

Alameda County Employees' Retirement Association (ACERA)

Governmental Accounting Standards Board Statement 67 (GASB 67) Actuarial Valuation

As of December 31, 2019



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Segal



180 Howard Street, Suite 1100
San Francisco, CA 94105-6147
segalco.com
T 415.263.8200

May 27, 2020

Board of Retirement
Alameda County Employees' Retirement Association
475 14th Street, Suite 1000
Oakland, CA 94612

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards Board Statement 67 (GASB 67) Actuarial Valuation as of December 31, 2019. It contains various information that will need to be disclosed in order to comply with GASB 67.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist ACERA in preparing items related to the pension plan in their financial report. 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; 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 ACERA.

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

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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 67 (GASB 67) as of December 31, 2019. This valuation is based on:

- The benefit provisions of ACERA, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of November 30, 2018, provided by ACERA;
- The assets of the Plan as of December 31, 2019, provided by ACERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the December 31, 2019 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the December 31, 2019 valuation.

General observations on GASB 67 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 generally determined on 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.
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) on a market value basis.

Section 1: Actuarial Valuation Summary

Highlights of the valuation

1. As we disclosed in our December 31, 2019 funding valuation report, the 7.25% investment return assumption that the Board approved on December 21, 2017 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 7.25%.

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 0.60% 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.

2. The NPL measured as of December 31, 2019 was determined by rolling forward the TPL for the funded benefits as of December 31, 2018. Similar to last year, we have included in the TPL as of December 31, 2019 the non-OPEB unlimited Actuarial Accrued Liability (AAL) of \$198.5 million, which was calculated by rolling forward the total unlimited non-OPEB AAL as of December 31, 2018.
3. We have also continued the practice of adjusting the Plan’s Fiduciary Net Position as of December 31, 2019 to include the \$40.4 million set aside by the Retirement Board in the SRBR reserve to pay non-vested Supplemental COLA and retired member death benefits² as of December 31, 2019. It should be noted that as of December 31, 2019, the deferred investment gain for the entire Plan was \$260.7 million. Consequently, after first replenishing the Contingency Reserve from \$0 to \$89.4 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 \$3.8 million. The net effect of the adjustments to the Plan’s Fiduciary Net Position as of December 31, 2019 for non-OPEB SRBR benefits was an addition of \$44.2 million.

¹ The purpose of the GASB crossover test is to determine if the full expected return (or 7.25% 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 7.25% investment rate of return assumption can be used as the discount rate to determine the TPL and the resulting NPL.

² 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.

Section 1: Actuarial Valuation Summary

Note that the proportionate share of one-half of the net deferred market gain as of December 31, 2019 for the Pension Plan was equal to \$85.5 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.

4. The \$154.3 million difference between the \$198.5 million added to the TPL and the net \$44.2 million added to the Plan's Fiduciary Net Position as of December 31, 2019 represents the NPL attributable to non-OPEB SRBR benefits.
5. The NPL decreased from \$2,764 million as of December 31, 2018 to \$2,141 million as of December 31, 2019 primarily as a result of the favorable investment return during calendar year 2019 of about \$679 million. Changes in these values during the last two fiscal years ending December 31, 2018 and December 31, 2019 can be found in *Section 2, Schedule of Changes in Net Pension Liability* on page 19.
6. The discount rate used to measure the TPL and NPL as of December 31, 2019 and December 31, 2018 was 7.25%, following the same assumptions used by ACERA in the pension funding valuations as of December 31, 2019 and December 31, 2018, respectively. The detailed calculations used in this derivation can be found in *Section 3, Appendix A*. Various other information that is required to be disclosed can be found throughout *Section 2*.
7. The Coronavirus (COVID-19) pandemic is rapidly evolving and is having a significant impact on the US economy in 2020, including most retirement plans, and will likely continue to have an impact in the future. Our results do not include the impact of the following:
 - Changes in the market value of plan assets since December 31, 2019
 - Changes in interest rates since December 31, 2019
 - Short-term or long-term impacts on mortality of the covered population
 - The potential for federal or state fiscal relief

Each of the above factors could significantly impact these results. The above factors generally will not have an impact on the December 31, 2019 valuation, since that is based on a snapshot of assets and liabilities prior to recent events. Given the high level of uncertainty and fluidity of the current events, you may wish to consider updated estimates to monitor the plan's financial status. We will keep you updated on emerging developments.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

Measurement Date		December 31, 2019	December 31, 2018
Disclosure elements for fiscal year ending December 31:	• Service cost ⁽¹⁾	\$215,625,191	\$209,890,150
	• Total Pension Liability	9,959,791,606	9,535,148,109
	• Plan's Fiduciary Net Position ⁽²⁾	7,819,098,646	6,771,146,134
	• Net Pension Liability	2,140,692,960	2,764,001,975
Schedule of contributions for fiscal year ending December 31:	• Actuarially determined contributions	\$298,526,950	\$269,684,809
	• Actual contributions ⁽³⁾	298,526,950	269,684,809
	• Contribution deficiency / (excess)	0	0
Demographic data for plan year ending December 31:⁽⁴⁾	• Number of retired members and beneficiaries	10,078	9,783
	• Number of inactive vested members ⁽⁵⁾	2,821	2,568
	• Number of active members	11,336	11,349
Key assumptions as of December 31:	• Investment rate of return	7.25%	7.25%
	• Inflation rate	3.00%	3.00%
	• Projected salary increases ⁽⁶⁾	General: 8.30% to 3.90% and Safety: 11.30% to 4.30%	General: 8.30% to 3.90% and Safety: 11.30% to 4.30%

(1) The Service Cost is based on the previous year's valuation, meaning the December 31, 2019 and December 31, 2018 measurement date values are based on the valuations as of December 31, 2018 and December 31, 2017, respectively. Both service costs have been calculated using the assumptions shown in the December 31, 2018 measurement date column, as there had been no changes in the actuarial assumptions between the December 31, 2017 and December 31, 2018 valuations.

(2) For 2019, 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). For 2018, the Plan's Fiduciary Net Position amount shown (\$6,771,146,134) includes the net fair value of assets (\$7,592,586,569) less OPEB-related SRBR assets (\$821,440,435). The OPEB-related SRBR assets include \$873,183,258 in the SRBR-OPEB reserve (after reducing the reserve by the \$6,939,808 SRBR implicit subsidy transfer), and \$9,830,102 in the 401(h) reserve, less a proportionate share of the deferred market losses (after adjustment to include the balance in the Contingency Reserve) commensurate with the size of the OPEB and 401(h) reserves (\$61,572,926). Note that amounts may not total properly due to rounding.

(3) 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).

(4) Data as of December 31, 2018 is used in the measurement of the TPL as of December 31, 2019.

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

(6) Includes inflation at 3.00% plus real across-the-board salary increase of 0.50% plus merit and promotional 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	The valuation is based on the fair value of assets as of the valuation date, as provided by ACERA. The Association uses an “actuarial value of assets” that differs from fair value to gradually reflect six-month changes in the fair value of assets in determining contribution requirements.
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 for 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.

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 ACERA 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 67 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 (LARP), and Superior Court of California—County of Alameda, and Alameda County Office of Education.

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, 2019, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	10,078
Inactive vested members entitled to but not yet receiving benefits⁽¹⁾	2,821
Active members	<u>11,336</u>
Total	24,235
⁽¹⁾ Includes terminated members due a refund of member contributions.	

Note: Data as of December 31, 2019 is not used in the measurement of the TPL as of December 31, 2019.

Section 2: GASB 67 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, 2019 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 67 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 67 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, 2019 for 2019 (based on the December 31, 2017 valuation for the second half of 2018/2019 and on the December 31, 2018 valuation for the first half of 2019/2020) was 27.60% 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, 2019 for 2019 (based on the December 31, 2017 valuation for the second half of 2018/2019 and on the December 31, 2018 valuation for the first half of 2019/2020) was 9.53% of compensation.

Section 2: GASB 67 Information

Net pension liability

Measurement Date	December 31, 2019	December 31, 2018
Components of the Net Pension Liability		
Total Pension Liability	\$9,959,791,606	\$9,535,148,109
Plan's Fiduciary Net Position	<u>(7,819,098,646)</u>	<u>(6,771,146,134)</u>
Net Pension Liability	\$2,140,692,960	\$2,764,001,975
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	78.51%	71.01%

The Net Pension Liability for the plan was measured as of December 31, 2019 and 2018. Plan's Fiduciary Net Position (plan assets) was valued as of the measurement dates and the Total Pension Liability was determined based upon rolling forward the TPL from actuarial valuations as of December 31, 2018 and 2017, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of December 31, 2019 and 2018 are the same as those used in ACERA's funding valuations as of December 31, 2018 and 2017, respectively.

Actuarial assumptions. The TPL as of December 31, 2019 that was measured 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

Section 2: GASB 67 Information

The TPL as of December 31, 2018, that was measured by an actuarial valuation as of December 31, 2017, 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, 2018 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

Section 2: GASB 67 Information

Determination of discount rate and investment rates of return

The long-term expected rate of return on pension plan investments³ was determined in 2017 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, 2019 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
Domestic Large Cap Equity	22.40%	5.75%
Domestic Small Cap Equity	5.60%	6.37%
Developed International Equity	19.50%	6.89%
Emerging Markets Equity	6.50%	9.54%
U.S. Core Fixed Income	11.25%	1.03%
High Yield Bonds	1.50%	3.99%
International Bonds	2.25%	0.19%
TIPS	2.00%	0.98%
Real Estate	8.00%	4.47%
Commodities	3.00%	3.78%
Hedge Funds	9.00%	4.30%
Private Equity	9.00%	7.60%
Total	100.00%	

³ 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.)

Section 2: GASB 67 Information

Discount rate. The discount rate used to measure the Total Pension Liability (TPL) was 7.25% as of December 31, 2019 and December 31, 2018. 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 0.60% 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 rates⁴ 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, 2019 and December 31, 2018.

⁴ 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 Net Pension Liability of ACERA as of December 31, 2019, calculated using the discount rate of 7.25%, as well as what ACERA's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate.

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Net Pension Liability as of December 31, 2019	\$3,433,615,732	\$2,140,692,960	\$1,075,688,763

The following presents the Net Pension Liability of ACERA as of December 31, 2018, calculated using the discount rate of 7.25%, as well as what ACERA's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate.

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Net Pension Liability as of December 31, 2018	\$4,006,839,721	\$2,764,001,975	\$1,739,578,825

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Schedule of changes in Net Pension Liability – Last two fiscal years

Measurement Date	December 31, 2019	December 31, 2018
Total Pension Liability		
• Service cost ⁽¹⁾	\$215,625,191	\$209,890,150
• Interest	688,654,389	659,591,792
• Change of benefit terms	0	0
• Differences between expected and actual experience	24,548,056	13,710,084
• Changes of assumptions	0	0
• Benefit payments, including refunds of member contributions	(504,184,139)	(471,943,181)
Net change in Total Pension Liability	\$424,643,497	\$411,248,845
Total Pension Liability – beginning	<u>9,535,148,109</u>	<u>9,123,899,264</u>
Total Pension Liability – ending	<u>\$9,959,791,606</u>	<u>\$9,535,148,109</u>
Plan's Fiduciary Net Position		
• Contributions – employer ⁽²⁾	\$298,526,950	\$269,684,809
• Contributions – member	103,117,022	94,735,673
• Net investment income	1,165,766,104	(216,308,362)
• Benefit payments, including refunds of member contributions	(504,184,139)	(471,943,181)
• Administrative expense	(15,273,425)	(15,246,130)
• Other	0	0
Net change in Plan's Fiduciary Net Position	\$1,047,952,512	\$(339,077,191)
Plan's Fiduciary Net Position⁽³⁾ – beginning	<u>6,771,146,134</u>	<u>7,110,223,325</u>
Plan's Fiduciary Net Position⁽³⁾ – ending	<u>\$7,819,098,646</u>	<u>\$6,771,146,134</u>
Net Pension Liability – ending	<u>\$2,140,692,960</u>	<u>\$2,764,001,975</u>
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	78.51%	71.01%
Covered payroll⁽⁴⁾	\$1,081,586,887	\$1,046,033,851
Plan Net Pension Liability as percentage of covered payroll	197.92%	264.24%

(1) The Service Cost is based on the previous year's valuation, meaning the December 31, 2019 and December 31, 2018 measurement date values are based on the valuations as of December 31, 2018 and December 31, 2017, respectively. Both service costs have been calculated using the assumptions shown in the December 31, 2018 measurement date column, as there had been no changes in the actuarial assumptions between the December 31, 2017 and December 31, 2018 valuations.

(2) 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).

(3) See footnote (2) on page 7 for a discussion on the development of the 2019 "Plan's Fiduciary Net Position – beginning" amount of \$6,771,146,134 and the 2019 "Plan's Fiduciary Net Position – ending" amount of \$7,819,098,646.

(4) 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 contributions – Last ten fiscal 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
2010	\$147,543,301	\$147,543,301	\$0	\$839,617,361	17.57%
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%

⁽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.

See accompanying notes to this schedule on next page.

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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 2019 (or the second half of fiscal year 2018/2019) are calculated based on the December 31, 2017 valuation. Actuarially determined contribution rates for the last six months of calendar year 2019 (or the first half of fiscal year 2019/2020) are calculated based on the December 31, 2018 valuation.
Actuarial cost method:	Entry Age Actuarial Cost Method
Amortization method:	Level percent of payroll (3.50% payroll growth assumed in the December 31, 2018 valuation and 3.50% payroll growth assumed in the December 31, 2017 valuation)
Remaining amortization period:	<p><u>December 31, 2017 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 15 years remaining as of December 31, 2017). 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, 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>
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, 2017 Valuation	December 31, 2018 Valuation
Investment rate of return:	7.25%, net of pension plan investment expense, including inflation	7.25%, net of pension plan 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, 2017 funding actuarial valuation	Same as those used in the December 31, 2018 funding actuarial valuation

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Appendix A: Projection of Pension Plan's Fiduciary Net Position (\$ in millions) for use in the Calculation of Discount Rate as of December 31, 2019

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)
2019	6,771	402	504	15	1,076	7,730
2020	7,730 **	391	581	18	550	8,071
2021	8,071	395	609	19	574	8,413
2022	8,413	397	638	19	597	8,749
2023	8,749	402	668	20	621	9,083
2024	9,083	405	698	21	644	9,412
2025	9,412	411	729	22	666	9,739
2026	9,739	418	759	22	689	10,064
2027	10,064	426	790	23	712	10,389
2043	11,818	226	1,155	27	816	11,678
2044	11,678	231	1,164	27	806	11,524
2045	11,524	230	1,171	27	794	11,351
2046	11,351	229	1,177	26	782	11,158
2047	11,158	227	1,181	26	767	10,945
2089	237	35	102	1	14	184
2090	184	32	86	0 *	11	140
2091	140	28	72	0 *	8	104
2092	104	25	59	0 *	6	76
2093	76	22	48	0 *	4	54
2094	54	20	39	0 *	3	37
2095	37	17	31	0 *	2	25
2096	25	15	25	0 *	1	16
2097	16	13	19	0 *	1	10
2098	10	11	15	0 *	1	7
2099	7	9	12	0 *	0 *	4
2109	2	1	1	0 *	0 *	1
2110	1	1	1	0 *	0 *	1
2111	1	1	1	0 *	0 *	1
2112	1	0 *	1	0 *	0 *	0
2113	0 *	0 *	0 *	0 *	0 *	0
2133	0 *	0 *	0 *	0 *	0 *	0
2134	0 *	0 *	0 *	0 *	0 *	0
2134	Discounted Value: 0 **, **					

* Less than \$1M, when rounded.

** Excludes \$89.4 million required to bring the Contingency Reserve to 1% of total assets as of December 31, 2019. See Note 2.

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Notes

1. Amounts may not total exactly due to rounding.
2. Amounts shown in the year beginning January 1, 2019 row are actual amounts, based on the financial statements provided by ACERA. The Plan Fiduciary Net Position as of December 31, 2019 differs from the amount used for other GASB 67 purposes in that it excludes \$89,388,911 of the Gross Market Stabilization Reserve expected to be used to bring the Contingency Reserve up to 1% of total assets. These assets are not used in developing the projected total contributions in column (b).
3. Years 2028-2042, 2048-2088, 2100-2108, and 2114-2132 have been omitted from this table.
4. Column (a): Except for the "discounted value" shown for 2134, 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, 2018); 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, 2018. The projected benefit payments reflect the cost of living increase assumption of 3.00% 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 7.25% 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 0.60% 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 \$0.84 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 \$0.19 billion as well as the remaining present value of the OPEB SRBR benefits of \$0.34 billion.
7. Column (d): Projected administrative expenses are calculated as approximately 0.23% of the beginning plan fiduciary net position amount. The 0.23% portion was based on the actual fiscal year 2019 administrative expenses as a percentage of the beginning plan fiduciary net position amount as of January 1, 2019. 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 7.25% 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 7.25% per annum was applied to all periods of projected benefit payments to determine the total pension liability as of December 31, 2019 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

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Appendix B: Definition of Terms

Definitions of certain terms as they are used in Statement 67. The terms may have different meanings in other contexts.

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).
Cost-of-Living Adjustments:	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
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.

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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 67.)
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:	<p>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:</p> <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.
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 normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the actuarial accrued liability.
Inactive Employees:	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
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 (NPL):	The liability of employers and nonemployer contributing entities to employees for benefits provided through a defined benefit pension plan.

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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.
Postemployment Healthcare Benefits:	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.
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.
Service Costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Single-Employer Defined Benefit Pension Plan (Single-Employer Pension Plan):	A defined benefit pension plan that is used to provide pensions to employees of only one employer.
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 (TPL):	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 67.