safety
0-1	11.00	4.00
1-2	9.00	3.50
2-3	8.00	3.50
3-4	6.00	2.50
4-5	6.00	2.00

60% of all terminated members with less than 5 years of service are assumed to choose a refund of contributions. The other 40% are assumed to choose a deferred vested benefit.

Five or More Years of Service

Age	Rate (%)	
	General	Safety
20	6.00	2.00
25	6.00	2.00
30	5.40	2.00
35	4.40	1.70
40	3.40	1.20
45	3.00	1.00
50	3.00	1.00
55	3.00	1.00
60	3.00	0.40

35% of all terminated members with 5 or more years of service are assumed to choose a refund of contributions. The other 65% are assumed to choose a deferred vested benefit.

No termination is assumed after a member is eligible for retirement (as long as a retirement rate is present).

Section 3: Actuarial Assumptions and Methods and Appendices

Prior Actuarial Assumptions (continued):

Prior assumptions were based on the December 1, 2013 through November 30, 2016 Actuarial Experience Study report dated September 6, 2017.

Demographic Assumptions (continued)

Retirement Rates:

Age	Rate (%) ¹							
	General				Safety			
	Tier 1	Tier 2	Tier 3	Tier 4	Tier 1 ²	Tier 2, 2D ²	Tier 2C ²	Tier 4
49	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00
50	4.00	2.00	6.00	0.00	35.00	15.00	4.00	4.00
51	4.00	2.00	3.00	0.00	30.00	15.00	2.00	2.00
52	4.00	2.00	5.00	4.00	25.00	15.00	2.00	2.00
53	4.00	2.00	6.00	1.50	35.00	15.00	3.00	3.00
54	4.00	2.00	6.00	1.50	45.00	15.00	6.00	6.00
55	6.00	2.00	12.00	2.00	45.00	15.00	10.00	10.00
56	8.00	3.00	13.00	2.50	45.00	15.00	12.00	12.00
57	10.00	4.00	13.00	3.50	45.00	15.00	20.00	20.00
58	12.00	4.00	14.00	3.50	45.00	20.00	10.00	10.00
59	14.00	5.00	16.00	4.50	45.00	20.00	15.00	15.00
60	20.00	7.00	21.00	6.00	45.00	30.00	60.00	60.00
61	20.00	9.00	20.00	8.00	45.00	30.00	60.00	60.00
62	35.00	15.00	30.00	18.00	45.00	30.00	60.00	60.00
63	30.00	16.00	25.00	15.00	45.00	30.00	60.00	60.00
64	30.00	18.00	25.00	17.00	45.00	50.00	60.00	60.00
65	35.00	25.00	30.00	22.00	100.00	100.00	100.00	100.00
66	35.00	25.00	25.00	25.00	100.00	100.00	100.00	100.00
67	30.00	25.00	25.00	25.00	100.00	100.00	100.00	100.00
68	30.00	30.00	25.00	30.00	100.00	100.00	100.00	100.00
69	35.00	35.00	50.00	35.00	100.00	100.00	100.00	100.00
70	65.00	50.00	65.00	50.00	100.00	100.00	100.00	100.00
71	65.00	50.00	65.00	50.00	100.00	100.00	100.00	100.00
72	65.00	50.00	65.00	50.00	100.00	100.00	100.00	100.00
73	65.00	50.00	65.00	50.00	100.00	100.00	100.00	100.00
74	65.00	50.00	65.00	50.00	100.00	100.00	100.00	100.00
75	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

¹ The retirement rates only apply to members that are eligible to retire at the age shown.

² Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Section 3: Actuarial Assumptions and Methods and Appendices

**Prior Actuarial Assumptions
(continued):**

Prior assumptions were based on the December 1, 2013 through November 30, 2016 Actuarial Experience Study report dated September 6, 2017.

**Demographic Assumptions
(continued)**

*Retirement Age and Benefit for
Deferred Vested Members:*

General Retirement Age: 61
Safety Retirement Age: 56

Future deferred vested members who terminate with less than five years of service and are not vested are assumed to retire at age 70 for both General and Safety if they decide to leave their contributions on deposit. 30% of future General and 60% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 3.90% and 4.30% compensation increases are assumed per annum for General and Safety, respectively.

Future Benefit Accruals:

1.0 year of service per year of employment, plus 0.003 years of additional service for General members and 0.006 years of additional service for Safety members, to anticipate conversion of unused sick leave for each year of employment.

Section 3: Actuarial Assumptions and Methods and Appendices

Appendix A: Projection of Plan's Fiduciary Net Position for Use in the Calculation of Discount Rate as of December 31, 2020 (\$ in millions)

Year Beginning January 1,	Projected Beginning Plan Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Plan Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2020	7,819	416	531	15	657	8,346 **
2021	8,346 **	441	622	16	574	8,724
2022	8,724	438	652	17	599	9,092
2023	9,092	439	683	17	624	9,454
2024	9,454	437	715	18	648	9,806
2025	9,806	438	747	19	671	10,150
2026	10,150	440	778	19	694	10,487
2027	10,487	448	809	20	717	10,822
2028	10,822	456	840	21	739	11,157
2044	12,115	225	1,198	23	807	11,926
2045	11,926	230	1,206	23	794	11,721
2046	11,721	236	1,205	22	780	11,511
2047	11,511	234	1,194	22	765	11,294
2089	286	38	115	1	17	226
2090	226	34	97	0 *	13	175
2091	175	30	82	0 *	10	133
2092	133	27	68	0 *	8	100
2093	100	24	56	0 *	6	73
2094	73	21	45	0 *	4	53
2095	53	18	37	0 *	3	37
2096	37	16	29	0 *	2	26
2097	26	14	23	0 *	1	18
2098	18	12	18	0 *	1	12
2099	12	10	14	0 *	1	8
2100	8	9	11	0 *	0 *	6
2110	2	1	2	0 *	0 *	1
2111	1	1	1	0 *	0 *	1
2112	1	1	1	0 *	0 *	0 *
2113	0 *	0 *	1	0 *	0 *	0 *
2114	0 *	0 *	0 *	0 *	0 *	0 *
2134	0 *	0 *	0 *	0	0 *	0 *
2135	0 *	0 *	0	0	0 *	0 *
2135	Discounted Value:	0 **, **				

* Less than \$1M, when rounded.

** Excludes \$69.0 million in the Contingency Reserve plus \$29.7 million required to bring the Contingency Reserve to 1% of total assets as of December 31, 2020. See Note 2.

Section 3: Actuarial Assumptions and Methods and Appendices

Notes

1. Amounts may not total exactly due to rounding.
2. Amounts shown in the year beginning January 1, 2020 row are actual amounts, based on the financial statements provided by ACERA. The Plan Fiduciary Net Position as of December 31, 2020 differs from the amount used for other GASB 67 purposes in that it excludes the \$69.0 million Contingency Reserve plus the \$29.7 million of the Gross Market Stabilization Reserve expected to be used to bring the Contingency Reserve up to 1% of total assets (\$98.7 million). These assets are not used in developing the projected total contributions in column (b).
3. Years 2029-2043, 2048-2088, 2101-2109, and 2115-2133 have been omitted from this table.
4. Column (a): Except for the "discounted value" shown for 2135, all of the projected beginning plan fiduciary net position amounts shown have not been adjusted for the time value of money.
5. Column (b): Projected total contributions include employee and employer normal cost contributions based on closed group projections (based on covered active members as of November 30, 2019); plus employer contributions to the unfunded actuarial accrued liability; plus employer contributions to fund each year's annual administrative expenses as well as future allocations of excess earnings to the SRBR under ACERA's funding policy, both reflecting a 20-year amortization schedule. Contributions are assumed to occur halfway through the year, on average.
6. Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GASB Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of November 30, 2019. The projected benefit payments reflect the cost of living increase assumption of 2.75% per annum for Tiers 1 and 3, and 2.00% per annum for Tiers 2 and 4. The projected benefit payments include the Non-OPEB Supplemental Retiree Benefits Reserve (SRBR) benefits to the extent the current Non-OPEB SRBR supports those benefits. Benefit payments are assumed to occur halfway through the year, on average. In accordance with paragraph 31.b.(1)(e) of GASB Statement No. 67, the long-term expected rate of return on Plan investments of 7.00% per annum was applied to all periods of projected benefit payments to determine the discount rate.

In addition, the projected benefit payments in column (c) include an amount equal to 0.65% of the beginning-of-year market value to reflect the approximated outflow of future allocations to the SRBR. This outflow has an estimated present value of \$0.99 billion. This present value of outflow is expected to be sufficient to pay for the remaining present value of the non-OPEB SRBR benefits of \$0.08 billion as well as the remaining present value of the OPEB SRBR benefits of \$0.26 billion.
7. Column (d): Projected administrative expenses are calculated as approximately 0.19% of the beginning plan fiduciary net position amount. The 0.19% portion was based on the actual fiscal year 2020 administrative expenses as a percentage of the beginning plan fiduciary net position amount as of January 1, 2020. Administrative expenses are assumed to occur halfway through the year, on average.
8. Column (e): Projected investment earnings are based on the assumed investment rate of return of 7.00% per annum.
9. As illustrated in this Exhibit, the Plan's fiduciary net position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected "cross-over date" when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.00% per annum was applied to all periods of projected benefit payments to determine the total pension liability as of December 31, 2020 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.
10. This projection is based on a model developed by our Actuarial Technology and Systems unit, comprised of both actuaries and programmers. The model allows the client team, under the supervision of the responsible actuary, control over the entry of future expected contribution income, benefit payments and administrative expenses. The projection of fiduciary net position and the discounting of benefits is part of the model.

Section 3: Actuarial Assumptions and Methods and Appendices

Appendix B: Definition of Terms

Definitions of certain terms as they are used in Statement 68. The terms may have different meanings in other contexts.

Active Employees	Individuals employed at the end of the reporting or measurement period, as applicable.
Actual Contributions	Cash contributions recognized as additions to a Pension Plan's Fiduciary Net Position.
Actuarial Present Value of Projected Benefit Payments	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation	The determination, as of a point in time (the actuarial valuation date), of the service cost, Total Pension Liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial Valuation Date	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Ad Hoc Cost-of-Living Adjustments (Ad Hoc COLAs)	Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.
Ad Hoc Postemployment Benefit Changes	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
Automatic Cost-of-Living Adjustments (Automatic COLAs)	Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
Automatic Postemployment Benefit Changes	Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
Closed Period	A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.
Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions	Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective Net Pension Liability.
Collective Net Pension Liability	The Net Pension Liability for benefits provided through (1) a cost-sharing pension plan or (2) a single-employer or agent pension plan in circumstances in which there is a special funding situation.

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Collective Pension Expense	Pension expense arising from certain changes in the collective Net Pension Liability.
Contributions	Additions to a Pension Plan's Fiduciary Net Position for amounts from employers, nonemployer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.
Cost-of-Living Adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Employer	An employer whose employees are provided with pensions through a cost-sharing multiple-employer defined benefit pension plan.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (Cost-Sharing Pension Plan)	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered Payroll	Payroll on which contributions to a pension plan are based.
Defined Benefit Pension Plans	Pension plans that are used to provide defined benefit pensions.
Defined Benefit Pensions	Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 68.)
Defined Contribution Pension Plans	Pension plans that are used to provide defined contribution pensions.
Defined Contribution Pensions	Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.
Discount Rate	The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following: <ol style="list-style-type: none"> 1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension Plan's Fiduciary Net Position is projected (under the requirements of Statement 67) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments. 2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.

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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 age(s). The portion of this actuarial present value allocated to a valuation year is called the <i>normal cost</i> . 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 <i>actuarial accrued liability</i> .
Inactive Employees	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
Measurement Period	The period between the prior and the current measurement dates.
Multiple-Employer Defined Benefit Pension Plan	A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Net Pension Liability	The liability of employers and nonemployer contributing entities to employees for benefits provided through a defined benefit pension plan.
Other Postemployment Benefits	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Pension Plans	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed, and benefits are paid as they come due.
Pensions	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.
Plan Members	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Postemployment	The period after employment.
Postemployment Benefit Changes	Adjustments to the pension of an inactive employee.
Projected Benefit Payments	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
Public Employee Retirement System	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
Real Rate of Return	The rate of return on an investment after adjustment to eliminate inflation.

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Service Costs	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Termination Benefits	Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.
Total Pension Liability	The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement 68.

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